2008 WCC Poster Presentations

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P1

Changing of monocyte chemoattractant protein-1 (MCP-1) in patients with type 2 diabetes mellitus and acute coronary syndrome

T. Golitsyna[1], T. Chazova[2], K. Zykov[3].

Chemokine-driven migration of inflammatory cells has been implicated in pathogenesis of atherosclerosis-associated conditions such as myocardial infarction. Recent studies have shown the important role of proinflammatory cytokines and chemokines in the pathogenesis of atherosclerosis and diabetes mellitus(DM). It is known, that increased monocyte recruitment into subendothelial space in atherosclerotic lesions is one of the hallmarks of diabetic angiopathy. **Aim.** To study changes in level of MCP-1 in patients with diabetes mellitus and myocardial infarction (MI) or acute coronary syndrome (ASC). **Material and methods.** Serum levels of monocyte chemoattractant protein-1 (MCP-1) were measured in blood samples in 53 patients with type 2 diabetes mellitus during acute coronary syndrome (MI or ASC) and in 6 month after an acute coronary syndrome regression. The patients were followed up 12 month period. The study conducted with available commercial tests ELISA by «Bender MedSystems». **Results.** The levels of MCP-1 were statistically increased 6 month after an acute coronary syndrome regression in the hole group (at baseline – 312 [207; 389] ng/mL, after 6 month – 403 [302; 522] ng/mL)($p<0,001$). In 36 patients (67,92%) MCP-1 levels were increased from 280,5 [172,5; 347,92] ng/mL to 431 [258,9; 609,5] ng/mL– the first group ($p<0,001$); in 17 patients (32,08%) MCP-1 levels were reduced from 492,8 [354; 599] ng/mL by 334 [203; 623] ng/mL – the second group ($p<0,001$). The baseline levels of MCP-1 in two groups were statistically different ($p<0,001$). There was not correlation the levels of MCP-1 with the severity of myocardial injury (MI or ASC). Statistical difference in the levels of MCP-1 were not found between two groups after 6 month ($p<0,001$). In 25 patients (96,1%) with lower baseline level of MCP-1, it was significantly increased after 6 month ($p<0,001$), and nonfatal myocardial infarction were developed in 6 patients (24%) during the first year of follow up. **Conclusion.** MCP-1 seems to play an important role in low-grade inflammation and it is associated with advers outcome of MI or ASC in patients with type 2 diabetes mellitus.

P3

THE PRESENCE OF C ALLELE FOR -765G>C COMMON VARIANT OF COX-2 GENE CONSTITUTES A PROTECTOR FACTOR AGAINST CORONARY DISEASE IN CHILEAN INDIVIDUALS

L.A. Salazar[1], A. Hernandez[1], A. Cuevas[1], P. Jaramillo[1], C. Lanas[2], F. Lanas[2]. *[1]Laboratorio de Biología Molecular & Farmacogenética, Facultad de Medicina, Universidad de La Frontera, Temuco, Chile [2]Departamento de Medicina Interna, Facultad de Medicina, Universidad de La Frontera, Temuco, Chile*

Background: Cardiovascular diseases (CVD) are thought to be caused by matrix digestion by metalloproteinases (MMPs) leading to rupture of atherosclerotic plaques. Production of macrophage MMP-2 and MMP-9 is induced by cyclooxygenase 2 (COX-2) and prostaglandins (PGs) synthesis. PGs influence the development of atherosclerosis by modulating the inflammatory response, the expression of metalloproteinases, and the growth of cells implicated in the process, such as vascular smooth muscle cells. Although COX-2 expression may be genetically determined, the relation between COX-2 polymorphisms and the risk of CVD is unclear. In the present study we have investigated the potential impact of -765G>C polymorphism at the *COX-2* gene on susceptibility to coronary artery disease (CAD) in Chilean subjects. **Methods:** A total of 102 unrelated patients with diagnosis of CAD documented by angiography (33 – 74 years old), and 93 healthy controls (30 – 68 years old) were included in this study. The -765G>C polymorphism at the *COX-2* gene was analyzed by PCR-RFLP. **Results:** The genotype distribution for -765G>C variant of *COX-2* in CAD patients (GG: 33.3%, GC: 53.0%, CC: 13.7%) and controls (GG: 12.9%, GC: 53.8%, CC: 33.3%) was significantly different ($P<0.001$). In addition, the relative frequency of mutated C allele in CAD and controls was also different (0.402 *vs.* 0.602, $P<0.001$). The homozygous CC genotype was significantly associated with a lower risk of CAD (OR= 0.16, 95% C.I. = 0.06–0.40, $P< 0.001$). Similarly, the OR related to heterozygous GC genotype was 0.38 (95% C.I. = 0.18–0.82, $P < 0.05$). **Conclusion:** These findings suggest that the -765G>C polymophism of *COX-2* gene constitutes an inherited protective factor against CAD in Chilean subjects. This study provides important evidence for utilizing inflammation-related genetic polymorphisms for predicting genetic risk of CVD. Financial support: Convenio de Desempeño-I-2007 (LS), Dirección de Investigación y Desarrollo, Universidad de La Frontera, Chile.

P4

TRICUSPID INSUFFICIENCY DOES NOT INCREASE EARLY AFTER PERMANENT IMPLANTATION OF PACEMAKER LEADS

N. Kucukarslan[1], A. Kirilmaz[2], E. Ulusoy[2], M. Yokusoglu[3], N. Gramatnikovski[1], E. Ozal[1], H. Tatar[1]. *[1]GATA Military Medical Hospital. Department of Cardiovascular Surgery Etlik/Ankara/ Turkey [2]GATA Haydarpasa Military Hospital. Cardiology Section Kadikoy/ Istanbul/ Turkey [3]GATA Military Medical Hospital. Department of Cardiology Etlik /Ankara /Turkey*

Background: Interference between pacemaker (PM) lead and tricuspid apparatus may cause tricuspid regurgitation TR. However, data regarding TR in patients with implanted PM are controversy. Our aim is to find out the degree of TR in a group of patients before and following PM implantation in a prospective manner. **Methods:** The study group consisted of the patients referred for implantation of permanent PM or defibrillator (ICD). All patients underwent two-dimensional and Doppler echocardiographic evaluation before and after device implantation. The severity of TR was qualitatively classified into 4 groups as normal or trivial, mild, moderate, or severe. All studies were reviewed for accuracy by a second independent interpreter. **Results:** Sixty-one patients (mean age 53"b8 years, 44 male) referred for PM (n=55) or ICD (n=6) implantation consisted of the study population. Echocardiographic degree of TR was mild in 21 (70%), moderate in 7 (23%) and severe in 2 (7%) patients before PM implantation. Following device implantation, mild TR was noted in 23 (76%), moderate in 10 (33%) and severe in 2 (6%) cases. After the procedure, the TR severity was increased from normal/trivial to mild in 5 (16%) cases and from mild to moderate in 3 (10%). There was no worsening of the severity of TR in patients with moderate regurgitation following device implantation. The severity of TR did not change at a mean follow-up of 6±3 months. **Conclusions:** New or worsening tricuspid regurgitation is relatively rare after pacemaker implantation. It is not associated with an acute worsening or clinical deterioration. But echocardiographic follow-up is recommended to monitor other complications in chronic phase.

P5

IS ALLEN TEST SAFE FOR RADIAL ARTERY GRAFT IN CABG SURGERY?

N. Kucukarslan[1], E. Ozal[1], E. Kuralay[1], M. Arslan[1], H. Tatar[1]. *[1]GATA Military Medical Hospital. Department of Cardiovascular Surgery Etlik/Ankara/ Turkey*

Purpose: Allen test is commonly used in choosing the suitable arm for radial artery (RA) harvesting in CABG surgery. We tried to determine the safety of this test at performed patients. **Material and method:** 2812 CABG operations were performed at the cardiovascular surgery clinic during January 1998-December 2003. The usage of radial artery was planned in 198 and performed in 178 patients (6.33%). Preoperative Allen test and modified Allen test that using the pulse oxymetry in operation room before anesthesia were performed. The results were recorded on the patients' files. These patients were analyzed retrospectively without making sex or age discrimination by using the patients' files and operation notes. **Results:** The mean age of patients that used radial artery greft was 65+/-12 and men/women proportion was 68/110. The functional capacity was found (NYHA) Class II-III in 118 (66.29%) patients. Patient had history of MI was found in 62 (34.83%) patients. Ejection fraction was found <40 in 52 (%29.21) patients. The radial artery was found unable to provide hand perfusion by itself in 30 patients (15.30%) and Allen test was considered suspicious (+) preoperatively. The radial artery was found unable to provide hand perfusion and modified Allen test was considered suspicious (+) in 18 (9.18%) patients in operation room. Arterial Doppler ultrasonography was performed in radiology clinic to these 18 patients at the postoperative period in order to determine hand perfusion and collateral circulation. Ulnar artery wasn't able to provide alone the blood flow for palmar perfusion was found in 15 (83.33%) of these 18 patients. Hand ischemia was encountered in 1 (0.56%) patient and mortality was found in 4 (2.78%) patients. **Conclusion:** Modified Allen test is a safe, simple and considerably cheap method in choosing the arm for radial artery harvesting in CABG surgery according to angiography or Doppler ultrasonography.

P6

TWO FACTORS EFFECTING THE MORBIDITY AND MORTALITY IN SURGERY OF VASCULAR INJURIES DUE TO GUNSHOT: missed arterial injury, ignored vein repair

N. Kucukarslan[1], B. Oz[1], E. Ozal[1], V. Yildirim[1], M Sahin[1], H. Tatar[1]. *[1]GATA Military Medical Hospital. Department of Cardiovascular Surgery Etlik/Ankara/ Turkey*

Aim: The aim of this study is to assess the causes and the clinical outcomes of missed arterial injuries and ignored venous repair after gunshot surgery. **Methods:** This retrospective study was undertaken to analyze 275 shotgun vascular injury patients' who admitted to our clinic from January 1992 to December 2004. All patients' data were searched from their medical file and operative note. The incidence of missed arterial injuries and ignored venous repair, localization and type of vascular complications, limb loss and mortality was documented. **Results:** Seventy-five patients (27.27%) with a delayed diagnosis of an arterial injury and 91 patients (33.09%) with an ignored venous repair were treated. Complications of missed arterial injuries were false aneurysm n=43 (57.33%), arteriovenous fistula n=20 (26.66%), occlusion n=12 (16%). The most commonly missed injured artery (n=20) was superficial femoral artery. There were 167 venous injuries patients. Complications of ignored venous repair were venous edema and deep vein thrombosis. **Conclusion:** Missed arterial injuries and ignored venous repair at initial diagnoses or operations to affect the morbidity and mortality in shotgun injury patients. After hemodynamic stabilization, shotgun patients should be undergoing arteriography and venography to define the anatomic localization of vascular injuries. All vascular continuity is restored either by primary repair or by an autogenous graft. All venous injuries located in popliteal and femoral area should be repaired.

P7

Atherothrombotic risk factors correspond to the appearance of internal inflammation and erythrocyte adhesiveness/aggregation in the peripheral blood

I. Shapira[1–2], O. Rogowski[1–2], D. Zeltser[1–2], S. Berliner[1–2]. *[1]Tel Aviv Sourasky Medical center [2]Sackler Faculty of Medicine, tel Aviv University*

Aims: To analyze the presence of internal inflammation in individuals with atherothrombotic risk factors by using the ERYTHROSENSETM biomarker. **Methods:** This is a cross-sectional study in a group of healthy subjects and those with risk factors for atherothrombosis. Patients who are in routine follow up in various clinics for diabetes, hypertension and metabolic disorders as well as apparently healthy medical personnel. Eight hundred sixty two individuals with various atherothrombotic risk factors and 97 healthy personnel of the medical center with no atherothrombotic risk factors (controls). Each individual filled a detailed questionnaire regarding the atherothrombotic risk factors and venous blood was obtained following an overnight fast. **Results:** The degree of erythrocyte adhesiveness/aggregation was measured by using a simple slide test and image analysis. Additional markers of the acute phase response included the Westergren erythrocyte sedimentation rate and fibrinogen concentrations as well as the concentration of high sensitivity C-reactive protein, white blood cell count and percent of polymorphonuclear leukocytes. A significant correlation was noted between the degree of erythrocyte adhesiveness/aggregation in the peripheral blood and the number of the individual's atherothrombotic risk factors. This correlation, separately performed for women and men was similar to what was obtained for the other markers of the acute phase response. In addition, we could clearly show that by using the degree of erythrocyte adhesiveness/aggregation in the peripheral blood, we can effectively discriminate between individuals having a low, intermediate or high risk profile. **Conclusions:** The presence of multiple atherothrombotic risk factors is associated with a heightened degree of erythrocyte adhesiveness/aggregation in the peripheral blood. This finding might have hemorheological implications in terms of microcirculatory slow flow and lower degree of tissue oxygenation. In addition this biomarker might be useful in a process of detection of low grade internal inflammation in individuals with and without atherothrombotic risk factors.

P8

Low grade inflammation in individuals with the hypertriglyceridemic waist phenotype. Another feature of this atherogenic dysmetabolism

I. Shapira[1–2], O. Rogowski[1–2], S. Toker[3], S. Melamed[2–4], A. Shirom[3], S. Berliner[1–2]. *[1]Tel Aviv Sourasky Medical Center, Tel Aviv, Israel [2]Sackler Faculty Medicine, Tel-Aviv University, Tel-Aviv, Israel [3]Faculty of Management, Tel Aviv University, Tel-Aviv University, Tel-Aviv, Israel [4], National Institute of Occupational & Environmental Health, Raanana, Israel*

Aims: We explored the possibility that the recently described "hypertriglyceridemic waist" (HTGW) phenotype, a risk for future coronary artery disease (CAD), is associated with the presence of low grade inflammation. **Methods:** A cross sectional study in a cohort of apparently healthy non-diabetic employed individuals in whom the presence of low grade inflammation was determined by using the high sensitivity C-reactive protein (hs-CRP) assay. **Results:** We have presently analyzed the results obtained in 7,186 apparently healthy individuals, at a mean$\pm$SD age of 44$\pm$11 years. We identified 406 individuals (90.6% men) with the HTGW phenotype according to the cut-off points of waist girth of $\geq$90 cm for men and $\geq$85 cm for women and triglycerides levels of $\geq$177 mg/dl. In addition, we identified 473 individuals (64.3% men) with the metabolic syndrome (MetS) according to the updated ATP III criteria. The mean$\pm$SD of hs-CRP was 1.3$\pm$2.9 mg/l for the 5,879 individuals who had neither the HTGW phenotype nor the MetS, 2.0$\pm$2.5 mg/l for those who had the HTGW phenotype and no MetS, 2.7$\pm$2.6 for 473 individuals with the MetS and no HTGW phenotype while those who had both atherogenic disorders presented a hs CRP concentration of 2.8$\pm$2.3 mg/l. **Conclusion:** In this cohort of apparently healthy non-diabetic employed individuals, the HTGW phenotype had a similar prevalence as the MetS and was associated with the presence of low grade inflammation. The inflammatory machinery could be a pathophysiologic link between this dysmetabolism and atherothrombosis. In addition, it looks as if the HTGW phenotype is relatively prevalent and could be a simple and inexpensive way to single out individuals at risk for future CAD.

P9

Liver enzymes and inflammation - sensitive biomarkers. Relevance for apparently healthy individuals and those with atherothrombotic risk

I. Shapira[1–2], O. Rogowski[1–2], R. Oren[1–2], S. Berliner[1–2]. *[1]Tel Aviv Sourasky Medical Center, Tel Aviv, Israel [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*

Aims: Atherothrombosis, a leading cause for morbidity and mortality in the Western world is associated with low grade inflammation. Recent studies have pointed to the association of cholestatic liver enzymes with the presence of low grade inflammation and thus to atherothrombosis. We have presently explored the possibility that the above mentioned associations be an early event, before clinically overt atherothrombosis. **Methods:** Included were 3,422 men and 1,622 apparently healthy women who attended a routine health screening program and in whom there was no evidence for diabetes mellitus, history of an atherothrombotic event or intake of hepatotoxic medications. **Results:** A significant age and body mass index (BMI) adjusted Pearson partial correlation was noted between most of the different liver enzymes including alkaline phosphates (ALP), gamma glutamyl transferase (GGT), alanine aminotransferase (ALT) and aspartate aminotransferase (AST) and the four inflammation-sensitive biomarkers that have proven relevance for atherothrombosis and include the white blood cell count (WBCC), high sensitivity C-reactive protein (hs-CRP) quantitative fibrinogen and the Westergreen's erythrocyte sedimentation rate (ESR). The best correlations were noted between ALP and the respective above mentioned inflammation-sensitive biomarkers being $r=0.166$ $p<0.001$, $r=0.198$ $r<0.001$, $r=0.224$ $p<0.001$ and $r=0.088$ $p<0.0001$ in men and $r=0.06$ $p=0.018$, $r=0.247$ $p<001$, $r=0.255$ $p<0.001$ and $r=0.156$ $p<0.001$ in women. The correlations for GGT were similar although somewhat lower. **Conclusions:** We conclude that an association between several enzymes that are used in daily practice as markers of liver damage and low grade inflammation exists in a group of apparently healthy individuals. The finding of these associations in the range that is currently considered "normal" is new and paves the way for the potential detection of lever disorders and eventual atherothrombosis at a relatively early stage.

P10

Effects of Efferent Sympathetic Nerve Stimulation on Ischemia-Induced Ventricular Arrhythmias by Modulating Connexin43 Protein in Rats

XR Hu[1], H Jiang[1], ZB Lu[1–2], HZ Wen[1], M Ghias[2], DD Zhao[1], QZ Tang[1], CX Huang[1]. *[1]Department of Cardiology, Renmin Hospital of Wuhan University,China [2]University of Oklahoma Health sciences center, OKC, OK, USA*

Objective To investigate the effects of efferent sympathetic nerve stimulation (SNS) on ventricular arrhythmias during acute myocardial ischemia (MI) in rats. **Methods** Ninety five rats were randomly assigned into four groups: myocardial ischemia with sympathetic nerve stimulation (MI-SNS, n=25), sham-operation treated with sham stimulation (SO, n=20), myocardial ischemia with sham stimulation (MI, n=25), myocardial ischemia with sympathetic nerve stimulation and phentolamine (0.25mg/kg) (MI-SNS-Phen, n=15), myocardial ischemia with sympathetic nerve stimulation and (MI-SNS-Prop, n=15). Ventricular arrhythmias were monitored by an electrocardiogram. Western blotting and immunofluorescence were used for analyzing Connexin43 (Cx43) protein expression and the changes of Cx43 protein distribution, respectively. **Results** There were 1, 3 and 2 rats deathing due to ventricular fibrillation in the MI, MI-SNS and MI-SNS-Phen groups, respectively. During the 30-minute LAD ligation, the incidence of ventricular tachycardia/fibrillation (VT/VF) in the MI-SNS group (80.0%, 20/25) was significantly higher than that in the MI group (52.0%, 13/25, $p<0.05$); however, VT/VF was significantly suppressed in the MI-SNS-Prop group (16%, 2/12, $p<0.05$). After the 30 minutes ligation, Cx43 protein was significantly decreased in the MI-SNS (0.73 ± 0.12, $p<0.05$) and MI-SNS-Phen groups (0.74 ± 0.09, $p<0.05$) but not in the MI (1.29 ± 0.14, $p>0.05$) and MI-SNS-Prop group (1.21 ± 0.11, $p>0.05$) compared with the SO group (1.30 ± 0.10). The percentage of the phosphorylated Cx43 protein in the MI groups ($46.7\pm6.3\%$) was significantly decreased than that in the SO group ($87.5\pm7.8\%$, $p<0.05$). However, the dephosphorylation of Cx43 protein was prevented in the MI-SNS, MI-SNS-Phen and MI-SNS-Prop groups ($73.4\pm6.7\%$, $71.4\pm4.1\%$ and $72.6\pm6.5\%$, respectively, all $p<0.05$). Immunofluorescence confirmed that the Cx43 signal was mainly located at end-to-end apposition between neighboring cells in the SO group. In contrast, neighboring cells in the MI group were connected in a predominantly side-to-side orientation. In the MI-SNS group, the distribution of Cx43 signal deranged as neither end-to-end apposition nor side-to-side orientation could be distinguished between neighboring cells. **Conclusion** The present study demonstrates that the pro-arrhythmic effect of efferent SNS may be exerted by activating β-adenrenoceptor to promote the degradation of Cx43 protein during acute MI.

P11

Communication Devices Produce Electromagnetic Interference on ECG machines: Does it really matter?

A. Baranchuk[1], J Kang[1], C Shaw[1], D Campbell[1], H Alanazi[1], W Hopman[1], DP Redfearn[1], CS Simpson[1]. *[1]Queen's University*

Background: Use of communication devices in the hospital environment remains controversial. Electromagnetic interference (EMI) can affect different medical devices. Potential sources for EMI on ECG machines were systematically tested. **Aims:** To determine the presence of EMI on ECG machines produced by different communication devices. To evaluate the clinical impact of EMI on ECG interpretation. **Methods:** The communication devices tested were: A Global System for Mobile communication (GSM) receiver, a Code Division Multiple Access (CDMA), an analog phone, a wireless local area network and an alpha-numeric pager. EMI was tested on three ECG machines: MAC 5000, MAC 1200 and ELI 100. An isolated room without metallic objects and no operating electrical devices was used as the test site. The devices were tested at 2 and 1 meter, 50, 25 and 0 cm from the ECG acquisition module. ECGs were obtained when communication devices were active and inactive to determine EMI. Two blinded investigators analyzed the ECGs for EMI. The ECGs were presented to a heterogeneous group of clinical providers (med students, residents, nurses, industry representatives and attendings) to evaluate the impact of EMI on ECG interpretation skills. **Results:** EMI was detected on the MAC 5000 ECG machine when activated GSM, CDMA and analog phones where placed on top of the acquisition module receiving an external call (see Figure). No EMI was seen on the other ECG machines or when the phones were at a longer distance or deactivated. EMI was incorrectly diagnosed in 41.8% of the cases. EMI was confused most frequently with atrial fibrillation or flutter (16%) and pacemaker dysfunction (12%). Medical students ($P<0.001$) and non-cardiology residents ($p=0.05$) demonstrated significantly worse performance on EMI interpretation. **Conclusions:** Digital and analog phones produce EMI on modern ECG machines when activated in close proximity to the acquisition module. EMI on ECG has been found to deteriorate the ability of proper ECG interpretation. This may potentially lead to serious inappropriate medical decisions.

P12

Prognosis of heart rate control on decompensated heart failure patients.

G.P. Aroutunov, Professor[1], **A.G. Aroutunov[1]**, A.L. Volkova[1], N.A. Bylova[1].

Idea: The positive effect of beta blockers usage at patients with congestive heart failure (CHF) is mostly reached because of decreasing of heart rate (HR). But unstable of decompensated patient, and needing of long drug titration do not let to control heart rate with beta blockers in acute period of decompensation. **Aim:** Aim of this study is to investigate the mean of difference heart rate control ways on prognosis of patients with decompensated CHF **Ethic control:** Informed consent text and protocol text was approved by ethic committee of Russian State medical University. **Materials and Methods:** 36 critically ill patients with decompensated CHF and sinus rhythm on ECG was enrolled in study. All patients received standard therapy which includes i/v loop diuretics, i/v nitrates, ACE inhibitors and digoxin. From the moment of hospitalization patients was randomized in three groups. The first (n=12) received ivabradin after randomization (start dosage 5mg BID with increasing to 7.5 mg from the second day) the second group (n=12) recieved ivabradin after randomization (start dosage 5mg BID with increasing to 7.5 mg from the second day) and beta blockers (metoprolol ZOK) from the moment of stabilization (on 6,9 ± 2,2 days). In the third group (n=12) patients received standard therapy and beta blocker (metoprolol ZOK) from the moment of stabilization (on 7,1 ± 1,9 days). Dosage of beta blockers was standard way titrated. All patients had Svan-Gans catheter placed. During 72 hours pulmonary capillary wedge pressure (PCWP), cardiac output (CO), cardiac index (CI), HR, arterial blood pressure (ABP), breath rate, body weight were measured. Patients were observed during 28 days. There was combined end point which includes death, AMI, unstable angina, any other coronary events. **Results:** During decompensation period there were 5 deaths, 2 in second and third group and 1 in the first one. Decreasing of HR at patients on 72 hours, 7 days and 14 days was: at first group 20,4±4,5%, 21,3±5,1%, 22,3±6,6%, at second group 19,9±4,2%, 21,1±4,6%, 24,1±6,0% and in third group 2,1±2,2%, 5,7±2,3%, 9,3±3,1%. Such way ivabradin therapy leads to authentic higher (p=0,043) HR decreasing on 3, 7, 14 days. PCWP decreasing on 72 hours was 17,7±2,7%, 14,2±3,1% ? 12,1±3,7% in groups. Patients weight decreasing in groups on 3, 7,14 days was 1,6±0,7kg, 3,9±1,1kg, 5,1±2,1kg, 1,5±1,0kg, 3,8±1,4kg, 5,5±1,5kg and 1,5±0,5kg, 2,3±1,3kg, 3,1±1,7kg. Authentic difference of body weight decreasing was on 7th day. **Conclusion:** Using of ivabradin in decompensated CHF patients leads to authentic faster HR and body weight decreasing and better patient prognosis. Tendency of faster PCWP decreasing and hemodynamic stabilization was pointed in ivabradin receiving group.

P15

Determination of Vascular Wall Shear Stress by High-Resolution Ultrasound as a Method of Assessment of Endothelium-Dependent Vasodilatation in Patients with Arterial Hypertension

A. Rekhviashvili[1], B. Tsinamdzgvrishvili, A. Tsiskaridze, M. Chkhetia, N. Archvadze, G. Labakhua. *[1]M. Tsinamdzgvrishvili Institute of Cardiology [2]M. Tsinamdzgvrishvili Institute of Cardiology [3]Sarajishvili Institute of Neurology and Neurosurgery [4]Tatishvili Center of Ultrasonography [5]Tbilisi State University [6]National Center of Surgery*

Objective: Aim of the study was to determine vascular wall shear stress for assessment of endothelium-dependent vasodilatation in patients with arterial hypertension (AH). **Methods:** Eighteen (mean age 50.2±8.73 years, range 35 to 60 years; 7 men and 11 women) outpatients with AH were included in the study. All subjects underwent off-therapy vascular Dopplerechography (7MHz) and investigation of blood viscosity, which were performed to analyze flow-mediated vasodilatation (FMD) at the brachial artery and to determine vascular wall shear stress (τ). Shear stress was calculated by the Haagen-Poisseuille equation: $\tau = 8 \cdot \eta \cdot U/D$; where τ is shear stress, η is the blood viscosity; U – the fluid velocity; D – the vessel diameter. FMD was calculated by the equation: $FMD = D_1\text{-}D_0/D_0 \cdot 100\%$; where D_0 - is initial vascular diameter, D_1 -vascular diameter after reactive hyperemia test (RHtest). Hypercholesterolemic subjects, diabetics, smokers, patients with manifested heart failure, coronary heart disease and Raynaud's phenomenon were excluded from the study. **Results:** FMD of patients with endothelial dysfunction (ED) was 1.31±3.6%, whereas FMD in patients with normal endothelial function (EF) was 12.1±3.79 (P<0.000014). There was not observed statistically significant difference of D_0 and D_1 between patients with ED and normal EF (0.42±0.04cm vs. 0.40±0.058cm; P<0.59 for D_0 and 0.425±0.042cm vs. 0.456±0.053cm; P<0.192 for D_1). Compared with patients with ED, subjects with normal EF showed statistically significant low index of blood viscosity (0.064±0.01 vs. 0.051±0.0035; P<0.004). There was not statistically significant difference of initial shear stress (τ_0) and shear stress after RHtest (τ_1) between patients with ED and normal EF (90.2±26.9 vs. 78.4±14.4; P<0.28 and 97.7±25.09 vs. 77.9±14.6; P<0.065). Meaning of $\Delta\tau$ (τ_1-τ_0) was different in patients with and without ED (-7.52±6.33 vs. 0.53±2.23; P<0.0035). The same fact was observed while measurement of ΔD (D_1-D_0) (0.05±0.15 vs. 0.48±0.099; P<0.00005). FMD showed a significant correlation with ΔD (r = 0.98) and $\Delta\tau$ (r = 0.68). $\Delta\tau$ showed a significant (P<0.05) correlation with ΔD (r = 0.71) and inverse correlation with blood viscosity (r = -0.51). **Conclusion:** The present data show the presence of increased blood viscosity level in patients with ED. In spite of no difference of initial and after RHtest vessel diameter and shear stress between patients with ED and with normal EF, these results demonstrate, that the main factor, which can be used for assessment of endothelium dependent vasodilatation in patients with AH is changes of vascular shear stress ($\Delta\tau$) while RHtest.

P16

Measurements in imaging: Are internal or external reference systems better in detecting eary stage heart failure?

R. Asbot[1].

Purpose: The optimal function of the heart includes complicated, three-dimensional movements in the thorax. Our commonly used tomographic and direction-dependent methods are measuring points related to a mixture of intracardiac and extracardiac references. By the data of internal reference (cavity size, wall thickness, strain) and by measurements which are referring to external reference points, it is possible to characterise the spatial movement of the heart in health and disease and to define the role of the reference systems in detecting the early signs of heart failure. **Methods:** Non-ischemic, non-valvular NYHA II. heart failure patients (n=12) with appropriate acoustic window were included in the study. The control group consisted of 15 healthy subjects. M-mode, 2-D and TDI data were compared. Reproducibility of the measurements (M-mode and 2D) related to external reference points was tested by defining intra- and interobserver variability. The time intervals of the mitral anulus movement and mitral inflow were also studied, defining the values of early and late diastolic time discrepancies (EDTD and LTDT) respectively. **Results:** Defining reference points e.g. along the atrio-ventricular border and at the apex, qualitative and quantitative data could be obtained in the parasternal long axis view characterising the long-axis displacement of the atrioventricular plane as well as the elevation of the left ventricular long axis itself. In the short axis the well known LV rotation could be observed. In heart failure qualitative and quantitative changes in the position and movement of these externally-related points, i.e. mostly a decrease in the displacement and elevation was found (var.coeff. M-mode <10%, 2-D <15%), even in patients with preserved LV systolic function (p=0,03…0,05). In heart failure LTDT and at later stages, EDTD correlated with clinical progression, reflecting increasing preload dependency. **Conclusion:** Measurements using external reference systems may detect the earliest stages of heart failure, adding new insight into the pathophysiology of heart failure with preserved ejection fraction.

P17

QUANTITATIVE ELECTROCARDIAC PARAMETERS CAN PREDICT IMPAIRED SYSTOLIC HEART FUNCTION

G. Simonyi[1], E. Szûcs[2], T. Bauernfeind[3], K. Szakolczai[4], JR. Bedros[1], I. Préda[3], M. Medvegy[5]. *[1]Flor Ferenc Hospital, Kistarcsa, Hungary [2]Department of Cardiology, Central Military Hospital [3]Dept. of Cardiology, National Health Service Center [4]Research Institute for Technical Physics and Materials Science, Hungarian Academy of Sciences [5]Central Hospital*

The judge of the mechanical dysfunction of the heart from electrocardiac parameters is challenging. After Q-type myocardial infarction the decrease of the systolic function could be prognosticated from the ECG but in other ischemic heart disease (IHD) the ECG does not give information about the systolic function. Parameters derived from body surface isopotential maps (ratio /Max/Min/ and time-difference /Timeshift/ of the highest maximum and deepest minimum potential during the depolarization) show significant relationship with the location and extension of the infarctions, first at all in their anterior localization. Therefore we supposed that these parameters may indicate the anterior electrical potential loss and consecutive impaired systolic function also in other IHD cases. **Methods:** 187 cases (141 men, 31–81 years, average: 63) with IHD but without pathologic Q-wave were investigated by BSPM (63 lead Montreal system), coronary angiography and transthoracic ultrasound echocardiography. Thirty-six healthy subjects (17 men, 22–74 years, average: 48) served as control. Anterior potential loss was evaluated in cases where Max/Min<0.8 and/or Timeshift<-4ms. **Results:** In cases where the BSPM criteria of anterior potential loss were fulfilled (54 cases) left anterior descending (or left main) coronary artery lesion was observed in 96 %, anterior hypokinesis in 48 % and the averaged EF was 42.2±7.2%, The EF was 58.6±7.4% in the other 133 IHD cases and 62.2±6.4% in the normal group (significant difference from the cases with anterior potential loss, two samples Student t-probe, p<0,0001). In prognosis of EF≤48%, the diagnostic value of these BSPM parameters: sensitivity: 73.4%, specificity: 94.1%, positive predictive value: 81.3%, and negative predictive value: 91.4%, respectively. **Conclusion:** The Max/Min and Timeshift BSPM parameters which indicate anterior electrical potential loss indicate also impaired systolic function that is an electrocardiological investigation can give information about the mechanical function of the heart.

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Endovascular therapy of chronic mesenteric ischaemia

A. Silva[1], R. Barros Wanderley[1], L. Carvalho Pereira[1], I. Kury Nunes[1], R. Luis Favero[2], L. Henrique Kanashiro[1]. *[1]CardioVascular Diagnosticos - Santa Casa de Campo Grande [2]CardioVascular Diagnosticos - Dourados*

Background- Atherosclerotic disease resulting in progressive stenosis or occlusion of one or more mesenteric arteries is considered the most commom cause for chronic bowel ischaemia(CMI).This condition is associated with gastrointestinal symptoms such as diarrhea, postprandial abdominal pain and significant weight loss. Historically, the treatment for CMI has been surgical revascularization, however, surgery carries a significant procedural complication rate and mortality. **Objective-** To evaluate the safety and assess role of endovascular therapy in patients(pts) with mesenteric vascular occlusive disease. Patients and Methods - Between sept/2002 and jan/2006, we treated 32 pts (45% male; mean age 60+-12 years). Thirty patients had atheromatous stenoses and two pts had Takayashu arteritis. 12.5% of the lesions were chronic occlusions. It was evaluated perioperative morbidity and mortality, reestenosis and recurrent symptoms. **Results-** The technical success rate was achieved in 31 pts (96.8%). The brachial acess was used in 83.3% and the femoral approach in 16.6% of patients.. During a follow-up of 1–83 months (mean-29 months), just one patient had recurrent pain due to reestenosis of stent, that was treated with new endovascular intervention.. **Conclusions-** Percutaneos endovascular techniques for CMI are safe and accurate. The inherent lower procedural morbidity and mortality makes the endovascular approach the preferred revascularization treatment for these patientes with chronic mesenteric ischaemia.

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Clinical Feasibility and angiographic follow-up of Endovascular Stent-Graft for Type B Dissection (Stantford). Experience of a single center.

A. Silva[1], R. Barros Wanderley[1], L. Carvalho Pereira[1], L. Henrique Kanashiro[1], R. Luis Favero[2], I. Abilio Kury Nunes[1]. [1]*CARDIOVASCULAR DIAGNOSTICOS- SANTA CASA DE CAMPO GRANDE* [2]*CARDIOVASCULAR DIAGNOSTICOS-DOURADOS*

Background: Surgery of the aorta is technically demanding and may be followed by perioperative mortality and morbidity. Endovascular repair wih stent-graft placement (EVAR) for type B dissection has show encouraging clinical results. **Objective:** To show by our experince, the outcomes of patients(pts) who underwent EVAR. **Methods:** A retrospective review at our institution between 2003 until december of 2006, identified 85 patients with type B dissection . Patients characteristics for this group include : mean age (62+-12 anos), male in 55.55%, Diabetes in 23%, Hypertension in 90%, multi-vessel disease in 56%, renal dysfunction in 14% and Chronic Lung Disease in 20% of the pts. All patients underwent computed tomograghy before the procedure, after EVAR and at follow-up (30 days, six and twelve months.) 81 pts (95.2%) were treated by conventional stent-grafts. The procedure was done with spinal anaesthesia and intravenous sedation without mechanical ventilation. **Results-** Angiographic success, defined as immediate obliteration of target lesion without major endoleak was obtained in 98.7%. We have one case of death (laceration of iliac artery). Among complications with have two subclavian artery oclussion (assintomatic). The angiographic follow-up was realized in 91%, and we have one patient with endoleak, corrected with endovascular stent-graft repair. **Conclusions-** Endovascular stent-graft should be considered as a safe and effective treatment for Type B dissection particularly in pts with high risk of surgical mortality.

P20

Prevalence of Changes in Undiagnosed Glucose Intolerance According to Age and Gender in Japanese Middle Aged Working People

H. Kawano[1], H Soejima[1], H Fujii[1], Y Nagayoshi[1], Y Tanaka[1], S Nakayama[1], Y Kinoshita[1], H Ogawa[1].

Undiagnosed diabetes and impaired fasting glucose, a condition that increases the risk of diabetes, have important health consequences. Approximately one-third of diabetes remains undiagnosed and therefore estimates of diabetes prevalence based on self-reporting or doctor diagnosed disease underestimate total prevalence, which includes individuals with both known and undiagnosed type 2 diabetes. The clinical features of type 2 diabetes can be quite insidious. For example, symptoms such as fatigue, weakness and dizziness may be mild and can be tolerated for many years before a patient seeks medical attention. If the degree of hyperglycemia is insufficient to produce symptoms, the diagnosis may be made only after the development of vascular or neuropathic complications. Type 2 diabetes occurs most commonly in adults over the age of 40 years. To examine the prevalence of undiagnosed glucose intolerance, we carried out 75g oral glucose tolerance tests in 1142 consecutively enrolled middle-aged subjects (age range 40–55 yr; 914 men, mean 50.7 yr; 228 women, mean 49.4 yr) who worked in a company and underwent a health check in 2006. No subject had a history of atherosclerotic disease or had been diagnosed with either impaired fasting glucose, impaired glucose tolerance or diabetes. Fasting glucose levels increased with age in both men and women, with the levels being higher in men than women at every age. Glucose intolerance was more common in men compared with women (Fasting glucose 100.1±19.7 vs 92.9±9.6, $p<0.01$; 1-hour 170.7±52.1 vs 139.7±11.6, $p<0.01$; 2-hour 136.0±50.1 vs 119.8±31.5mg/dl, $p<0.01$). The prevalence of IGT and DM was also higher in men than in women (IGT: 24.1 vs. 16.7, $p<0.01$; DM 10.7 vs 1.4%, $p<0.01$). Blood pressure and triglyceride levels were higher in men than in women (124.0±18.5/76.9±11.6 vs. 114.8±19.4/70.6±12.5mmHg, $p<0.01$; 148.1±109.4 vs. 88.2±44.0mg/dl, $p<0.01$), while HDL cholesterol levels were lower in men (58.8±16.0 vs. 72.6±17.4mg/dl, $p<0.01$). Knowledge of type 2 diabetes, especially undiagnosed diabetes, may enhance peoples' awareness, thereby leading to lifestyle modification. Thus, when screening for abnormal glucose tolerance, even in people of working age, it is important to measure postprandial glucose concentrations after a glucose challenge. In summary, coronary heart disease was more common in men than in women, with the incidence of this disease becoming similar in men and women who were aged approximately 10 years older. Glucose intolerance was often associated with other risk factors such as hypertension and dyslipidemia. These features of undiagnosed glucose intolerance in working age people may contribute to the gender difference in the incidence of coronary artery disease in Japan.

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Dehydroepiandrosterone Levels Vary According as Heart Failure Condition in Patients with Idiopathic Dilated Cardiomyopathy

H. Kawano[1], Y Nagayoshi[1], H Soejima[1], Y Tanaka[1], H Yamabe[1], Y Kinoshita[1], H Ogawa[1]. [1]*Kumamoto Univ.*

Dehydroepiandrosterone sulfate (DHEAS) is the major secretory steroid of the human adrenal glands. The secretion of DHEAS decreases with age. The incidence of heart failure also rises in the elderly population. The aim of the study is to assess the relationship between DHEAS and heart failure severity. We measured plasma levels of DHEAS and cortisol in 50 male patients (mean 66.7±9.1 years old) with congestive heart failure due to idiopathic dilated cardiomyopathy before and after treatment. Plasma levels of DHEAS were significantly lower in patients with congestive heart failure than in controls (82.2±9.9 vs. 122.7±18.6 μg/dL, respectively, $p<0.01$), whereas there was no significant difference in plasma levels of cortisol between the 2 groups. DHEAS levels were significantly ($p<0.05$) lower in patients in NYHA class III–IV (50.2±9.1 μg/dL) than in patients in NYHA class I (90.2±14.1 μg/dL) and controls (122.7±18.6 μg/dL). All patients enrolled received conventional therapy for their heart failure at an outpatient clinic, and were followed prospectively every month. After 3 months of treatment, NYHA functional class improved in all patients. DHEAS levels increased (from 82.2±9.9 to 106.2±21.1 μg/dL, $p<0.01$) as NYHA class decreased. However, cortisol levels did not change with treatment. These findings indicate that the plasma levels of DHEAS are decreased in patients with congestive heart failure in proportion to its severity. In addition, DHEAS levels increase after heart failure treatment. Thus, DHEAS levels vary according as heart failure condition in patients with idiopathic dilated cardiomyopathy.

P22

Intermediate Outcome of Percutaneous Coronary Interventions for Single Remaining Coronary Artery

S. Mishra[1], VK Bahl. [1]*AIIMS* [2]*AIIMS*

Background: Angioplasty for sole surviving coronary artery constitute the highest risk among patients (pts.) undergoing percutaneous coronary interventions (PCI). We wished to evaluate a strategy of PCI of sole surviving coronary artery versus PCI of an occluded artery (but leaving alone non-occluded, sole surviving artery). **Material and Methods:** Clinical outcome of 107 consecutive pts. with single remaining coronary artey undergoing PCI at our center was evaluated. Single remaining artery was defined as pts. having only 1 remaining non-occluded but diseased coronary artery, all other arteries and grafts being blocked. PCI was performed either of this Single remaining artery (SR-PCI, n=38), or of an occluded artery (O-PCI group, n=69), leaving alone sole surviving artery. Pts. presenting with cardiogenic shock and left main disease were excluded. **Results:** Baseline characteristics were comparable except for higher prevalence of heart failure (50% vs. 19%, $P<0.01$) & balloon pump (IABP) usage (95% vs. 68%, $P<0.02$) but lesser primary PCI (21% vs. 68%, $P<0.01$) in SR- PCI group. Angiographic success was similar in both groups. Clinical outcome is shown in the table. **Conclusions:** PCI of diseased single remaining vessel results in initial favorable clinical outcome (perhaps due to widespread use of IABP), but ultimately, despite initial stabilization, outcome at 6 months remains dismally poor. A strategy of leaving alone sole surviving coronary artery and going for an occluded one seems to produce a superior outcome.

CLINICAL OUTCOME OF PCI OF SINGLE REMAINING CORONARY ARTERY

Events	Sole Surviving PCI (n=38)	Non Sole Surviving PCI (n=69)	P value
In-hospital MACE %	4 (10)	3 (4)	0.18
TVR-MACE % at 30-days	11(29)	6(9)	0.05
Death % at 30-days	11(29)	5 (7)	0.03
TVR-MACE % at 6-months	19 (50)	9 (13)	<0.01
TLR-MACE % at 6-months	19 (50)	9 (13)	<0.01

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Frequency of diarrhoea as a predictor of elevated blood pressure in children

J. J. Miranda[1–2], A. R. Davies[1], G. Davey Smith[3], L. Smeeth[1], L. Cabrera[4], R. H. Gilman[5], H. H. Garcia[2,6], Y. R. Ortega[7], V. A. Cama[8]. [1]*London School of Hygiene and Tropical Medicine, London, UK* [2]*Universidad Peruana Cayetano Heredia, Lima, Peru* [3]*University of Bristol, Bristol, UK* [4]*Asociación Benéfica Proyectos en Informática, Salud, Medicina y Agricultura (PRISMA), Lima, Peru* [5]*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA* [6]*Instituto Nacional de Ciencias Neurológicas, Lima, Peru* [7]*University of Georgia, Griffin, GA, USA* [8]*Centers for Disease Control and Prevention, Atlanta, GA, USA*

Background: Diarrhoeal illness is a major public health problem for children worldwide, particularly among developing countries, and is a proxy condition for severe dehydration. It has been hypothesized that severe dehydration in the first six months of life could be associated with increased blood ressure later in life. This study aimed to explore whether or not frequency of diarrhoea is associated with elevated blood pressure in children. **Methods:** Cross sectional study of blood pressure among children from a longitudinal child diarrhoeal disease cohort in Lima, Peru. From 2001 and 2006, daily diarrhoeal surveillance was made. Children were re-visited in 2006 and blood pressure was measured. Diarrhoeal exposures were evaluated in terms of total number of diarrhoea days, number of episodes of diarrhoea, persistent diarrhoeal episodes, and by the quartiles of daily incidence and episode incidence of diarrhoea. **Findings:** 422 children (48.3% male) contributed a total of 1222.3 child-years of follow-up (mean 2.9, range 0.5 to 4.5 child-years). A total of 5,212 diarrhoea days equating to 2,624 diarrhoeal episodes were recorded. The overall incidence of diarrhoea episodes at age under 1 year was 4.35 (95% CI 3.79, 4.98) and under 5 years was 2.80 (95% CI 2.69, 2.92). No association was observed between the total number of diarrhoeal days, diarrhoeal episodes, or diarrhoeal incidence rates with childhood blood pressure. There was weak evidence that hospital admission due to severe dehydration in the first year of life showed a gradient towards an increase in both, systolic and diastolic blood pressure. Nine of the 422 children were hospitalised for dehydration in their first year of life. Univariate regression analysis provided weak evidence of 1.4 mmHg higher diastolic blood pressure (95% CI -4.5, 7.4) and 5.5 mmHg higher systolic blood pressure (95% CI -1.4, 12.3) in this group. After adjusting for possible confounders these effects were attenuated. **Interpretation:** Diarrhoea frequency did not show an association with increased blood pressure. Our observations of elevated levels of blood pressure amongst those admitted into hospitals in the first year of life are in line with the original hypothesis of dehydration in early infancy and high blood pressure. However, the role of episodes of severe dehydration on later blood pressure remains uncertain.

P24

Is being an immigrant a risk factor for CVD in Australia?

J. Dassanayake[1], L Gurrin, W R Payne, V Sundararajan, S C Dharmage. *[1]School of Population Health, University of Melbourne, Australia. [2]School of Population Health, University of Melbourne, Australia. [3]Schools of Human Movement and Sport Sciences, University of Ballarat, Australia. [4]Victorian Department of Human Services, Melbourne, Australia. [5]School of Population Health, University of Melbourne, Australia.*

Objective: To investigate whether being an immigrant is increase risk for AMI and stroke. **Design and setting:** A retrospective analysis of Victorian hospital admissions in 1996/97 and 2001/02 was conducted. **Participants:** AMI and stroke were defined using primary cases of admission of ICD-9-CM:'P410',ICD-10-AM:'121','122'and stroke ICD-9-CM'P433','P436',ICD-10-AM '163','164'diagnostic codes. **Main outcome measured:** Rate ratio (RR) of AMI and stroke were calculated using 1996 and 2001 Australian census data. **Results:** Male immigrants from three ethnic groups: USSR/Baltic (RR=3.91 95%CI 3.22,4.71), Southern Asia (RR=1.56 95%CI 1.31,1.85) and Middle East (RR=1.34 95%CI 1.10,1.63), consistently displayed higher risk for AMI (both years) than the Australian born cohort; while Southeast Asians (RR=0.51 95%CI 0.42,0.62) and Northeast Asians (RR=0.35 95%CI 0.24,0.50) were at lower risk. The findings for females were less consistent. North East Asian male and female immigrants (RR=0.57 95% CI 0.41, 0.76, RR=0.56 95%CI 0.41, 0.74), were consistently at lower risk for stroke than Australian born counterparts. Female immigrants from the Pacific Islands were consistently at higher risk (RR=1.52 95%CI 1.25, 1.84, RR=1.22 95%CI 0.98, 1.51) of stroke than Australian born women. **Conclusion:** A number of Non-Australian born adult males currently residing in Victoria are identified at increased risk of AMI, whereas few groups are at decreased risk, compared to Australian born males. North East Asian males and females were consistently at a lower risk for AMI and stroke than their Australian-born counterparts. However, Asia male and female immigrants are generally at a lower risk of stroke.

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PERCUTANEOUS FEMORAL CLOSURE FOLLOWING THORACIC AORTA STENT GRAFT PLACEMENT: PRELIMINARY RESULTS AND 6 MONTH FOLLOW UP

P. Avanzas[1], M. Martin[1], I. Lozano[1], JM Llaneza[1], F Vega[1], F Fernandez[1], JM De La Hera[1], JM Vegas[1], JM Valle[1], C Moris[1]. *[1]Hospital Universitario Central de Asturias*

Introduction: Thoracic aortic disease has traditionally been treated by surgery. During the last few years, endovascular stent grafting has emerged as an alternative treatment to this disease. One of the problems with these procedures is the large size of the implant systems, which require surgery for vascular access and closure. Surgical complications with exposure of the femoral artery are not uncommon and include hematoma, seroma, and infection. **Objective:** Describe our clinical experience and results using percutaneous femoral closure devices for femoral arterial closure after thoracic aorta stent graft placement (TASGP). **Methods:** Thirty consecutive patients were selected to use the Prostar XL® device for arterial closure (22–24 French sheaths) after TASGP, according to preestablished criteria (femoral size, tortuosity, calcium). After arterial puncture two Prostar XL® devices in each patient were placed at the puncture site. The first is inserted using the conventional technique guided by a standard 0.038- inch guidewire and is left in the femoral artery after implantation of the 2 sutures. The artery is recanalized with a guidewire and the device is withdrawn. The second device is then inserted, implanting the 2 sutures after rotating 45 degrees clockwise from the position of deployment of the first device. The access site is gradually dilated to 20–22 French. The aortic endoprostheses are subsequently implanted and upon completion of the procedure, hemostasis is performed by closing the sutures of the 2 devices with a knot pusher. All patients were anticoagulated during the procedure with 10 000 U of intravenous sodium heparin. All femoral sites were followed up (discharge - 6 month). If a femoral murmur was detected, an echo-Doppler was performed. **Results:** All femoral sites were correctly closed by the two Prostar XL® devices. In one case surgery was needed because of oclussion of the iliac artery, due to intima disruption, not related with the closure device. In the other cases, predischarge physical examination revealed absence of mayor hematomas. At 6 months follow up, two echo-Doppler were performed and one of them revealed the presence of a femoral pseudoaneurysm. **Conclusions:** Our data suggest that in TASGP, hemostasis of large puncture sites can be successfuly achieved with two Prostar XL® devices, when placed prior to arterial dilatation.

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PREDICTIVE VALUE OF CORONARY ARTERY STENOSES AND C-REACTIVE PROTEIN LEVELS IN PATIENTS WITH STABLE CORONARY ARTERY DISEASE

P. Avanzas[1], R. Arroyo-Espliguero[2], J. Quiles[3], JC. Kaski[4]. *[1]Hospital Universitario Central de Asturias [2]Hospital Universitario de Guadalajara [3]Hospital de San Juan [4]St George's Hospital, University of London*

Introduction: The number of critical coronary artery stenoses at angiography is a predictor for cardiac adverse events in patients with CAD. Serial angiographic studies have shown that in about 85% of patients, coronary occlusions resulting in acute events occur at the site of non severe stenoses. **Aim:** We sought to assess the prognostic value of non obstructive coronary stenoses and CRP levels in patients with chronic stable angina (CSA). **Methods:** We studied 790 consecutive patients with CSA who underwent routine coronary arteriography. CSA was diagnosed in the presence of typical exertional chest pain, relieved by rest and/or sublingual nitrates. All patients had a positive ECG exercise stress test response or reversible perfusion defects during myocardial perfusion scintigraphy. High sensitivity C-reactive protein (CRP) was measured in fasting venous blood that was collected at the time of diagnostic coronary angiography. Coronary angiograms were assessed and scored according to Sullivan et al (vessel score, extension score). Vessel score is based on the number of coronary arteries showing at least 50% reduction in lumen diameter. Extension score refers to the proportion of the coronary artery tree showing angiographically detectable atheroma. Patients were followed up for one year. **Results:** Significant left main stem disease was present in 54 patients (6.8%). 368 patients (46.6%) underwent surgical or percutaneous revascularization. Patients who suffered cardiac adverse events during follow up had a significantly higher vessel score (2.0[2.0–3.0] vs. 2.0[1.0–2.0], P<0.001), extension score (23.5 [17–34.5] vs. 16.0 [6.0–27.0], P<0.001) and CRP levels (mg/L) (3.0[1.8–7.2] vs. 2.3 [1.1–4.7], P=0.001) compared to patients without events. 71 patients (9%) had at least one of the events comprised in the combined study end-point during the one-year follow-up (38 patients had unstable angina, 12 patients had myocardial infarction and 21 patients died from cardiovascular causes). Univariate analysis showed that age, previous history of AMI, vessel score, extension score and CRP levels were significantly associated with the study end-point. We performed backward stepwise binary logistic regression analyses where we included variables which showed a correlation in univariate analysis that was significant at the 20% significance level, cardiovascular risk factors, treatment with aspirin, ACE inhibitors, 3- hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors, and whether the patient underwent scheduled coronary revascularization during follow up. Extension score (OR 5.3 [2.8 to 10.3] CI 95%; P<0.001), revascularization (OR 0.26 [0.14 to 0.48] CI 95%; P<0.001) and CRP levels (OR 1.9 [1.1 to 3.2] CI 95%; P=0.03), but not vessel score (p=0.1), remained the independent predictors of the combined end-point. **Conclusions:** In patients with CSA, independently of revascularization, extension score and CRP levels predict cardiac adverse events regardless of the presence or absence of flow limiting coronary lesions.

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A/a': A New Correlate of Left Ventricular End Diastolic Pressure?

RA Lawrance[1], I Jadavji[1], WT Emery[1], JB Choy[1]. *[1]University of Alberta Hospital. Edmonton, Alberta, Canada*

Background The mitral inflow A-wave and the a' wave of the tissue Doppler have both been correlated with grades of diastolic function and are clearly late diastolic measurements. To date, the early diastolic ratio of E/e' has been suggested as the closest echocardiographic correlate of Left Ventricular End-Diastolic Pressure (LVEDP) and shows a tight relationship with clinical events. We sought to examine the relationship of A, a' and A/a' with E/e'. **Materials and Methods** We retrospectively analyzed 1,229 consecutive echocardiograms (697 male, mean age 61 years ± 18; 532 female, mean age 61.1 years ± 18.8) that were performed in our high volume tertiary referral echocardiography laboratory over a period of 17 weeks (January 25th – June 1st 2007). Patients with severe mitral valve disease and atrial fibrillation were excluded. Correlations of several echocardiographic parameters of diastolic function with E/e' were investigated using: (a) univariate linear regression analysis and (b) areas under the Receiver Operating Characteristic Curve (AROC) with E/e'>15 as the binary endpoint. **Results** Mitral inflow A peak velocity was positively correlated ($r = 0.41$; AROC 0.65[0.58–0.72]; $p < 0.001$). However, septal and lateral a' were inversely associated with E/e' ($r = 0.32$; AROC 0.21[0.16–0.27] and $r = 0.19$; AROC 0.33[0.26–0.39]; $p < 0.001$ respectively). Univariate analysis of A/a' (Averaged a' between both septal and lateral annulus) showed a positive correlation with E/e' ($r = 0.62$; AROC 0.87[0.83–0.92]; $p < 0.001$). **Conclusions** The results suggest a strong correlation between A/a' and E/e'. Currently, there is a grey zone for the definition of high or normal LVEDP based on the E/e'ratio. Given that A/a' is strong associated with E/e', might these end-diastolic measures be equally or more predictive of end-diastolic pressure and narrow the range of uncertainty that is reflected in an E/e' ratio of 8–15?

P28

Univariable and Multivariable Correlates of E/e': can we get closer to non-invasive left ventricular end-diastolic pressure estimation?

RA Lawrance[1], I Jadavji[1], WT Emery[1], JB Choy[1]. *[1]University of Alberta Hospital. Edmonton, Alberta, Canada*

Background E/e' is currently the best echocardiographic correlate of left ventricular end diastolic pressure (LVEDP) and is strongly associated with cardiovascular outcomes. The inter-relationship of other echocardiographic variables and their correlation with E/e' has been little explored. **Materials and Methods** We retrospectively analyzed 1,229 consecutive echocardiograms (697 male, mean age 60.91 ± 16.5; 532 female, mean age 61.1 ± 18.8) that were performed in our high volume tertiary referral echocardiography laboratory over a period of 17 weeks (January 25th – June 1st 2007). Patients with severe mitral valvular disease and atrial fibrillation were excluded. Correlations of several echocardiographic parameters of diastolic function with E/e' were investigated using: (a) univariate and multivariate linear regression analysis and (b) areas under the Receiver Operating Characteristic Curve (AROC) with E/e'>15 as the binary endpoint. **Results** The univariate predictors of E/e' were: A/a' (a' average of septal and lateral annuli, $r = 0.62$; AROC 0.87[0.83–0.92]), left atrial volume index (LAVI, $r = 0.40$; AROC 0.80[0.73–0.86]), and left ventricular mass index (LVMI) ($r = 0.34$; AROC 0.72[0.66–0.79]]) (all $p < 0.001$). A 3 variable model for the prediction of E/e' was generated: E/e' = 0.51 + (0.58 A/a') + (0.05 LAVI) + (0.02 LVMI); $r = 0.69$; AROC 0.91[0.87–0.95]; $p < 0.001$. **Conclusions** The strongest univariate predictor of E/e' was A/a'. There are clear independent relationships of LAVI, LVMI, and A/a' for the prediction of E/e'. Might combinations of these measures more accurately predict LVEDP than E/e' alone?

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Investigating the European Society of Cardiology Diastology Guidelines in a Practical Scenario

WT Emery[1], I Jadavji[1], JB Choy[1], **RA Lawrance** . [1]*University of Alberta Hospital. Edmonton, Alberta, Canada.*

Aims Recently, the European Society of Cardiology (ESC) released a consensus statement for the diagnosis of heart failure with preserved ejection fraction (HFPEF). They state that E/e' >15 or <8 clearly define those with or without HFPEF and that for those in the range of 8 – 15, other parameters should be examined. **Methods** We retrospectively analyzed 1,229 consecutive echocardiograms (57% male) performed in our high volume tertiary centre echocardiography laboratory over a 17-week period. Patients with atrial fibrillation and severe mitral valve disease were excluded. We examined the utility of echocardiographic measures suggested in the guidelines: left atrial volume index (LAVI), left ventricular mass index (LVMI), and pulmonary venous and mitral inflow Doppler. **Results** Comparing these measures to E/e'(>15 as the binary endpoint), LAVI and LVMI yielded the strongest correlations with E/e' (AROC 0.80[0.73–0.86], r = 0.40; and AROC 0.72[0.66–0.79], r = 0.34, p < 0.001 respectively). An LAVI cutoff of 40 ml/m^2 yielded 76% sensitivity and 77% specificity respectively. The ESC definition of raised LVMI, based on the lower limit of severely abnormal (females > 122 g/m^2, males > 149 g/m^2), yielded sensitivity of 32% and specificity of 99%. The ASE definition, based on lower limits of mildly abnormal (females > 96 g/m^2, males > 116 g/m^2), yielded sensitivity of 61% and specificity of 88%. We found that the difference between pulmonary venous inflow A reversal duration and mitral A wave duration (AROC 0.46[0.39–0.54], r = 0.02, p > 0.05) provided little incremental information not acquired from the other measurements. **Conclusions** There appears to be little incremental value of pulmonary and mitral Doppler measures beyond the measure of mitral E wave. An LAVI cutoff of 40 ml/m^2 would appear to suitably maximize sensitivity and specificity in our population. However, European guidelines for definition of raised LVMI in patients with HFPEF would appear to heavily trade sensitivity for specificity.

P30

E/e' Ratio Derived From Septal and Lateral Annuli and its Correlation With Left Atrial Volume Index

WT Emery[1], I Jadavji[1], **RA Lawrance[1]**, JB Choy[1]. [1]*University of Alberta Hospital. Edmonton, Alberta, Canada.*

Background The ratio of early mitral inflow to annular tissue Doppler velocity (E/e') is established as the best echocardiographic surrogate of left ventricular end-diastolic pressure (LVEDP). Left atrial volume index (LAVI) also correlates with LVEDP. Both are strong independent predictors of cardiovascular outcomes. We sought to establish which of the septal or lateral E/e' ratio best correlates with LAVI. **Methods** We retrospectively analysed 1,229 consecutive echocardiograms (57% male) performed in our high-volume tertiary referral echocardiography laboratory over a 17 week period (January 25 – June 1, 2007). Patients with severe valvular disease and atrial fibrillation were excluded. LAVI was measured with the biplane area-length method and the relationship with both septal and lateral E/e' ratios was explored. **Results** 674 (55%) patients had adequate images for the assessment of LAVI. Mitral inflow was obtained in 99% of patients, with lateral and septal annular tissue Doppler obtained in 81% of patients. Correlating LAVI to an E/e' cutoff of 15, the area under the receiver operating characteristic curve (AROC) was 0.76[0.70–0.81] and 0.78[0.70–0.86] for septal and lateral annuli respectively. A maximal AROC was achieved with an E/e' cutoff of 16 for both lateral (AROC 0.81[0.72–0.89], p <0.001) and septal (AROC 0.77[0.72–0.83, p<0.001) annuli. Linear regression yielded r values of 0.34 and 0.44 respectively. **Conclusion** There is a close relationship between LAVI and E/e', whether derived from the lateral or septal wall. The maximal AROC is derived when the E/e' cutoff is slightly incremented to 16. These two measurements are key components of diastolic functional assessment.

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Echocardiographic Correlates of left atrial size: inter-relationships with other diastolic measures.

I Jadavji[1], WT Emery[1], **RA Lawrance[1]**, I Vondermuhl[1], JB Choy[1]. [1]*University of Alberta Hospital. Edmonton, Alberta, Canada.*

Background: Left atrial volume indexed to body surface area (LAVI) has been shown to be a strong independent predictor of a number of cardiovascular events, including incident heart failure and mortality following myocardial infarction. We sought to explore other echocardiographic and demographic correlates of LAVI. **Methods:** We retrospectively analyzed 1,229 consecutive echocardiograms (697 male, mean age 61 years ± 18; 532 female, mean age 61.1 years ± 18.8) performed in our high volume tertiary centre over a 17 week period. Patients with atrial fibrillation and severe mitral valvular disease were excluded. We examined established measures of diastolic function as univariate predictors of LAVI and explored their inter-relationship in a multivariable model. **Results:** With LAVI > 40 mL/m^2 as the primary endpoint we demonstrated that LV mass index was most strongly predictive of a high LAVI, followed by E/e', E peak velocity, and then A/a' (Area under the Receiver Operating Characteristic curve [AROC].71[.67-.75], .69[.65-.74], .68[.63-.72], and .62[.57-.67] respectively, p<0.001). Age alone yielded an AROC of 0.63[0.58–0.69] and r = 0.29 (p<0.001). In a multivariable model the following formula predicted LAVI: LAVI = 14 + (0.13 left ventricular mass index [LVMI]) + (0.2 E peak) – (0.76 septal e'); r = 0.54; AROC 0.75[0.71–0.79]; p < 0.001. When we added age to this model, septal e' was eliminated and there was minimal increment in AROC (0.76[0.72–0.81]; p < 0.001) and Pearson coefficient (r = 0.57, p<0.001). **Conclusions:** There is clear interplay of LAVI with age, LVMI, tissue Doppler, and other echocardiographic measures. However, as a model to estimate LAVI yields only modest predictive capacity, other factors (eg. chronicity of diastolic dysfunction, left ventricle end-diastolic pressure) should be further explored.

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Discrepant Mitral Annular Doppler Velocities: Implications For The Assessment Of Diastolic Function

WT Emery[1], I Jadavji[1], **RA Lawrance[1]**, JB Choy[1]. [1]*University of Alberta Hospital. Edmonton, Alberta, Canada*

Background Tissue Doppler of the mitral annulus is an integral part of the assessment of diastole. Not infrequently, we have observed discordance between septal and lateral annular velocities; therefore we sought to investigate this in more detail. **Methods** We retrospectively analyzed 1,229 consecutive echocardiograms (57% male) performed over a 17-week period. Patients with atrial fibrillation and severe mitral valve disease were excluded. We measured septal and lateral early (e') and late (a') diastolic tissue Doppler velocities, and assessed concordance by comparing e'/a' ratios of each annulus. A discordant measurement was defined when one ratio was greater, and the other less than 1. To rule out wall motion abnormality as contributory, we further assessed those with normal wall motion and EF. **Results** Lateral and septal annular tissue Doppler was obtained adequately in 81.6% and 81.1% of patients. As previously described, there was a significant difference in e' and a' velocities, with both velocities higher at the lateral annulus: the e' by 2.7cm/s and a' by 0.8cm/s. The utility of each e'/a' ratio for distinguishing between normal and pseudo-normal patterns of mitral inflow, ie. E/A>1 was assessed. Septal (and lateral) derived e'/a' reversal was demonstrated in 23.4% (9.5%), 43.8% (27.8%) and 37.5% (31.6%) of patients with E/e' <8, 8–15, and >15 respectively. This yielded sensitivity and specificity of septal (and lateral) derived e'/a' for prediction of diastolic dysfunction of 37.5% (31.6%) and 76.6% (90.5%) respectively. Overall, the discrepancy in e'/a' ratio between the two annuli was 28.5% (kappa=0.44, p<0.001). In patients with normal EF/wall motion, this was 26.1%. **Conclusion** 28.5% of patients have discrepancy between septal and lateral tissue Doppler measurements (regardless of EF). For the septal tissue Doppler as a predictor of E/e', we trade a decrement in specificity for an increment in sensitivity and vice versa for septal measurements.

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C-reactive protein correlates with left ventricular ejection fraction and predicts functional status in patients with chronic stable angina

P. Avanzas[1], R. Arroyo-Espliguero[2], J. Quiles[3], JC Kaski[4]. [1]*Hospital Universitario Central de Asturias* [2]*Hospital Universitario de Guadalajara* [3]*Hospital de San Juan* [4]*St George's Hospital, University of London*

Background: Pro-inflammatory cytokines have been reported to be elevated in patients with congestive heart failure (CHF) and have been implicated in the pathogenesis of the disease. It has been suggested that rather than representing an epiphenomenon of disease worsening, inflammatory mechanisms can promote left ventricle remodeling and worsening of CHF. C-reactive protein (CRP) is not merely an inflammatory marker but may also participate in the pathogenesis of atherosclerosis and myocardial injury. **Objectives:** We sought to investigate the relationship among CRP, left ventricular ejection Fraction (LVEF) and symptoms of CHF in patients with chronic stable angina (CSA). **Methods:** We studied 841 patients (mean age 63±10 years, 72% men) with CSA undergoing diagnostic coronary arteriography. CSA was defined as typical chest pain brought on by exertion and relieved by rest, sublingual nitrates or both, with symptoms stable for at least three months before study entry. All CSA patients had a positive ECG exercise stress test response (>1 mm ST-segment depression) or reversible perfusion defects during myocardial perfusion scintigraphy. Symptoms of CHF were assessed using the New York Heart Association (NYHA) functional classification. CRP measurements were performed using a high sensitivity (hs-) immunoassay at the time of diagnostic coronary angiography. **Results:** Baseline serum hs-CRP levels showed a significant correlation with LVEF (r = -0.11; P=0.004) and prevalence of moderate-to-severe CHF showed a gradual increase with serum hs-CRP quartiles (Ptrend <0.0001). After adjustment, age (P=0.004), female gender (P=0.03), body mass index (P<0.0001) and hs-CRP (OR 2.2 [1.3–3.6] CI 95%; P=0.002) were independent predictors of NYHA functional class III-IV, irrespective of LVEF and angiographic severity of coronary artery disease. The area under the receiver-operating characteristic curve (ROC) for hs-CRP to predict impaired NYHA functional class, excluding postmenopausal women, elderly and overweight patients, was 0,72 (95% CI, 0.68 to 0.76; P<0.0001). A hs-CRP value of 3.2 mg/L had a sensitivity of 72%, a specificity of 75%, and a negative predictive value of 96% for detecting an impaired functional class. **Conclusions:** Hs-CRP serum concentrations had an inverse correlation with LVEF and were an independent predictor of NYHA functional class in patients with CSA. Our results suggest that inflammatory mechanisms may be implicated in the pathogenesis of symptomatic heart failure and LV function.

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THE INCIDENCE OF ACUTE RHEUMATIC FEVER IN THE WORLD: A SYSTEMATIC REVIEW OF POPULATION-BASED STUDIES

K.B. Tibazarwa[1], J.A. Volmink[2], B.M. Mayosi[1]. [1]*University of Cape Town* [2]*Stellenbosch University*

Background: Acute rheumatic fever is a multi-organ disease resulting from an autoimmune response of the body to infection with Lancefield Group-A β haemolytic streptococci (GAS). Overall, industrialized countries have experienced a declining incidence of acute rheumatic fever over the past 100 years. However, despite evidence of the effectiveness of antibiotic treatment of GAS pharyngitis in reducing the incidence of ARF, developing countries continue to experience a high burden of the disease and its chronic sequel, rheumatic heart disease.

Aim: To summarise data from population-based studies on the magnitude of, and temporal trends in, the incidence of acute rheumatic fever. **Method:** We conducted a comprehensive search of MEDLINE, EMBASE, and other health-related databases identifying all published prospective population-based studies of the incidence of acute rheumatic fever that fulfilled pre-specified inclusion and exclusion criteria. We critically reviewed each study assessing both mean incidence rate of first attack of acute rheumatic fever per year (calculated over the entire study period for each study), and annum specific incidence rate (for those studies documenting incident cases specific to each year of study). **Results:** Our review included 10 eligible studies conducted in 10 different countries (none in Africa) The overall mean incidence rate of first attack of acute rheumatic fever per year for each study ranged from 5 to 51 per 100 000 population (mean 19 per 100 000; 95% CI 9–30 per 100 000). A low incidence of acute rheumatic fever of ≤10 per 100 000 per year was found in North and South America, and in Northern Europe. There was a high incidence of >10 per 100 000 in Eastern Europe, Middle East, Asia, and Australasia. Annum-specific incidence rates were higher in the Middle East than in other regions. There was a fall in the incidence of acute rheumatic fever over time in all countries with longitudinal data. **Conclusions:** There has been a modest decline in the incidence of acute rheumatic fever over time globally, however, the disease still occurs relatively frequently in Eastern Europe, the Middle East, and Australasia. There are no population-based incidence studies of acute rheumatic fever in Africa, a continent that bears the highest number of cases of rheumatic heart disease in the world.

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Patent ductus arteriosus closed with Nit-Occlud system: mid term follow-up.

RE Rios Mendez[1], R Gamboa[1], FP Mollon[1], GM Arroyo[1], DF Gutierrez[1], DM Villa[2]. *[1]FAVALORO FOUNDATION [2]LUJAN UNIVERSITY*

Objective: After neonatal period the method of choice to close the patent ductus arteriosus (PDA) is by mean catheterization. We report our experience with Nit-Occlud (NOc) device. **Method:** Between May 2003 and August 2007, we carried out percutaneous patent ductus arteriosus closure using a NOc in 41 patients (37,5% male) with diagnosis of PDA only; median age was 1,7 years old (range: 0,5 to 21), median weight was 11,3 Kg (range: 5,9 to 57). All procedures were realized with general anestesia, heparin 100 UI/Kg and bacterial endocardial prophilaxis. The NOc device was advanced from venous femoral throughout introducers 4 to 6 Fr (x: 5); we needed realized loop arterial-venous in 4 pts. We used SPSS 12.0 program to statistic analysis. **Results:** We implanted 39 NOc (a single device to patient)), one case was desestimado because its very long PDA "C", other case was frustrated because to desproportion between size of aortic retention disk of device and descendent aorta diameter, which representing an index treatment treads (ITT: 95,1%). Accord Toronto's clasification, the PDA had different morphologic forms, type A: 43,9%, B: 2,4%, C: 7,3%, D: 12,2% E: 31,7%, and there was one post surgical recanalization of the ductus arteriosus (2,4%). The median minimum ductal diameter was 1,8 mm (range: 0,7 to 4) and the median maximum aortic ampulla's diameter was 6,5 mm (range: 2,8 to 12,1). Median mean pulmonary artery pressure (mPAP) was 17 mmHg (range: 12 to 28). Mean fluoroscopy time was 11,9 minutes (range: 6,9 to 65,4) and follow-up was 28 months (range: 2 to 51). The four last cases have less of 6 months follow-up. All patients was discharged to 24 hours. Without complications. Spearman analysis not found correlation along magnitude of residual shunt (RS) initial y its state to 24 hours ($p<0,1$). **Conclusions:** The Nit-Occlud device provided an effective and safe means of patent ductus arteriosus percutaneous closure, irrespective of ductus morphology. Statistic analysis reveled magnitude of RS initial is not predictor of early or late future occlusion.

OCCLUSION DUCTAL RATE EVOLUTION WITH NIT-OCCLUD.

N° DEVICES	INMEDIATE	24 hs	1 m	6 m	12 m	18 m
38	53,8%	76,9%	82,0%	88,2%		100%

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Effects of Taranabant, a Novel Cannabinoid 1 Receptor (CB-1R) Inverse Agonist, on Weight Reduction in Obese Patients Over 12 Weeks

CD Gonzalez[1], N Erondu[2], B Gumbiner[3], B Musser[2], K Lu[2], RA Capece[2], S Klein[4], E Ravussin[5], JM Amatruda[2], SB Heymsfield[2]. *[1]Merck & Co., Inc, Whitehouse Station, NJ, USA [2]Merck & Co., Inc, Rahway, NJ, USA [3]Metabasis Therapeutics, Inc. La Jolla, CA, [4]Washington University, School of Medicine, St. Louis, MO, USA [5]Pennington Biomedical Research Center, Baton Rouge, LA, USA*

Objectives: This Phase II study assessed the short-term efficacy and safety/tolerability of taranabant. **Methods:** After a 2-wk single-blind placebo (Pbo) plus diet (500 kcal/d deficit) run-in period, patients (body mass index [BMI]≥30 and ≤43 kg/m^2) were randomized equally to one of 5 daily treatments plus diet/exercise and counseling for 12 wks: Pbo or taranabant (0.5, 2, 4, or 6 mg). Efficacy endpoints included mean change from baseline in body weight (BW; primary) and waist circumference (WC; secondary) at Wk 12; analyses were based on the all patients treated population using ANCOVA. Tukey's linear and Cochran-Armitage step-down trend tests were used to compare efficacy and safety results, respectively, for Pbo and taranabant across the doses. **Results:** The study population included 533 patients (86% female) with a mean age, BMI, and weight of 42 ±10 yrs, 36±4 kg/m^2 and 97±14 kg, respectively. After 12 wks, treatment with taranabant significantly reduced BW and WC compared to Pbo (Table). A significant trend toward greater reductions in BW and WC were observed across the doses ($p< 0.050$ for Pbo through taranabant 0.5 mg). Significantly more patients treated with taranabant achieved a weight loss of 5% or greater ($p<0.010$ for Pbo through taranabant 0.5 mg). Taranabant was generally well tolerated; the most common AEs were GI-related occurring in 40 (38.1%), 41 (38.7%), 48 (44.0%), 64 (61.0%), and 58 (53.7%) patients in the Pbo, taranabant 0.5, 2, 4, and 6 mg groups ($p<0.001$ Pbo through taranabant 4 mg). A total of 19 (18.1%), 22(20.8%), 30 (27.5%), 33 (31.3%), and 30 (27.8%) psychiatric AEs were observed in the Pbo, taranabant 0.5, 2, 4, and 6 mg groups, respectively ($p<0.050$ for Pbo through taranabant 4 mg). The GI and psychiatric AEs were generally mild in intensity. **Conclusions:** Treatment with taranabant in combination with diet/exercise for 12 wks was generally well tolerated and led to significant weight loss in obese patients.

TABLE. LEAST SQUARES MEAN CHANGE (95% CI) FROM BASELINE TO WK 12 IN EFFICACY PARAMETERS

	Placebo	Taranabant	Taranabant	Taranabant	Taranabant
	(N=105)	0.5 mg (N=106)	2 mg (N=109)	4 mg (N=105)	6 mg (N=108)
Body weight (BW; kg)	1.3 (-1.9, 0.6)	-2.8 (-3.5, -2.2)***	-3.7 (-4.3, -3.0)***	-4.2 (-4.8, -3.6)***	-5.3 (-5.9, -4.6)***
Waist circumference (WC; cm)	-2.4 (-3.6, -1.3)	-4.2 (-5.4, -3.1)*	-4.2 (-5.4, -3.0)*	-4.8 (-5.9, -3.7)**	-5.0 (-6.1, -3.9)**

***$p\leq0.001$ for Pbo through the taranabant dose shown; **$p\leq0.010$ for Pbo through the taranabant dose shown; *$p\leq0.050$ Pbo through the taranabant dose shown.

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The prognostic value of NT-proBNP in patients with chronic coronary heart disease but without clinically manifest heart failure.

O. Mayer Jr[1], J. Šimon[1], M. Galovcová[2], J. Bruthans[2], R. Cífková[2]. *[1]2nd Dept. of Internal Medicine, Medical Faculty, Charles University, Pilsen, Czech Republic [2]Dept. of Prentive Cardiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic*

Purpose: The concentration of N-terminal fragment of brain natriuretic peptide (NT-proBNP) is a strong prognostic marker among patients with manifest heart failure and acute coronary syndromes. We aimed to establish the association between NT-proBNP and all-cause mortality in patients with stabilized chronic coronary heart disease. **Methods:** NT-proBNP was estimated in 385 patients 6–24 months after acute coronary syndrom or coronary revascularisation (Czech sample of EuroAspire II study) but without history or any symptoms of chronic heart failure. The all-cause mortality was ascertained after median of 6.46 years of follow-up. **Results:** Patients with NT-proBNP above 862 pmol/L (i.e. in top quintile) showed significantly higher all-cause mortality rates, than patients with lower NT-proBNP (3.46%/year vs. 1.08%/year; $p=0.00006$). The odds ratio for all-cause death was in patients with NT-proBNP> 862 pmol/L after adjustment for potential confounders 3.26 (1.40–7.62). **Conclusions:** Asymptomatic elevation of NT-proBNP provides prognostic information also in stabilized coronary patients not yet manifesting any symptoms of heart failure. (supported by Internal Grant Agency of the Ministry of Health, grant no 9333–3)

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Cardiac performance in hypertensive versus physiological left ventricular hypertrophy

M. Deljanin Ilic[1], S. Ilic[1], V. Stoickov[1], L. Nikolic[1]. *[1]Institute of Cardiology, Medical Faculty, University of Nis, Serbia*

Objective: The aim of the study was to assess exercise capacity (EC) and overall left ventricular (LV) function and regional myocardial function in the presence of LV hypertrophy (LVH) induced by hypertension vs sport activities. **Methods:** Seventy male subjects with echo documented LVH were studied: 22 strength - trained athletes (ATS group; weight-lifters, body-builders), 20 endurance athletes (ATE group; swimmers, runners) and 28 hypertensive patients (H group). In all subjects bicycle exercise test and echocardography study were performed. Overall LV diastolic function was assessed by Doppler tissue imaging (DTI) velocity sampling of the mitral annulus. We measured peak annular velocity during early (VE) and late (VA) diastole and calculated their ratio VE/VA. Regional myocardial function of basal LV segments was obtained by pulsed wave (PW) DTI, and in each adequately visualized segment we calculated peak velocity of systolic (Vs), early (Ve) and late (Va) diastolic waves and their ratio Ve/Va. **Results:** During maximal exercise test ATE had significantly greater EC than ATS ($P<0.05$) and H group ($P<0.00001$). Overall LV diastolic function was significantly higher in ATS and ATE than in H group ($P<0.0001$ and $P<0.00001$) but lower in ATS than in ATE group ($P<0.01$). Regional systolic and diastolic myocardial velocities were measured in 115 basal LV segments in H, in 92 in ATS and in 84 in ATE group. Ratio Ve/Va of basal LV segments in ATS group was significantly higher than in H group (1.74±0.36 vs 0.92±0.40; $P<0.0001$) but lower than in ATE group (1.74±0.36 vs 2.02±0.36; $P<0.0001$). Regional systolic function was significantly higher in ATE and ATS group than in H group ($P<0.0001$ for both) but lower in ATS than in ATE group (NS). **Conclusion:** Hypertensive LVH is associated with impaired cardiac performance expressed through significantly lower EC, overall LV diastolic and regional myocardial function in comparison with physiological LVH induced by endurance as well as strength activities.

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Changes of white blood cell count during stress echocardiography may predict future coronary events

S. Ilic[1], M. Deljanin Ilic[1], P. Milosavljevic[1], L. Nikolic[1]. *[1]INSTUTUTE OF CARDIOLOGY, MEDICAL FACULTY, UNIVERSITY OF NIS, SERBIA*

Objective: To assess whether stress induced myocardial ischemia (m.i.) has impact on total white blood cell count (WBCC) and whether value of this changes are related with future coronary events. **Methods:** In the study group of 95 patients (64 male and 31 female, mean age 57.9±8.1 yrs) with known or suspected coronary artery disease submaximal or symptom limited bicycle stress echocardiography (SE) was performed. SE identified ischemia by the occurrence of wall motion abnormality (WMA) with stress. In all pts before and after SE, wall motion score (WMS) was calculated. At baseline and after SE in all pts total and differential WBCC were measured. In order to examine the possibility of WBCC changes to predict future

coronary events, pts were followed for period of three months. **Results:** During SE 62 (65.3%) pts had new, transient WMA, while 33 (34.7%) pts were without ischemia. In pts with SE induced m.i. value of total WBCC and neutrophil count significantly increased after SE compared to baseline values ($P<0.02$ and $P<0.05$). Out of 62 pts with positive SE, in 27 (43.5%) pts total WBCC increased $\leq$10% compared to baseline values (from 7.2$\pm$2.1 to 7.8$\pm$2.5 x 10^9/L, NS), while in 35 (56.5%) pts total WBCC inceased $>$10% (from 7.6$\pm$2.3 to 9.5$\pm$2.5 x 10^9/L, $P<0.005$). Increased in total WBCC $>$10% was associated with increased WMS $>$3 after SE. Patients with increased total WBCC $\leq$10% after SE had WMS increased less or equal 3. During follow up period of three months the incidence of combined coronary events (unstable angina, myocardial infarction, PCI, CABG) were higher in pts with increased total WBCC $>$10% than in pts with increased total WBCC $\leq$10% during SE (34.2% vs 14.8%). **Conclusion:** Our results suggest that stress provoked m.i. is accompanied with increase in total WBCC which unmasks the presence of acute inflammation. More severe m.i. is associated with greater increase in total WBCC after SE. Increased in total WBCC $>$10% during SE predicts higher coronary events rate during three months period.

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Use of (all-blood) miniplegia versus crystalloid cardioplegia in an experimental model of acute myocardial ischemia

O. Petrucci[1], RW Vieira[1], MR Carmo[1], N Antunes[1], PPM Oliveira[1], DM Braile[1]. [1]*CAMPINAS STATE UNIVERSITY*

Purpose: Several methods of myocardial protection have been used. The use of all-blood solutions modified with glutamate and aspartate has increased. Its use in situations of acute ischemia provides improved contractile function, "resuscitating" the previously lesioned muscle. The dilution preconized by literature is around 25% of the hematocrit. The present study evaluates an all-blood cardioplegia solution with tepid 1% dilution, denominated miniplegia. **Material and Method:** Pigs of the Large-White breed were used with an isolated heart and perfused with blood of a support animal. Three groups ($n = 7$ per group) were designated with the following treatments: Control group (CO), St. Thomas solution (ST), continuous normothermic all-blood solutions (SG). After the stabilization period, systolic pressure (PS), diastolic pressure (PD), developed pressure (PD), stress of the wall, elastance and passive stiffness were recorded. The hearts were submitted to 30 minutes of regional ischemia with the clamping of the anterior interventricular artery, and subsequently to 90 minutes of global ischemia with the use of the three different treatments during this period. At the beginning of global ischemia, the coronary clamp was removed. The hearts were again reperfused. Upon three minutes into reperfusion the hearts were defibrillated when necessary. Measurements were taken every 30 minutes until 90 minutes into reperfusion. **Results:** The SG presented a better recovery of the ventricular function in several of the parameters recorded. The ST group was inferior to the SG group, which in turn was superior to the CO group in some of the parameters analyzed. A higher number of defibrillations was needed to reestablish coordinated heart beats in the ST and CO groups. There were no differences related to the percentage of wet weight between the SG and ST groups, and the percentage was higher in the CO group. **Conclusion:** The use of all-blood miniplegia provided superior protection when compared to global ischemia or crystalloid cardioplegia in acutely ischemic hearts. The model employed is very close to the clinical situation due to the use of blood as a perfusate.

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Echocardiography and adenosine test: non invasive method to detect patients with reactive pulmonary hypertension.

R. Reinoso[1], H. Badiola Villa[2], R. Artigas Garcia[3], C. Lozano Girol[4]. [1]*Complejo Hospitalario Llerena-Zafra, Servicio Exremeño de Salud, Badajoz-España.* [2]*Complejo Hospitalario Llerena-Zafra, Servicio Exremeño de Salud, Badajoz-España.* [3]*Complejo Hospitalario Llerena-Zafra, Servicio Exremeño de Salud, Badajoz-España.* [4]*Complejo Hospitalario Llerena-Zafra, Servicio Exremeño de Salud, Badajoz-España.*

Background: Adenosine test, nitric oxide and epoprostenol are applied for measure pulmonary vascular hyperactivity during right heart catheterization, and according to the results decided the treatment with calcium antagonist. This study was performed to prove security and reliability of echocardiogram in application of adenosine test to detect patients with pulmonary hypertension vasoreactive. **Methods and results:** An echocardiogram were performed to patients with known pulmonary hypertension, and later on administrated adenosine iv, registering the tricuspid transvalvular gradient with continuous Doppler to calculate pulmonary systolic pressure, trough Bernoulli's formula. During the year 2007 we studied 15 patients, 2 (13 %) with severe pulmonary hypertension and 13 (87%) with moderate pulmonary hypertension. 13 patients (87%) suffered pulmonary hypertension secondary to mitral or aortic valve disease, or myocardial disease. One of them (7%) had not evidence of left cardiac pathology, and another one suffered atrial septal defect operated. Four of them (27%) shown significant fall of pulmonary systolic pressure: from 80 mmHg to 44 mm Hg, from 86 to 46 and from 46 mmHg to 23 mmHg and from 47 to 18 mm Hg. There was not complications or secondary effects practising the test. **Conclusions:** We conclude that Adenosine test was sure and safety in our sample of patients suffering of moderate to severe pulmonary hypertension, being a non invasive and easy method which let it use for screening and treatment for these patients. **Key Words:** hypertension, pulmonary – echocardiography – adenosine.

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How often does pressure recovery affect measurement of aortic valve gradients by Doppler echocardiography in patients with aortic stenosis in real-world clinical practice?

AC Parameswaran[1], D Reisner[2], A Amanullah[1]. [1]*Albert Einstein Medical Center* [2]*Thomas Jefferson University*

Background: Studies have shown very good correlation between Doppler derived gradients and gradients obtained by cardiac catheterization (cath) in aortic stenosis (AS). However, the phenomenon of pressure recovery may lead to significant overestimation of aortic valve (AV) gradients by Doppler echocardiography (echo). We hypothesized that echo derived gradients will be higher in mild – moderate AS because of pressure recovery. **Materials and Methods:** The study population included 119 consecutive patients who had echocardiograms and cardiac caths in a span of 1 week. Comparison between the mean gradients obtained by cath and echo were done in mild, moderate and severe AS. **Results:** The final cohort consisted of 94 patients with complete data. The mean age was 72 $\pm$ 13 years, 54% male, 79% had coronary artery disease and the mean left ventricular ejection fraction was 41$\pm$22%. The correlation between gradients derived by cath and echo was 0.8 ($p<0.05$). For those with mild AS, the gradient by echo tended to be higher by an average of 8 mm Hg ($P<0.001$). There were no significant differences in mean gradients by cath and echo for moderate AS. For severe AS, the mean gradient by echo tended to be lower by an average of 14.1 mm Hg ($p=0.013$). For those with mild AS, echo overestimated gradients in 9.5 % of patients (4/42) by an average of 19 mm Hg thus misclassifying the degree of stenosis. In those with moderate AS, 14% (3/21) were misclassified as severe AS (gradient overestimation by an average of 13.6 mm Hg). In those with severe AS, echo underestimated gradients in 13% (4/31) by an average of 22.7 mm Hg. The aorta at the sino-tubular junction was 2.8 cm in those patients with mild AS in whom gradients were overestimated by more than 20 mmHg compared to a sino-tubular junction diameter of 3.12 cm in those with mild AS and no overestimation of gradients. The AV area/aortic root ratio was 0.4 in those with mild AS and 0.2 in those with severe AS ($p<0.05$). **Conclusions:** Although the correlation between cath and echo for AV gradients were good, echo tends to overestimate AV gradients in patients with mild and moderate AS likely due to the phenomenon of pressure recovery. This can have important clinical implications. An unexpected finding is that in those with severe AS, echo tended to underestimate the AV gradients. We hypothesize that this may be due to the more eccentric jet seen in severe AS increasing the angle of incidence of the Doppler beam leading to underestimation of the jet velocity and thus the pressure gradient. All patients with mild AS and significant overestimation of gradients had smaller aortic roots, thus facilitating conditions for pressure recovery.

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Effect of beta blocker treatment on platelet nitric oxide synthase, cyclic guanosine monophosphate and oxidative stress, in patients with heart failure

A. Shah[1], E Gkaliagkousi[1], J Decourcey[2], R Buckley[2], J Ritter[1], A Ferro[1]. [1]*King's College London, London, UK* [2]*King's College Hospital, London, UK*

Heart failure (HF) is characterised by impaired bioactive nitric oxide (NO), increased catecholamine levels and reactive oxygen species. Platelet derived NO plays an important role in prevention of thrombosis. β-blocker (BB) treatment has been shown to improve clinical outcome in HF patients. In the present work, we wished to determine whether BB treatment influences platelet NO and superoxide anion biosynthesis in HF patients. Ten HF patients (age 63.9 $\pm$ 5.1 years; 7 male, 3 female) were studied before and after 14 weeks of bisoprolol therapy (dose 4.4 $\pm$ 0.5 mg daily), along with standard HF medications. Platelet NO synthase (NOS) activity (both basal and after stimulation with albuterol 10^{-5} M) was determined in gel-filtered platelets, from the rate of conversion of L-[^{3}H] arginine to L-[^{3}H] citrulline. Intraplatelet cGMP, an index of bioactive NO, was determined by radioimmunoassay. Platelet superoxide anion production was measured by pholasin-enhanced chemiluminescence. Data expressed as mean $\pm$ SEM, and analyzed by student's paired t test, with $P < 0.05$ taken as significant. After BB treatment, basal NOS activity was unaltered (pre: 211.7 $\pm$ 45.4, post: 241.1 $\pm$ 70.4 fmol L-citrulline/10^8 platelets, $P=0.73$), whereas albuterol-stimulated NOS activity was increased as compared to baseline (percent rise from baseline, pre: -10.17 $\pm$ 7.23 %, post: 23.74 $\pm$ 9.62 %, $P<0.05$). On the other hand, following BB treatment, both basal (pre BB: 10.44 $\pm$ 19.18 and post BB; 124.95 $\pm$ 27.20 fmol/10^8 platelets, $P<0.05$) and albuterol stimulated (pre BB: -15.55 $\pm$ 32.44 and post BB: 127.70 $\pm$ 38.17 fmol/10^8 platelets, $P<0.05$) cGMP was increased in platelets. BB therapy resulted in a decrease in platelet superoxide anion production (pre: 15920.35 $\pm$ 2244.44, post: 8600.27 $\pm$ 1969.43 units of light/10^8 platelets, $P<0.05$). Our results demonstrate that, in HF, BB therapy improves the ability of platelet NOS to synthesise NO, and decreases platelet superoxide anion generation, thereby leading to an increase in bioactive NO both basally and in response to stimulation. This effect is likely to attribute to a generalized improvement in HF status. Our findings may explain in part the ability of BB therapy to decrease thrombotic events in patients with HF.

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THE HUMAN SEROTONIN 5-HT4a RECEPTOR

J. Neumann[1], H. Ebelt[2], U. Klöckner[3], A. Böckler[1], S. Günther[1], M. Baumann[1], N. Schulz[1], F. Werner[1], U. Gergs[1] [1]*Institut für Pharmakologie und Toxikologie,* [2]*Klinik für Innere Medizin III,* [3]*Julius-Bernstein-Institut für Physiologie, Universität Halle-Wittenberg, D-06097 Halle*

In the human heart the serotonin (5-HT) receptor isoform 5-HT4 is expressed in atria and ventricle. Moreover, in the failing heart 5-HT4 receptor mRNA was increased compared to nonfailing hearts. 5-HT is thought to play a proarrhythmic role in human atria, mediated by 5-HT4 receptors, especially in patients treated with β–adrenoceptor antagonists. To study the

role of cardiac 5-HT4 receptors, we generated transgenic mice (TG) with cardiac-specific expression of the human 5-HT4a receptor under control of the α-myosin heavy chain promoter. β-adrenergic signaling was not affected in TG, as inotropic and chronotropic effects of isoproterenol on isolated left and right atria were unchanged. While 5-HT (10 μM) had no effect on atria from wild type mice (WT), positive inotropic (in f'mN: transgenic, 2.5"b0.5; wild type, -0.5"b0.2; n=8, p<0.05) and positive chronotropic (in bpm: transgenic, 592"b12; wild type, 315"b17; n=7, p<0.05) effects of 5-HT were detected in left and right atria of TG, respectively. Moreover, 5-HT effects could be blocked completely by the 5-HT4 receptor specific antagonists GR125487 or GR113080 (10 nM). The effects were still present after pretreatment of TG with reserpine (5 mg/kg). Similarly, 10 μM 5-HT increased contractility in isolated perfused hearts and isolated cardiac myocytes of TG but not WT. The increase in contractility by 5-HT in isolated cells from TG was accompanied and probably mediated by an increase in Ca2+ transients and L-type Ca2+ channel current. In intact animals, echocardiography revealed an inotropic and chronotropic effect of subcutaneously injected (1 mg/Kg) 5-HT in TG but not WT mice. These findings demonstrate functional expression of 5-HT4 receptors in the atria and ventricle of transgenic mice. Therefore, 5-HT4a receptor-overexpressing mice might be a useful model to investigate the influence of 5-HT in the development of cardiac arrhythmias and heart failure.

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Effects of resistance stress on cardiac biochemical markers in power lifters

V. Pönitz[1], SPH Hjortshoj[2], G Espersen[2], J Ravkilde[2]. [1]*Stavanger University Hospital, Norway* [2]*Aalborg University Hospital, Denmark*

Background: The aim of this investigation was to assess short-term effects of sub maximal resistance stress on serum levels of cardiac markers in a group of healthy power lifters. **Methods:** 20 male elite power lifters were enrolled in the study. All participants performed a standardized exercise program exerting resistance stress including a short warm-up period, followed by exercising "bench press", "dead lift" and "squat" with 5 sets of 2 repetitions respectively. The lifters were encouraged to exercise with 80% of one repetition maximum weight in each set. None of the subjects performed additional training 24 hours prior to or during the investigation. Venous blood samples for the determination of creatine kinase catalytic activity (CK total), CK isoenzyme MB catalytic activity (CKMBact), mass concentration of CK isoenzyme MB (CKMB mass), myoglobin and cardiac troponin T (cTnT) were obtained prior and 8 hours following exercise. **Results:** Baseline levels of cTnT were beneath the 0.01 μ g/l detection limit of the assay in all subjects. Following exercise, no increase in cTnT levels over the detection limit was observed. In contrast, CK total levels increased from 195 (131–586) to 345 (236–314) U/l, CKMBact from 12 (8–17) to 14 (12–19) U/l, CKMBmass from 3.1 (1.9–4.1) to 4.6 (3.4–6.1) μ g/l and myoglobin from 45.0 (41.8–54.9) to 92 (61–183) μ g/l from pre to post-exercise values (median and 25- and 75% percentiles, p< 0.01 for all parameters) respectively. The ratio of CKMB to CK did not increase over 0.03 in any of the samples. **Conclusions:** Increases in CK, CKMB and myoglobin in this study are most likely originated in skeletal muscle. Our results suggest that short-term resistance stress does not cause myocardial damage in hearts of healthy, well trained subjects.

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Clinical features of STEMI-patients with multivessel disease who develop cardiogenic shock after primary percutaneous coronary intervention.

A. Dominguez-Rodriguez[1], MJ Garcia-Gonzalez[1], S Samimi-Fard[1], A Sanchez-Grande[1], G Yanes-Bowden[1], I Hernandez-Baldomero[1], P Abreu-Gonzalez[2], F Marrero-Rodriguez[1]. [1]*Department of Cardiology (Coronary Care Unit), University Hospital of Canarias, Tenerife, Spain* [2]*Department of Physiology, University of La Laguna, School of Medicine, Tenerife, Spain*

Background: Cardiogenic shock (CS) is a serious complicaction and the leading cause of in-hospital mortality in patients with ST-segment elevation myocardial infarction (STEMI). Multivessel disease is present in 50% of STEMI-patients treated with primary percutaneous coronary intervention (PCI). These patients have a worse prognosis, with a worse clinical outcome mainly due to a higher frequency of CS at admission. **Objectives:** Identify clinical and angiographic characteristics of STEMI-patients with multivessel disease and CS at admission after primary PCI. Methods: We studied 290 patients with STEMI treated with primay PCI within 6 h after symptoms onset. Multivessel disease was defined as the presence of >50% stenosis in >2 major epicardial arteries. Out of these 290 patients, 116 (40%) had multivessel disease, comprising the study population. Clinical and angiographic variables were compared between those with and without CS. A step-wise logistic regression model was performed to identify the independent predictors for CS among patients with multivessel disease. **Results:** Among patients with multivessel disease, 16 (13,7%) had CS at admission. The independent predictors of CS in patients with multivessel disease were diabetes mellitus (OR 1.6; 95% CI 1.1 to 2.9; p <0.01), chronic occlusion of other coronary arteries (OR 3.5; 95% CI 2.1 to 4.7; p <0.001) and anterior STEMI (OR 2.3; 95% CI 1.4 to 3.1; p <0.001). **Conclusions:** Among STEMI-patients with multivessel disease, CS is most frequent in those with diabetes mellitus, chronic occlusion of other vessels and anterior STEMI.

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The Correlation Between Augmentation Index and Myocardial Ischemia of Adenosine Stress Myocardial Scintigraphy

T. Morishima[1], T. Hatano[1], M. Aiga[1], M. Odaira[1], M. Nakayama[1], K. Takeishi[2], S. Fuse[2], T. Chikamori[3], K. Takazawa[1], A. Yamashina[3]. [1]*Hachioji Medical Center, Division of Caldiology* [2]*Hachioji Medical Center, Radiology* [3]*Tokyo Medical University Internal Medicine 2*

In recent years, Augmentation Index(AI) with radial artery for non-invasion gets possible to measure. And it is thought that AI is useful for an index of arterial sclerosis and evaluation of complications of hypertension. Generally speaking, arterial sclerosis progresses in non-continuity and latency, and causes atherosclerosis, and makes ischemic heart disease. The subject of this study was consecutive 179 patients who were underwent adenosine stress myocardial perfusion imaging (MPI). All patients were measured AI just before MPI. One hundred fourteen men and 65 women with an age range 68.2±9 years and 136 patients(76%) were used 201 Thallium. We measured AI value and slope of ejection wave (S1) and reflection wave (S2) from radial artery, and compared visual evaluation of myocardial ischemia and Summed Stress Score(SSS), Summed Rest Score(SRS), and Summed Difference Score(SDS) in MPI. Using 17- segment, 5-point scoring system, 3 nuclear variables were defined. Like a previous report, AI value indicated weak positive correlation (r=0.26, P<0.05) age, and systolic blood pressure. No significant correlation was observed between AI value and SDS (r=0.047), SRS(r=0.054), SRS(r=0.075) and presence of ischemia by visual evaluation(P=NS). But significant correlation was observed slope of S1 < S2 and SRS(P<0.05). These results suggest that noninvasive quantitative assessment with pulse wave and myocardial ischemia do not have correlation, however, presence of arterial sclerosis by enhancement of a reflection wave has some myocardial damage include myocardial infarction.Before a coronary artery disease occurs, arteriosclerosis already develops; it's thought that there is a temporal difference time of the arteriosclerosis development and the coronary artery pathological morbid state change. Therefore, it is thought that a high correlation was not obtained between ischemia in MPI and AI for this examination.

P52

A Prospective Randomized Trial of a Rapid Fibrinolytic Protocol for Left-sided Prosthetic Valve Thrombosis (RAFT-PVT)

G Karthikeyan[1], N Mathew[1], RS Math[1], PR Bhimashankar[1], S Singh[1], M Kalaivani[1], VK Bahl[1]. [1]*All India Institute of Medical Sciences*

Background: The optimal fibrinolytic strategy for left sided prosthetic valve thrombosis (PVT) is not known. A large initial bolus dose of streptokinase (SK) might accelerate fibrinolysis and restore valve function more rapidly. **Objective:** To compare the safety and efficacy of a rapid fibrinolytic protocol (RFP), with the standard infusion of SK, for the treatment of a first episode of left-sided PVT. **Methods:** We performed a prospective, randomized, open-label, parallel-group trial comparing two fibrinolytic protocols. In the RFP, 1.5MU of SK was given over 1 hour, followed if required by a 0.1MU/h infusion. In the standard protocol 0.25MU was given over 30 minutes, followed by an infusion of 0.1MU/h. Serial echocardiography and fluoroscopy was done to monitor therapy. The primary end point was the occurrence of a complete clinical response defined as complete restoration of valve function without the occurrence of any major complication. 52 patients were required in each arm to demonstrate a 30% improvement in the primary endpoint with 80% power, at a two-sided α of 0.05. Analysis was by intention to treat. **Results:** 120 patients were randomized between November 2004 and March 2007. The primary endpoint occurred in 38/59 patients (64.4%) in the RFP and in 32/60 (53.3%) of the patients receiving the standard infusion (unadjusted OR 1.58, 95% CI 0.76–3.3, p=0.22). In a multivariate logistic regression model, the only variables which independently predicted the occurrence of the primary endpoint were, better NYHA class (OR 24.2 for Class I/II vs. Class III/IV; 95% CI 6.06–96.64, p=0.000) and (among patients with mitral PVT) the preservation of the chordal apparatus at surgery (OR 3.9, 95% CI 1.18–12.91; p=0.026). Patients in the RFP were more likely to require <3MU of SK (OR 2.6, 95% CI 0.9–7.47, p=0.07) and <12 hours of infusion (OR 4.9, 95% CI 1.71–14.13, p=0.0009), for a complete response. Remarkably, among those who showed a complete response, 15/38 (39.5%) did so with the initial bolus dose of SK in the RFP, compared to 1/32 (3.1%) in the standard protocol (p=0.0003). Overall, 15/59 (25.4%) patients achieved a complete response with only the bolus dose. There was no significant difference in the occurrence of death, major bleeding or embolic stroke between the two groups. **Conclusions:** This is the largest, prospective, randomized study of fibrinolytic therapy for left-sided PVT. Overall, the efficacy of fibrinolytic therapy for left-sided PVT was poor (complete response in 70/119, 58.8%). The RFP was not superior to the standard protocol of SK infusion in producing a complete clinical response; however, it did so more rapidly. There were no differences in the rates of major adverse events between the two strategies. (ClinicalTrials.gov identifier NCT00232622)

P53

Significance of brain natriuretic peptide in the prediction of secondary morbidity and mortality in post-MI patients

A. Boskovic[1], L. Music[1]. [1]*CC of Montenegro* [2]*CC of Montenegro*

Prognostic value of elevated plasma level of brain natriuretic peptide (BNP) has been reported in patients with chronic heart failure (CHF). However the role of this marker in the prediction of secondary morbidity and mortality in post-MI patients has not been well established. **Aim:** The aim of the study is to estimate the role of BNP for the prediction of heart failure and mortality in post-MI patients for follow-up period of one year. **Methods and Results:** The role of plasma BNP level in the prediction of heart failure and mortality was prospectively assessed in 151 patients with acute myocardial infarction. Mean age of patients was 64±10 years, mean BMI was 26.36±3.35kg/m2 and M/F ratio was 103/48. BNP levels were measured at the

admission, after 24 hours and after 72 hours. Ejection fraction was determined by echocardiography in all patients. The patients divided in two groups: group A (48 patients) in which were patients with BNP < 70 pg/ml and group B (103 patients) in which were patients with BNP > 70 pg/ml. There was not significance difference for age, sex and BMI between the groups. During follow-up period of one year 2 patients had clinical signs of heart failure and 1 patient died in group A and 8 patients had clinical signs of heart failure and 9 patients died in group B, patients in group B had lower ejection fraction than patients in group A ($p < 0.05$). Distribution showed that BNP level was related to heart failure and to mortality in post-MI patients ($p < 0.05$). **Conclusion:** Higher level of BNP in acute phase of myocardial infarction predict worse prognosis during follow up of one year in patients with acute myocardial infarction.

P54

Is there difference between daily and nightly heart rate variabilty in patients with acute myocardial infarction

A. Boskovic[1], L. Music[1]. [1]*CC of Montenegro* [2]*CC of Montenegro*

Heart rate variabilty(HRV) as marker of activity of autonomic nerve system can be used as noninvasive method for risk stratification in patients with acute myocardial infarction(AMI). **Aim:** The aim of the study is to estimate if there is a difference between daily and nightly HRV in risk stratification in patients with AMI. **Methods and Results:** We observed 100 patients with AMI, mean age 56.99±11.03, M/F was 80/20. Anterior localization of AMI had 44 patients and inferior AMI had 56. Time domain HRV analysis, was obtained by mean of a 24-hour Holter monitoring, and the parameters calculated were: standard deviation of all NN intervals (SDNN) and standard deviation of 6-hours NN intervals daily(SDNNd) and nightly(SDNNn). We also observed the clinical, laboratory and echocardiography variables. During follow-up period of one year 11 patients died, 10 of them died because of cardiac reason and one died because of stroke. There was significant lower value of SDNN 60.55±12,84ms in dead vs. 98.38±28,21ms in survivors, mean daily SDNNd was 51,55±13,62ms in dead vs 78,72±25,41ms in survivors($p<0,01$), mean nightly SDNNn was 62,27±18,30ms in dead and 101,16±43,37ms in survivors ($p<0,01$). Ventricular ectopic activity is more frequent in patients who died then in the survivors ($p<0.01$). Multivariate Cox analysis showed that 24-h SDNN is a significant, independent predictor for mortality in post-MI patients, but not daily and nightly SDNN. Also the independent predictors for mortality are an impaired left ventricular function and a ventricular ectopic activity (number of VPCs>10/hour). **Conclusion:** HRV was lower daily then nightly, but only 24-h SDNN is an independent predictor for mortality in post-MI patients.

P55

Clinical efficacy of statins in smokers with coronary artery disease

A. Boskovic[1], L. Music[1], S. Dragnic[1]. [1]*CC of Montenegro* [2]*CC of Montenegro* [3]*CC of Montenegro*

Hypercholesterolemia and smoking are mayor risk factors for coronary artery disease and represent the risk factors that we can managed. **Aim:** The aim of the study is to evaluate the efficacy of statins and their influence on total cholesterol, LDL-cholesterol, HDL-cholesterol and triglycerides in smokers with coronary artery disease. **Methods and Results:** The study included 153 patients with coronary artery disease, mean age 57.43±11.26; mean BMI was 27.23±3.81 kg/m2, M/F was 108/45. All patients have been treated with statins, 63 patients (41.18%) have been treated with 10–20mg of atorvastatin and 90 (58.82%) with 20–40mg of simvastatin. Between them, 95 patients (62.09%) were smokers and 58 (37.91%) were nonsmokers. At the beginning of the study there was no significant difference between average total cholesterol (7.24±1.26 versus 7.39±1.18mmol/l), LDL-cholesterol (5.08±1.06 versus 5.21±1.11mmol/l), HDL-cholesterol (1.02±0.16 versus 1.04±0.14mmol/l) and triglycerides (3.04±1.40 versus 2.92±1.37mmol/l) in men versus women. After twelve weeks of treatment there was not significant difference in efficacy of statins between men and women ($p > 0.05$). Average total cholesterol was (5.04±1.07 versus 5.11±1.12mmol/l), LDL-cholesterol (3.09±0.98 versus 3.15±0.96mmol/l), HDL-cholesterol (1.05±0.17 versus 1.08±0.14mmol/l) and triglycerides (2.10±1.11 versus 2.04±1.09mmol/l) in men versus women. During follow up period of twelve weeks there were not new coronary events. **Conclusion:** The statins were very efficacy in lowering of total cholesterol, LDL-cholesterol, and triglycerides in patients with coronary artery disease ($p<0.05$). After twelve weeks of treatment there was not significant difference in efficacy of statins between smokers and nonsmokers with coronary artery disease which is of great importance in secondary prevention of coronary artery disease.

P56

Clinical efficacy of statins in secondary prevention in patients with coronary artery disease depending on gender

A. Boskovic[1], L. Music[1]. [1]*CC of Montenegro*

Hypercholesterolemia is one of the mayor risk factors for coronary artery disease and represent a risk factor that we can managed. **Aim:** The aim of the study is to evaluate the efficacy of statins and their influence on total cholesterol, LDL-cholesterol, HDL-cholesterol and triglycerides in patients with coronary artery disease depending on gender. **Methods and Results:** The study included 153 patients with coronary artery disease, mean age 57.43±11.26; mean BMI was 27.23±3.81 kg/m2, M/F was 108/45. Between them, 63 patients (41.18%) have been treated with 10–20mg of atorvastatin and 90 (58.82%) with 20–40mg of simvastatin. At the beginning of the study there was no significant difference between average total cholesterol (7.42±1.07 versus 7.22±1.01mmol/l), LDL-cholesterol (5.04±1.03 versus 4.87±1.12mmol/l), HDL-cholesterol (1.01±0.16 versus 1.04±0.15mmol/l) and triglycerides (3.02±1.36 versus 2.89±1.45mmol/l) in men versus women. After twelve weeks of treatment there was not significant difference in efficacy of statins between men and women ($p > 0.05$). Average total cholesterol was (5.09±1.08 versus 5.02±1.11mmol/l), LDL-cholesterol (3.08±0.95 versus 3.02±0.92mmol/l), HDL-cholesterol (1.06±0.17 versus 1.08±0.15mmol/l) and triglycerides (2.08±1.09 versus 2.02±1.08mmol/l) in men versus women. During follow up period of twelve weeks there were not new coronary events. **Conclusion:** The statins were very efficacy in lowering of total cholesterol, LDL-cholesterol, and triglycerides in patients with coronary artery disease ($p<0.05$). After twelve weeks of treatment there was not significant difference in efficacy of statins between men and women with coronary artery disease.

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Cardioprotective Effect of Red Wine

A. Novakovic[1], LJ. Gojkovic Bukarica[2], D. Nezic[3], M. Peric[3]. [1]*Faculty of Pharmacy, Belgrade, Serbia,* [2]*School of Medicine, Belgrade, Sebia,* [3]*Institute of Cardiovascular Diseases "Dedinje", Belgrade, Serbia*

The lower incidence of coronary artery disease in the Soutern French and other Mediterranean populations, despite a diet rich in saturated fat and high smoking habits (the so-called French paradox), has been atributed to the prolonged and moderate red wine consumption by these population. It is considered that resveratrol, as a polyphenol, is presented in red wine in significant amounts, and partly responsible for cardiovascular benefits associated with wine consumption. The mechanism of cardiovascular benefits probably includes vasorelaxation, antioxidant and anti-platelet effects of resveratrol. The mechanisms by which resveratrol causes vasodilatation are uncertain. **Aim:** The aim of this study was to investigate the mechanism (s) of resveratrol-induced vasorelaxation in human internal mammary artery (HIMA) with endothelium and without endothelium. **Methods:** HIMA were precontracted with phenylephrine (10 microM). **Results:** Resveratrol induced a concentration-dependent relaxation of the rings with endothelium and without endothelium. Highly selective blocker of ATP-sensitive K^+ channels, glibenclamide as well as nonselective blockers of Ca-sensitive K^+ channels, tetraethylammonium did not block resveratrol-induced relaxation of HIMA rings. Charybdotoxin, a blocker of calcium-sensitive K^+ channels did not affect the resveratrol-induced relaxation. 4-Aminopyridine, non selective blocker of voltage-gated K^+ (K_V) channels, and margatoxin, that inhibits K_V1 channels, abolished relaxation of HIMA rings induced by resveratrol. **Conclusions:** In conclusion, we have shown that resveratrol can induce relaxation of HIMA with endothelium and without endothelium. It seems that 4-Aminopyridine– and margatoxin–sensitive K^+ channels located in vascular smooth muscle mediated relaxation of HIMA produced by resveratrol.

P58

Gender, age and clinical differences of Idiopathic, Hypertrophic and Atypical complete left bundle branch block

S. Sclarovsky[1]. [1]*Procardia Cardiac Center*

Purpose: to describe different types of CLBBB and correlate them to gender, age and clinical presentation. **Methods and material:** ECG, demographic, clinical, and therapuetic data were transmited through telemedicine to Procardia Cardiac Center from 130 Maccabi health community centers. ECGs demonstrated CLBBB were classified into in 3 groups : GR 1 (Idiopathic): QRS- 120ms, S waves V2,V3 =120mm, RR' 40ms, GR 2 (hypertrophic): QRS> 120ms, S waves in V2,V3 >25 mm. GR 3 (atypical): QRS >120ms, q waves in LI,ALL or in V5,V6. Gender, age and clinical set up (hypertension (HT), diabetes mellitus(DM), coronary artery bypass (CABG), aortic stenosis (AS), aortic and mitral replacement, cardiac failure(CF)) were correlated to the 3 CLBBB groups. **Results:**

		GR1	GR2	GR3	
N		50	29	20	P value
Age >50	1	7	3.4	0	P<0.001
<50	49	92	96.6	100	
gender					
F		86	37.1	0	P<0.001
M		14	62.9	100	
cardiac failure		1	17	37.9	P=0.01
CABG		0	3	70	p<0.001

No significant difference was found between the remaining clinical set ups.

Conclusion: Idiopathic CLBBB is a predominantly a manifestation demonstrated in post menopausal female (F, >50). Hypertrophic CLBBB is manifested in both gender and Atipical CLBB is seen in male mostly post CABG. The different pathophysiology in the three groups will be discussed.

P59

Electrical remodeling (ER) as is expressed in the electrocardiogram (ECG), electrical remodeling phenotypes from Neonatal to Sexual maturation, Gender differences.

S. Sclarovsky[1]. [1]*Procardia Cardiac Medical Center*

Background: In fetal life the myocytes are not involved in peripheral hemodynamics. In post natal life, the myocytes of the left ventricle undergo very rapid remodeling, activated by a series of fetal genes, adapted to the new hemodynamic requirement. The same series of genes induce different phenotype patterns of remodeling. The sex hormones have a critical effect on remodeling of the left ventricle during sexual maturation. **Purpose:** To describe the remodeling phenomenon induced by fetal genes in different areas of the left ventricle as expressed in ECG from neonatal until sex maturation. **Methods and Material:** ECGs were obtained through the electronic transmition system to Procardia Medical Center from 130 Maccabi Community

Health Centers. Data included demographic, clinical and therapeutic information. 5 remodeling areas(A) in the left ventricle as expressed by the ECG A1): Basal: R AVL >10mm SLIII >10mm. A2) Apical R V5 > 20mm. A3) Septal R V2, V3 >10mm. A4) Posterior Swaves in V2,V3 >10mm. A5) Lateral RLI>10mm, S AVR >10mm, SV1.>10mm. No remodeling (NR): S and R waves <10 mm We divided the patients into 4 groups (GR): GR1) 0m -12 m GR2) 1yo-6 yo . GR 3) 7 yo - 12yo. GR 4) 13yo - 18yo **Results:**

	GR1	GR2	GR3	GR4	p value
n	F M	F M	F M	F M	
	10 7	16 44	13 55	42 79	
NR	0 0	3 4	2 4	35 23	P<0.001
Apical	1 0	2 4	3 12	1 19	P=0.01
Septal	3 5	7 14	9 19	1 9	P<0.001
Posterior	5 2	5 19	21 27	5 35	ns
Lateral	1 0	1 3	0 3	0 0	ns

(ns=no significant difference)

Conclusion: Before sexual maturation the are different phenotypes of remodeling. The apical and posterior remodeling is very frequently seen in male in the pre maturation and maturation period suggesting that the remodeling pattern accompanies males from infancy to adolescence, suggesting that there is an androgen effect on male remodeling. In sexual maturation there is a regression of remodeling in the female, suggesting the critical effect of estrogen in remodeling.

P60

The accuracy of factors used in assessing the progression of expressed heart failure symptoms

A. Chaitoff[1], H. Kominsky[1], V. Sumodi[1], K. Fagnilli[1], M. Hanna[1]. [1]*Hillcrest Hospital, A Cleveland Clinic Hospital*

Background– Recent studies have shown that as the kidney disease that often comes with heart failure progresses, erythropoietin (EPO) is no longer produced and subsequently hemoglobin levels are reduced to anemic proportions. Many heart failure clinics treat only the remodeling of the heart found in heart failure patients, however, there is little known about the correlation between lower hemoglobin levels found as a result of heart failure and a patient's quality of life. **Purpose–** It is known that hemoglobin levels have a direct impact on certain symptoms that heart failure patients express; however, we do not known to what extent this factor impacts the severity of symptoms that these patients experience. The purpose of this study is to determine whether New York Heart Association (NYHA) classification is effected more by the performance of the heart (represented by ejection fraction) or the anemic conditions that come as a result of heart failure. **Methodology–** This study is a retrospective chart analysis comparing kidney function, blood hemoglobin levels, and heart function. Patients included in the study had to have class II, class III, or class IV heart failure. Four data points were taken from the 323 patients included in the study: Ejection fraction, Hemoglobin level (hgb), Creatinine Level, and Glomerular Filtration Rate (GFR). These data points were then subjected to a series of statistical tests to determine the importance of each factor on the severity of symptoms in heart failure patients. **Results/Conclusions–** As hypothesized, hemoglobin levels were inversely proportionate to NYHA classification with levels significantly decreasing from 12.029 g/dL to 11.882 g/dL and to 11.798 g/dL with low standard deviations of 1.313, 1.32, and 1.389 for classes II, III, and IV, respectively (P< .01). Ejection fraction showed little correlation with expressed symptoms as seen by ejection fractions of 38.32%, 39.71%, and 33.68% for classes II, III, and IV, respectively (P<.01). Ejection fraction measurements also contained a high degree of variability (standard deviations of 12.524, 15.616, and 11.012 for class II, III, and IV, respectively). Kidney function also shadowed the NYHA classification as 85.6% of class II patients, 90.0% of class III patients, and 94.4% of class IV patients had a GFR under 60 ml/min/1.73 sq.m, showing that with increased NYHA classification came a larger percentage of the population with more severe kidney disease. This data suggests that patient's quality of life as measured by the NYHA classification system was most affected by kidney function and the subsequent lowering of hemoglobin levels while the physical performance of the heart as measured by ejection fraction does not correlate to the severity of symptoms that patients experience.

P62

Impact of Diabetes on mortality of patients with heart failure with reduced Left Ventricular function

A. Innasimuthu[1], G Rao[1], B Naronha[1], K Ckarke[1].

Background: Diabetes is a recognized risk factor for the development of congestive cardiac failure (CCF); however, little is understood about its effects on patients with established CCF. We wanted to assess the distribution of patients with diabetes in patients with CCF with Left Ventricular (LV) dysfunction. We also wanted to assess the mortality risk of diabetes in this group of patient. **Method:** This is a retrospective study looking at the heart failure register maintained during January 2004 to December 2005 in our hospital. We collected patients from the registry and selected patients who had echocardiographic evidence of LV dysfunction. We classified the cohort on the basis of diabetes and previous myocardial infarction. Diabetes mellitus was defined as hyperglycemia requiring previous or ongoing pharmacologic therapy. All patients were on the maximum tolerated medications according to the local and national guidelines. Their follow up period and their all cause mortality were noted. **Results:** There were 506 patients in the register (177 women, 329 men, mean age 73 years) with heart failure and reduced LV function followed up by the heart failure team. 43 (10%) patients were diabetic. 35 (7%) patients died during this period of which 3(9%) were diabetic and 40 (9%) were non-diabetic. On further analysis, there were 256 patients with no previous Myocardial Infarction (MI) and 250 patients with previous MI. In the group with no previous MI there were 20 diabetics of which 2 (10%) died and of the non-diabetics 18(8%) died. In the other group with previous MI, there were 23 diabetics of which 1 (7%) died and the other non-diabetics 14 (6%) died (all P=NS) **Conclusions:** 10% of the population with CCF with reduced LV function is diabetic. Half of the patients with CCF with reduced LV function have had MI in the past. Diabetes doesnot increase the mortality risk in patients with CCF with reduced LV function.

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Prognostic value of corrected QT interval and its correlation with cardiac Troponin T in non - ST- elevation acute coronary syndrome

SCL Llois Susana Claudia[1], FLG Gadaleta Francisco Leonardo[1], VAS Sinisi Víctor Alfredo[1], PA Avanzas Pablo[2], JCK Kaski, Juan Carlos[3]. [1]*Service of Cardiology, Eva Perón Hospital, Buenos Aires, Argentina* [2]*Asturias Universitary Hospital, Oviedo, Spain* [3]*Department of Cardiological Sciences,St. George's Hospital Medical School, London, United Kingdom*

Background and aims Corrected QT interval (iQTc) prolongation may have prognostic implications in patients with unstable angina. The present study aimed at evaluating the correlation between prolonged iQTc and cardiac troponin T(TnT) in patients(p) with non-ST-elevation acute coronary syndrome (NSTE-ACS). **Methods** This prospective study assessed 106 p (70% men, mean age 58±10 years) admitted to Coronary Care Unit(CCU) from May 22,2003 to March 02,2005; with NSTE-ACS. The QT interval (corrected using Bazett's formula) was measured in every p, at admission, 6,12,18,24 and 48 hs. iQTc values = or >0.450 sec in men and =or >0.470 sec in women, were considered to be prolonged. Cardiac TnT was measured in 98 p >6 hs after the last episode of angina: values =or > 0.04 ng/ml were considered positive. The combined end-point of death, non-fatal infarction and recurrent angina -considered to represent major clinical events (MACE)- was the study end-point. Follow up was carried out up to 30 days after CCU discharge. Patients were subdivided into two groups according to the presence (Group A=43 p) or absence (Group B=63 p) of MACE. Receiver operating characteristics (ROC) curves were constructed to establish the iQTc that represented the best cut off point with best sensitivity and specificity for MACE prediction. The correlation between admission iQTc, maximum iQTc (maximum iQTc defined as the longest of all the measurements in each p) values and cardiac TnT results of each group were assessed, as appropiate. Discrete data were assessed using the chi-square test with Yates' correction and quantitative data with the Student-t test. Data are presented as mean±SD. A p value of < 0.05 was considered to be statistically significant. Multivariate regression analysis was carried out (SPSS version 13,Chicago,Illinois) to identify independent predictors of MACE. **Results** 43/106 p (40.5%) had MACE (Group A) and 63/106 p(59.4%) did not have MACE (Group B). Thirty six p(87.7%) in Group A and 26 p (41.3%) in Group B had prolonged iQTc > or = 0.458 sec -**the best cut off point** of the ROC curves for MACE prediction (p<0.001). Mean maximum iQTc (iQTc-max) value was 0.502±0.06 sec in group A and 0.457±0.04 sec in group B (p<0.03). The correlation coefficient between cardiacTnT and iQTc-max was 0.38 (p<0.001). An iQTc value > or = 0.458 sec showed an area under the ROC curve of 0.752, sensitivity of 76.7% and specificity of 66.7% with a negative predicted value(NPV) of 80.8%. Interval QTc-max was an independent predictor of MACE in multivariate logistic regression analysis:OR=4.4 (IC: 1.7-11.2) p=0.002. **Conclusions** iQTc-max is an independent predictor of risk in patients with NSTE-ACS and correlates with cardiac TnT values.

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Children who fulfil current recommendation for physical activity are slimmer and have higher fitness level

M. Dencker[1], O. Thorsson[1], M.K. Karlsson[1], C. Linden[1], P. Wollmer[1], L.B. Andersen[2]. [1]*Dept of Clinical Sciences, Malmö University Hospital, Malmö, Sweden* [2]*Norwegian University of Sport and Physical Education, Oslo, Norway*

Objective: To evaluate if there are differences in risk factors for Cardiovascular disease between children who achieve and those who do not achieve current daily physical activity recommendation of minimum of 60 minutes of moderate to vigorous activity (MVPA) and 30 minutes of vigorous activity (VPA) per day. **Methods:** Cross-sectional study of 226 children aged 7.9–11.1 years from a middle-class urban area. Abdominal fat mass (AFM) and total body fat mass (TBF) quantified by Dual-Energy X-Ray Absorptiometry, TBF was also calculated as percentage of body mass (BF%). Maximal oxygen uptake (VO2PEAK) was measured during a maximal exercise test. Daily physical activity was assessed by accelerometers for four days, and daily accumulation of VPA and MVPA were calculated. Resting heart rate (HR) and blood pressure (SBP and DBP) were measured. **Results:** All children fulfilled the recommendation for daily accumulation of 60 minutes of MVPA prohibiting meaningful analysis.78% of boys and 59% of the girls performed more than 30 minutes of VPA per day. Table below display results according to fulfilment of physical activity recommendation of 30 minutes of VPA per day. **Conclusion:** In this cohort of children aged 8 to 11 years significant differences were detected for those who achieved current physical activity recommendation of 30 minutes of VPA per day and those who did not. Children who performed more than 30 minutes of VPA per day were slimmer and had higher fitness level.

	Boys (n=125)			Girls (n=101)		
	<30 min VPA	>30 min VPA	p-value	<30 min VPA	>30 min VPA	p-value
	(n=28)	(n=97)		(n=41)	(n=60)	
MVPA (min)	148±32	228±41	<0.001	166±35	207±31	<0.001
VPA (min)	21±8	52±17	<0.001	22±6	43±10	<0.001
TBF (kg)	8.7±7.6	5.7±4.0	0.005	9.9±5.9	7.1±4.4	0.007
BF%	20±12	15±8	0.01	26±9	20±8	<0.001
AFM (kg)	3.5±3.4	2.2±1.7	0.004	4.0±2.7	2.8±2.0	0.01
VO2PEAK(ml/min/kg)	38±8	42±7	0.01	34±6	37±6	0.05
HR (b/min)	82±11	80±11	0.4 ns	87±11	83±9	0.047
SBP (mm hg)	106±6	104±8	0.27 ns	105±9	105±9	0.83 ns
DBP (mm hg)	61±6	59±5	0.048	61±8	60±5	0.53 ns

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Body Fat, Abdominal fat and Body fat distribution related to Risk Factors for Cardiovascular Disease in Young Children

M. Dencker[1], O. Thorsson[1], M.K. Karlsson[1], C. Linden[1], P. Wollmer[1], L.B. Andersen[2]. [1]*Dept of Clinical Sciences, Malmö University Hospital, Malmö, Sweden* [2]*Norwegian University of Sport and Physical Education, Oslo, Norway*

Background: Obesity is associated with increased risk of cardiovascular disease in adults and less favourable cardiovascular risk factor status in children. These relationships have not been extensively studied in young subjects with the use of objective methods. **Methods:** Cross-sectional study of 170 (92 boys and 78 girls) children aged 8–11 years, recruited from a population-based cohort. Total body fat mass (TBF) and abdominal fat mass (AFM) were measured by Dual-energy x-ray absorptiometry. TBF was also expressed as percentage of total body mass (BF%). Body fat distribution was calculated as TBF/AFM. Maximal oxygen uptake (VO2PEAK) was assessed by indirect calorimetry during maximal exercise test. Blood was sampled and blood pressure (BP) measured. Echocardiography, 2-dimensional guided M-mode, was performed in accordance with ASE-guidelines. Left ventricular mass (LVM) was calculated and adjusted for height. Maturity evaluated according to Tanner. Variables analysed were BF%, AFM, AFM/TBF, lipoprotein concentrations, systolic and diastolic BP, LVM and VO2PEAK. **Results:** Mean BF% was 18.8±8.9% (range 6.2–44.7%). Significant univariate correlations ($P<0.05$) between ln BF% and selected variables; VO2PEAK (r=-0.47), LDL/HDL quotient (r=0.34), systolic BP (r=0.32), ln HDL (r=-0.23), ln LDL (r=0.18), ln total cholesterol (r=0.17), diastolic BP (r=0.16) and LVM (r=0.16). Between ln AFM and selected variables; VO2PEAK (r=-0.40), LDL/HDL quotient (r=0.34), systolic BP (r=0.38), ln HDL (r=-0.28), diastolic BP (r=0.17) and LVM (r=0.25). Between AFM/TBF and selected variables; VO2PEAK (r=-0.25), LDL/HDL quotient (r=0.34), systolic BP (r=0.32), ln HDL (r=-0.35), diastolic BP (r=0.16) and LVM (r=0.23). Multiple regression analyses with the inclusion of possible confounders such as age, gender and Tanner stage showed that the significant independent correlates for ln BF% were VO2PEAK, systolic BP, LVM, LDL/HDL quotient and gender. For ln AFM; VO2PEAK, systolic BP, LVM, LDL/HDL quotient and gender. For AFM/TBF; ln HDL, systolic BP and LVM. **Conclusion:** Findings from this population-based cohort of young children showed that total body Fat, abdominal fat, and body fat distribution were all associated with a less favourable cardiovascular risk factor status.

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Epidemiological Aspects of the Burnout Syndrome in professional cardiovascular nursing

J. Boggiano[1], R. Miret[1], D. Maggio[1], A. Bantar[1], I. Perdomo[1], M. Medina[1], M. Lavalle[1], E. Moya[1], N. Bravo[1], H. Macazana Trucios[1]. [1]*Interamerican Research Group of Nursing and Health*

Background: Burnout Syndrome is claimed to be the most probable cause of the lack of motivation suffered by professional cardiovascular nursing nowadays. This suggests that the syndrome may be linked to the high levels of absrnce from work among this professional group. The study aims to provide a number of descriptions of the universal epidemiological variables that would allow us to draw up a risk profile for this profession. **Material and method:** We studied a random sample of 307 professionals in which we applied the Burnout Syndrome measurement instrument (Maslach Burnout Inventory) which was self-administered. Descriptive statistics were gathered with a comparison of average values for socio-demographic variables ($P<0.05$) using Epiinfo V.60. **Results:** We obtained 87.76% responses compared with 12.23% losses. This sample gave us a 95% reliability level with a 5% error margin. We obtained significant differences in line with sex, age, marital status, length of service in the workplace, number of workers, place of work, number of patients under their responsibility, weekly working hours, patient interaction time. The Burnout average was 47.16 " 7.93, with the highest proportions corresponding to emotional fatigue and lack of self-fulfilment. **Conclusions:** The epidemiological risk profile obtained would be as follows: a female, over 40 years old, with no stable partner, with more than 10 years service in the profession and more than 5 at that particular workplace, working in a specialised department, with more than 3 patients under her responsibility, devoting more than 80% of the working day to these patients and with a working week of 36–48 hours

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Effect of early education on patient anxiety while waiting for cardiac catheterization

J. Boggiano[1], A. Zichert[1], D. Maggio[1], H. Macazana Trucios[1], A. Incarbone[1], R. D'agosto[1], R. Dominguez[1], G. Bulacio[1], N. Crozzoli[1], M. Bertoli[1]. [1]*Interamerican Research Group of Nursing and Health*

Background: A supply–demand mismatch with respect to cardiac catheterization (CACA) often results in patients experiencing waiting times that vary from a few weeks to several months. Long delays can impose both physical and psychological distress for patients. **Purpose:** The purpose of this study was to examine the effect of a psychoeducational nursing intervention at the beginning of the waiting period on patient anxiety during the waiting time for elective CACA. **Material and method** This was a 2-group randomized controlled trial. Intervention patients received a nurse-delivered, detailed information/education session within 2 weeks of being placed on the waiting list for elective CACA. Control group patients received usual care. **Results:** The mean waiting time for CACA was 14.2±6.2 weeks, which did not differ between groups ($P=0.509$). Anxiety increased in both groups over the waiting time ($P=0.028$). Health-related quality of life deteriorated over the waiting time in both groups ($P<0.05$). On a visual analogue scale, there was a significant difference ($P=0.002$) between the intervention (4.0±2.7) and control (5.2±3.0) groups in self-reported anxiety 2 weeks prior to CACA. **Conclusions:** The waiting period prior to elective CACA has a negative impact on patients' perceived anxiety and quality of life and a simple intervention, provided at the beginning of the waiting period, may positively affect the experience of waiting.

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Workplace stress factors perceived by the nurses, who work in those areas of the hospital concerned with heart-lung transplants

J. Boggiano[1], R. Miret[1], D. Maggio[1], M. Medina[1], M.E. De La Antonia[1], N. Acuña[1], F. Rotemberg[1], D. Chaparro[1], C. Ortiz[1], S. Castelar[1]. [1]*Interamerican Research Group of Nursing and Health,*

Objective: To determine the workplace stress factors perceived by the nurses, who work in those areas of the hospital concerned with heart-lung transplants and the sources of professional job satisfaction. **Methods:** Qualitative study, carried out with twenty-five discussion groups (327 participants in all) of male and female nurses, who work in different hospitals of latin america. Their conversations were transcribed and an analysis of the discourse was undertaken. **Results:** The main stress factors which were identified relate to: work overload and the time pressures, contact with death and suffering, a lack of support from colleagues and other health professionals, and the problems of inter-relationship with patients and their relatives. Likewise there is clearly a lack of sufficient information to be able to respond to the questions posed by the patients and family members as to their clinical state and their prognosis. Another stress factor is the lack of specific information relating to the characteristics of necessary care for the patient pre and post transplant. The principal source of professional job satisfaction is the thanks for the care which has been afforded to them, from patients and their families. **Conclusion:** The hospital nursing staff is subjected to a large number of stress factors in the course of its work, the majority of which are intrinsic to its profession.

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CORRECTED QT INTERVAL MEASUREMENT IN PATIENTS WITH NON-ST ELEVATION ACUTE CORONARY SYNDROME AND T-WAVE ABNORMALITIES: ANY ADDITIONAL CLINICAL VALUE?

FL Gadaleta[1], SC Llois[1], VA Sinisi[1], P Avanzas[2], JC Kaski[2]. [1]*HIGA Eva Peron, Buenos Aires, Argentina* [2]*St. George's Hospital, London, UK*

Background and objective In subgroups of patients with non-ST elevation acute coronary syndrome (NST-ACS) T-wave abnormalities may have prognostic implications. Corrected QT interval (iQTc) measurements have been also suggested to correlate with patient outcome. We assessed whether iQTc assessment in patients admitted with NST-ACS and abnormal T-waves has any additional clinical value. **Methods** We prospectively assessed 211 consecutive patients (72 women; mean age 68 y) admitted to the coronary care unit with NST-ACS and 152 (50 women, mean age 57 y) matched healthy individuals (controls). NST-ACS patients were subdivided in two groups: Group A (N=90) comprised patients with a typical negative T-wave ≥2mm; Group B (N=121) comprised patients with non-diagnostic T-wave changes i.e.: negative T-waves <2mm (N=17), flat T-waves (N=32) and normal T-waves (N=72). iQTc was measured on the 12-lead ECG at hospital admission and at 6, 12, 18 and 24 hours, and corrected by Bazett's formula. iQTc ≥0.45 sec in men and ≥0.47 sec in women were considered abnormal. The composite of death, non fatal myocardial infarction and need for urgent coronary revascularization, was considered to represent clinical end point. Patients were followed for up to 30 days after hospital discharge. **Results** NST-ACS patients had a longer iQTc (0.466 sec) than controls (0.406 sec) ($p<0.0001$). In both Group A and B, patients with a prolonged iQTc had a higher incidence of clinical events: 92% (in Group A) and 71% (in Group B) compared to patients with a normal iQTc: 30% (in Group A) and 32% (in Group B) ($p<0.0001$). Cox regression analysis showed that a prolonged iQTc was independently associated with increased risk, OR=7.9 (95%CI, 3.7–1.2); sensitivity, 72.4% and specificity, 79.3%. The best cut-off point was established at 0.452 sec. **Conclusion** iQTc is significantly prolonged in NST-ACS patients and represents an independent marker of risk even in patients with T wave abnormalities.

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Scientific production spilt in symposiums of cardiovascular nursing in Argentina

J. Boggiano[1], R. Miret[1]. [1]*Interamerican Research Group of Nursing and Health*

Objective: To analyze the scientific production spilt in symposiums of cardiovascular nursing in Argentina from May, 2002 up to June, 2007; determining the qualitative and quantitative characteristics of the articles. **Material and method:** A bibliometric, descriptive, longitudinal and retrospective analysis was conducted for a 5-year period (2002–2007). The population object of study they were all the articles published in the simposios of cardiovascular nursing in Argentina. Both quantitative and qualitative methods were used to study productivity and collaboration and to conduct an analysis on the subject, respectively. A previously agreed upon and standardised manual revision was carried out as a technique for data retrieval. Descriptive statistics and Statistical Inference indexes (Chi square and simple linear regression analysis) were used for quantitative analysis. The data were processed using the SPSS 10.0 statistical package **Results:** The average number of articles published per issue was 9.2 (SD: 1.02), with a tendency towards an increase (r=0.81, p=0.000). 37% of authors were from the hospital setting. The autonomous region with the highest production output was Buenos Aires city (44.6%). 53.6% of the articles were undersigned by one single author. The overall collaboration rate was 2.29, which steadily increased over the five years of study. The area of knowledge most widely written about was interventional cardiology of Nursing (49.4%); by another hand,

a 27.2% were research articles (this articles have increased significantly over the period under study). **Conclusions:** the increase in the number of articles, specially of research, as well as in the increase of the index of collaboration, reveals that the quality of the analyzed articles is good, with an steady improvement over the 5 years since it was first released in the market. On the other hand, there is still a rather high percentage of papers undersigned by one single author, which, in a way, appears to indicate a rather artesian scientific practice

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THE VIRTUAL HEART: ART AND SCIENCE

J. Reynolds[1], C. Salazar[2], J. Vega[3], A. Castellanos[4].

Antecedents The AV nanobridge project has a purpose, to make a nanometrical device to avoid the AV blockades. At 2005, it was born a new Project by two medical students; "The Virtual Heart", where his objective was to make an understandable presentation for any professional area. **Objectives** 1 Sustain the functionality and the benefits of the AV nanobridge project 2 Collaborate with the educative process to the medical students. 3 Elaborate a tutorial to the cardiologist where involves the understanding of a pathology and the accomplishment of an invasive procedure 4 Make preventional disease program and health promotion to primary and high school students. 5 Teach to general population about this organ in a simple and specific way, to improve medical-patient relationship. 6 Analize the new experimental molecules and the already existing ones. 7 Create mechanical artificial system test. 8 Interact between the enviromental damage and virtual heart. **Methods** The project consists of different phases: first, it's about the design of the normality of the heart. Second, elaborate the cardiac pathology. Third, the simulation of the quirurgical interventions. The fourth phase, explains the interaction of new pharmaceutical molecules and the cell; the fifth phase, recreates atmospheres of different characteristics and its physiological changes from this organ. The sixth phase is an implementation of the new learning system. The last one, it's about to educate the general population. **Results** At the moment we have the 80% from the molecular area, while embryology has 50%. The morphology area has the 20%. On the other hand we have two books from these topics. **Conclusions** It projects is in process do not have definitive conclusions.

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Determinants of hospital length of stay in patients admitted with acute heart failure.

R. Bagnati[1], P. Ledesma, N. Vulcano, S. Fernandez, C. Belziti.

Heart Failure Unit. Hospital Italiano de Buenos Aires. Argentina **Background:** the social and economic importance of length of stay (LOS) in hospitalized patients with acute decompensated heart (ADHF) need not be stressed. Identification of determinants that may prolong the LOS is essential information for health care givers. **Objectives:** to determine demographics, clinical and seric variables associated with longer period of hospitalization in patients admitted with ADHF. **Methods:** data of 200 patients admitted consecutively with ADHF in the Coronary Care Unit were prospectively collected. Prolonged hospitalization was defined when LOS was above the median of the whole population. Chi2 test for categorical variables, and t-test or Wilcoxon rank-sum test for continuous variables were used. Multivariate analysis by logistic regression was used to identify determinants of prolonged LOS. **Results:** the cohort consists of 43 % women, mean age 78 years, mean ejection fraction 36 %, ischemic etiology 38 %, atrial fibrillation 21 %, COPD 15 %, chronic renal failure 17 % (seric creatinine level >2.0 mg/dL), diabetes 24%. Median LOS 5 (4–8) days. In univariate analysis patients with prolonged LOS (> 5 days) were older (mean age 84 vs. 75.5 years), more likely to have diabetes (23 vs. 14 %), with higher seric creatinine level (mean 2.1 vs 1.6 mg/dL) with lower sistolic arterial pressure on admission (mean 104 vs. 112 mmHg) and higher BNP seric levels (mean 1690 vs.985 pg/mL) compared to patients with shorter LOS ($p<0.05$). In multivariate analysis the variables associated with statistical significance ($p<0.05$) with prolonged LOS were: age (OR: 1.05/ year, 95% CI: 1.01–1.06), diabetes (OR: 1.6, 95% CI: 1.3–2.1) and chronic renal failure (OR: 2.0, 95%, CI: 1.7–2.4). **Conclusions:** these data clearly indicate that prolonged LOS is closely related to clinical characteristics and comorbidities of the patients. This information must reach health care givers to elaborate programs directed to these populations.

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Predictors of acute impairment in renal function in patients admitted with acute decompensated heart failure.

P. Ledesma , R. Bagnati, N. Vulcano, S, Fernandez, C. Belziti.

Heart Failure Unit. Hospital Italiano de Buenos Aires. Argentina **Background:** acute decompensated heart failure (ADHF) is an important cause of hospital admissions and is associated with an increased risk for development of acute impairment of renal dysfunction (ARD), prolonged hospitalization and worse prognosis. **Objectives:** to assess the prevalence and predictors of ARD in patients admitted in the Coronary Care Unit (CCU) for ADHF. **Methods:** the clinical data of 200 consecutively patients admitted with ADHF in CCU were prospectively collected. ARD was defined as an increase in seric creatinine level (CR) more than 0.5 mg/dL compared to the admission value. Chi2 test for categorical variables, and t-test or Wilcoxon rank-sum test for continuous variables were used. Multivariate analysis by logistic regression was used to identify predictors of ARD. **Results:** 43 % were women, mean age 78 years, 51% had preserved left ventricular function (ejection fraction >50 %), 38 % ischemic etiology, 21 % atrial fibrillation and 24% diabetes. Mean CR was 1.57± 0.6 mg/dL and mean glomerular filtration rate (GFR) estimated using the abbreviated MDRD formula was 59.5 ml/min/1.73 m2. Eighty-two percent of patients had some degree of renal dysfunction on admission (GFR<90 mL/min/1.73 m2), and 55% had moderate or more severe renal dysfunction (GFR<60mL/min/1.73m2). Forty-eight patients (24%) developed ARD. In multivariate analysis patients older than 80 years (OR: 1.6, 95% CI: 1.1–1.8), FGR<60 mL/min/1.73 m2 (OR: 1.5, 95% CI: 1.1–1.8) and systolic arterial pressure lower than 90 mmHg (OR: 1.7, 95%, CI: 1.2–2.1) on admission emerged as independent predictors of ARD ($p<0.05$). **Conclusions:** ARD is a common complication in patients hospitalized for ADHF. Clinical characteristics present at the time of admission help identify patients at increased risk for ARD.

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Influence of atrial natriuretic peptide treatment on cardiovascular and renal nitric oxide system in spontaneously hypertensive rats

M.A. Costa[1], D. Rodríguez Ierace[1], R. Elesgaray[1], M.F. Visintini Jaime[1], C. Caniffi[1], A.M. Balaszczuk[1], C. Arranz[1]. [1]*Faculty of Pharmacy & Biochemistry. University of Buenos Aires. IQUIMEFA-CONICET. Argentina.*

Introduction: We have previously demonstrated that nitric oxide (NO) system mediates atrial natriuretic peptide (ANP) hypotensive, natriuretic and diuretic effects in normotensive rats. We also showed that ANP would stimulate NO synthase (NOS) activity interacting with natriuretic peptides receptors NPR-A/B, increasing cGMP, and/or NPR-C, coupled via G protein, which activates Ca2+-calmodulin dependent NOS. **Objective:** The aim of the present study was to investigate the effects of chronic ANP infusion on systolic blood pressure (SBP) and cardiovascular and renal NO system in spontaneously hypertensive rats (SHR). **Methods:** 16-weeks old SHR and normotensive Wistar-Kyoto rats (WKY) were infused subcutaneously (osmotic pumps) with saline (NaCl 0.9%) or ANP (100 ng/hour.rat), during seven days. SBP was recorded and nitrites and nitrates excretion (NOx, metabolic end products of NO) were determined during the experimental time. At the end of this period, the animals were sacrificed by decapitation and NOS activity (using [14C] L-arginine as substrate) were determined in aorta artery (A), right atria (RA), left ventricle (LV) and renal medulla (M) and cortex (C). **Results:** Chronic infusion of ANP diminished SBP (WKY= -13±3 vs SHR= -25 ± 10 mmHg, ns) and increased NOx (WKY = 41 ± 10 % vs SHR = 23 ± 4 %, $p<0.01$) in both groups. ANP increased NOS activity in all studied tissues in both groups but the enzyme stimulation was more marked in WKY than SHR. (A: WKY= 51 ± 4 % vs SHR = 40 ± 3 % *; RA: WKY = 46 ± 4 % vs SHR = 38 ± 3 %*; LV: WKY = 41 ± 3 % vs SHR = 30 ± 4 % *; C: WKY = 38 ± 4 % vs SHR = 27 ± 3 % *; M: WKY = =30 ± 3 % vs SHR = 25 ± 2 % *; * $p<0.01$) **Conclusions:** These results would suggest that up-regulation of cardiovascular and renal NO-system is a compensatory mechanism for the elevation of systolic blood pressure during the development of hypertension in SHR. The chronic treatment with ANP increased the activity of this system associated with a decrease in arterial blood pressure. The impaired response to ANP of cardiovascular and renal NO system in hypertensive animals, would be one of the mechanisms involved in the development and/or the maintenance of the high blood pressure in this model of genetic hypertension.

TABLE: NOS ACTIVITY (PMOL/G TISSUE.MIN) INDUCED BY SALINE OR ANP IN WKY AND SHR ANIMALS

	WKY + Saline	WKY + ANP	SHR + Saline	SHR + ANP
Aorta artery	205 ± 12	313 ± 15 *	339 ± 16 #	474 ± 18 *
Right atria	198 ± 11	289 ± 10 *	321 ± 15 #	444 ± 19 *
Left ventricle	212 ± 14	506 ± 26 *	327 ± 16 #	425 ± 20 *
Renal cortex	289 ± 15	400 ± 17 *	468 ± 19 #	595 ± 23 *
Renal medulla	388 ± 18	506 ± 26 *	594 ± 25 #	742 ± 29 *

* $p<0.01$ vs saline infusion same group, # $p<0.01$ vs WKY + saline.

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Most frequent symptoms and extension of coronary artery disease in women with acute coronary syndromes

C. N. Crudo Norma[1], P. A. Piombo Alfredo[1], V. L. Vidal Luis[1]. [1]*Htal. Dr. Cosme Argerich–Servicio de Cardiología*

Objective: To establish the most frequent prodromal symptoms of myocardial ischemia and to evaluate the extension of coronary artery disease(CAD) in women with acute coronary syndromes(ACS). **Methods:** 174 patients(p) with diagnosis of ACS were classified according to age into: a)Group 1(G1) < 55years:68p ; b) Group 2(G2) 55 to 75 years: 69p; c)Group3(G3):>75years:37p. We searched the most frequent symptoms referred by the p at admission to the Coronary Unit. According to the coronary arteriography the p were considered as: with CAD(145p) when they presented coronary lesions (CL) >70% and /or main left coronary artery (LCA) lesion >50%; and without CAD (29p) in the absence of significant coronary lesion (CL) **Results:** Mean age was 60,8+-12years; p with CAD 61,1+-11 years, and p without CAD 56,8+-7years. The prevalence of the most frequent symptom presented by each group were : Angina (47%) p:NS among the groups; shortness of breath (30%), G1(7%) vs G3(70%) p<0,001; pain in the back (29%), G1(41%) vs G3(16%)p<0,05; pain in neck / throat (22%), G1(31%) vs G3(6%) p<0,05; atypical thoracic pain (21%), G1(26%) vs G3(8%) p<0,05; unusual fatigue (18%) G1(4%) vs G3(43%) p<0,02. Extension of CAD in the 174 p : wihout CAD (17%), G1(32%) vs G3(0%) p<0,001; 1 CL (30%); 2 CL (20%); 3 CL / Main LCA (33%) p:NS among the groups. **Conclusion:** 1) Angina was the most frequent symptom in the general population. 2)The p of G1 had high prevalence of : a)pain in the back, b)pain in neck / throat, and atypical thoracic pain. 3) More frequently the p of G3 referred shortness of breath and unusual fatigue. 4) The p of G1 presented higher prevalence of absence of CAD and similar prevalence of 3 CL / main LCA lesion than the other groups, 5) No patients without CAD belonged to G3.

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Coronary artery calcification in elderly adults over 80 years old: does it have any role in the pre-operation determination of ischemic heart disease?

Masahiro Tamashiro[1], Yuu Nomura[1], Toshiya Chinen[1], Atsushi Kakazu[1], Kageyuki Ohba[1], Naoya Maehira[1], Akira Kakazu[1], Masanori Kakazu[1], Osamu Arasaki[1], Tetsuji Shinjo[1]. [1]*Tomishiro Chuo Hospital*

Background: Risk factors measured late in life have rather poor discrimination for determining highest risk of coronary artery disease in old age. We evaluated usefulness of coronary artery calcium score (CACS) to assess ischemic heart disease(IHD) in elderly adults scheduled for orthopedic surgery. **Methods:** 81 consecutive orthopedic surgery patients(mean age 83years old) evaluated coronary heart disease by coronary angiography or non-exercise stress test(myocardial perfusion imaging using thallium-201 or dobutamine stress echocardiography) were enrolled. IHD positive was defined as the presence of significant coronary stenosis in CAG or positive response in non-exercise stress test. Coronary risk factors and CACS were compared between IHD positive group (IHD group) and IHD negative group(non-IHD group). CACS were evaluated by using 64-slice computed tomography in all patients. **Results:** There was no significant difference in terms of age, gender, family history of IHD, diabetes, and hypertension between two groups. Prevalence of hyperlipidemia(40% vs 12%, $p=0.003$) and smoking history(23% vs 2%, $p=0.002$) were significantly higher in IHD group. Mean CACS was significantly increased in IHD group(1183 vs 457points, $p<0.001$). In patients CACS>1,000points, 71% patients resulted in IHD positive. **Conclusion:** CACS is useful marker for pre-operative risk determination of IHD in elderly patients. While further data is needed, this observation may have clinical importance.

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Early Outcomes of Direct Carotid Artery Stenting without Predilation in High-Risk Patients: Analysis of a Single-Center Registry

J. Veselka[1], D. Černá[1], P. Zimolová[1], M. Šramko[1], A. Tomek[2], M. Šrámek[2]. [1]*CardioVascular Center, University Hospital Motol, Prague, CZ* [2]*Dpt. of Neurology, University Hospital Motol, Prague, CZ*

Background: Implantation of carotid artery stent after predilation is a standard approach in the endovascular treatment of carotid artery stenoses. Stenting without predilatation offers an alternative way to treat a certain subset of patients. **Methods:** The present prospective, single-center registry, was designed to evaluate the feasibility and safety of direct carotid artery stenting (DCAS) in patients at high risk for carotid endarterectomy. Inclusion criteria were a symptomatic carotid artery stenosis > 50% or an asymptomatic stenosis > 70%. Clinical criteria for high-risk patients included : age >79 years, significant contralateral carotid artery stenosis or occlusion, previous endarterectomy, ongoing cerebral ischemic event, need for open heart surgery, multivessel coronary artery disease, history of open heart surgery or myocardial infarction, severe pulmonary disease or renal insufficiency, all in accordance with NASCET trial registry exclusion criteria. **Results:** A total of 128 consecutive patients (71 males, 68±9 years, 28% symptomatic) underwent 154 procedures, and 159 stents were deployed successfully. All scheduled procedures were performed with use of the filter protection devices. The primary technical success rate of DCAS was 98 %. Predilatation of carotid artery stenosis was necessary in 2 (1.3%) procedures among of all. The stenoses rate before and after DCAS were 80% and 6 %, respectively. The median of fluoroscopic time of DCAS was 7 min (3–30 min). The number of in-hospital major adverse cerebrovascular events (death, stroke or myocardial infarction) was 1.9% (3 cases). All these stent procedures resulted in a minor stroke, so that full recovery occurred within one week. There was one myocardial infarction and one minor stroke (1.2%) within 30-day follow-up without subsequent clinical consequences. The overall 30-day occurrence of adverse events was 3.2%. **Conclusion:** It is the first series of high-risk, consecutive patients treated by DCAS. This endovascular approach seems to be feasible, safe and efficacious in the short-term follow-up. These results might encourage and support us to use DCAS in the majority of high-risk patients with significant carotid artery disease.

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Relation of ischemia-modified albumin to ST-segment resolution after reperfusion of acute myocardial infarction

A. Dominguez-Rodriguez[1], S Samimi-Fard[1], P Abreu-Gonzalez[2], MJ Garcia-Gonzalez[1], JC Kaski[3]. [1]*Department of Cardiology (Coronary Care Unit), University Hospital of Canarias, Tenerife, Spain.* [2]*Department of Physiology, University of La Laguna, School of Medicine, Tenerife, Spain* [3]*Head, Department of Cardiological Sciences, St. George's Hospital Medical School, London, United Kingdom.*

Background: Ischemia-modified albumin (IMA) is increased in patients with myocardial ischemia, after percutaneous coronary intervention (PCI) or in acute coronary syndrome. Likewise, ST-segment changes reflect myocardial rather than epicardial flow and hence yield prognostic information beyond that provided by coronary angiogram alone. It is not known, however, whether IMA could be an independent predictor of ST-segment resolution (STR). **Objectives:** the aim of this study was to investigate the association between admission IMA levels and STR after primary PCI. Methods: We studied 117 patients with a first ST-segment elevation myocardial infarction (STEMI) within 6 h of the onset of pain. Admission serum IMA concentration was measured using a validated assay. The worst single electrocardiogram lead before and 90 minutes after primary PCI was analyzed, and patients were divided into 2 groups according to the degree of STR: complete (>70%) or incomplete (< 70%). **Results:** of the 117 patients, 70 (59,8%) had complete STR, and 47 (40,2%) incomplete STR. Serum IMA concentrations were significantly higher in patients that had incomplete STR (0.383 ± 0.060 vs 0.297 ± 0.056 (A.U.); $p<0.001$). Moreover, IMA values were an independent predictor of incomplete STR even after adjustment for potential confounders (OR 2.34; 95% CI 1.20 to 4.64; $p=0.01$). **Conclusion:** the present study suggests a strong association between IMA levels and electrocardiographic signs of reperfusion in STEMI-patients treated with primary PCI.

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Do diabetic patients with acute myocardial infarction treated with thrombolytic therapy have a worse prognosis during long-term follow-up

B. Stefanovic[1], P. Mitrovic, Z. Vasiljevic, G. Matic, M. Radovanovic, N. Radovanovic, A. Karadzic, A. Milosevic, G. Krljanac, M. Dragovic. [1]*INSTITUTE FOR CARDIOVASCULAR DISEASES*

Background: Diabetic patients (pts) have a worse short-term prognosis after acute myocardial infarction. The purpose of this article was to estimate whether diabetic subjects with acute myocardial infarction treated with thrombolytic therapy have a poorer prognosis during long-term follow-up. **Method:** 1112 pts, male 79%, mean age 55.5±9.8 with acute myocardial infarction treated with thrombolytic therapy within 6 h and discharged alive were followed-up to 10 years. According to diabetes patients were divided into two groups: the 1st group of diabetic pts (n=197 pts); and the 2nd group of non-diabetic pts (n=915 pts). There were no significant differences between groups in time to treatment, hypertension, infarct location, heart rate and blood pressure on admission, peak CK level, and TIMI flow at discharge. Significant differences between groups were found in age (diabetics were older), gender (more women in the diabetes group); smoking (less frequent in the diabetes group), previous infarct (more frequent in diabetics), Killip class (more with Killip class >1 in the diabetes group); left ventricular echo parameters (EDV, ESV, EDD, ESD) greater in diabetics; left ventricular EF (lower in diabetics); number of diseased coronary vessels at discharge (more vessels in diabetics). **Results:** During 10-year follow-up (median 6.8 years) 254 (22.8%) pts died: 63 in the 1st, and 191 in the 2nd group: 31.97% vs. 20.87% ($x2=11.34$, $p=0.001$). Cox regression analysis after adjustment with age and gender showed that diabetes was independent predictor of survival (OR 1.43, 95% CI 1.075–1.908, $p=0.014$). Kaplan-Meier curves comparing two groups differed significantly (log rank 11.62, $p=0.0007$). Cumulative probability of survival after 10-year follow-up in the 1st and the 2nd group was 61.8±3.9% and 74.0±1.7% consecutively. **Conclusion:** Diabetic patients had a worse 10-year survival than those without diabetes. Diabetes is independent predictor of long-term survival of patients with acute myocardial infarction treated with thrombolytic therapy.

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Risk stratification in cardiac surgery: our experience

M. Silvero[1], G Solari, L Browne, D Bergerot, R Vallejo, E Badino. [1]*HOSPITAL SAN JUAN DE DIOS LA PLATA* [2]*HOSPITAL SAN JUAN DE DIOS LA PLATA* [3]*HOSPITAL SAN JUAN DE DIOS LA PLATA* [4]*HOSPITAL SAN JUAN DE DIOS LA PLATA* [5]*HOSPITAL SAN JUAN DE DIOS LA PLATA* [6]*HOSPITAL SAN JUAN DE DIOS LA PLATA*

Introduction: Risk stratification in cardiac surgery with additivesScores can be validating for different population. **Purpose:** to compare and to validate EuroSCORE (ES) and Parsonnet (PS) in the population who underwent cardiac surgery in the San Juan de Dios Hospital in La Plata, Buenos Aires, Argentina; between the 2 of January and 30 of December of 2004. **Research design and methods:** 332 clinical histories were analyzed and EuroScore y Parsonnet were registered. Risk groups assigned: Group 1 Low risk (ES 0–1, PS 0–4), Group 2 Increased risk (ES 2–3, PS 5–9), Group 3 Significantly increased risk (ES 4–5, PS 10–14), Group 4 High risk (ES 6–7, PS 15–19) and Group 5 Significantly High risk (ES ≥8, PS ≥20); with predicted mortality of 1%, 5%, 9%, 17% and 31% respectively.Data base EPI-Info 6.0 and statistical analysis A.U.R.O.C. (Area Ander the Curve Receiver Operating Characteristic). **Results:** Both A.U.R.O.C. present an area greater than 0.8 then their discrimination capacity are valid for the studied population. They are specific. Nevertheless sensitivity for each group of risk is not similar: group 1, 2 y 3 have low sensibility and group 4 and 5 have high sensitivity. **Conclusion:** although the area corresponding to Parsonnet score is greater, we also have in consideration that EuroSCORE it has an easy calculation. The studied population presents differential sensitivity for each risk stratification group.

RISK FACTORS CHARACTERISTIC

Risk factor	H.S.J.D. (%)	Euro (%)	STS (%)
Age	55	62.5	64.6
Female	22.8	27.8	30.9
COPD	19.5	3.9	15.4
Pulmonary hypertension	13.5	2	5.7
L.V.E.F. 30–50%	16.5	25.6	37.8
L.V.E.F. <30%	2.4	5.8	5.2
Unstable angina	23,2	8	21.7
Recent myocardial infarct	9	9.7	20.9
Diabetes	20.2	17	30
Arterial hypertension	75	41.9	53.4
Obesity	12.6	3.2	23
Trunk injury or equivalent	48*	20	9.3

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Low risk cardiovascular profile patients seems to have high risk atherosclerotic plaques. Identification of atherosclerotic plaques in asymptomatic patients with 64 channel MSCT.

A. Bayol[1], J. Vallejos[1], R. Obregon[1], M. Romero[1], R. Peloso[1], R. Gonzalez[1], W. Harvey[1], A. Zarza, J. Mazucco, J. Parras[1].

Introduction: Each year close to 20 million people in the world experience a heart attack and almost a half die from it. Current data inform that 50 percent of those individuals who died from a heart attack were not aware of their risk. Is well known that the principal pathologic process

underling most Acute Coronary Syndromes is the rupture of an atherosclerotic plaque, called unstable plaque. It has been observed that those plaques are generally higher in lipid content and not associated with a significant degree of luminal stenoses. **Objectives:** 1) To determine the presence and localization in the coronary tree of atherosclerotic plaques (AP) in subjects without symptoms, 2) To differentiate and to characterize the atherosclerotic plaques composition. **Methods:** 101 volunteers subjects without symptoms or previous diagnosis of Coronary Artery Disease (CAD) and a low cardiovascular risk profile, were evaluated with MSCT (Multi Slice Computed Tomography) of 64 channels. The diagnosis of AP was based on the detection of Coronary Artery Calcified Plaques (CACP) and Coronary Artery Non Calcified Plaques (CANCP) in the coronary arteries. One patient could not be studied because of impossibility of obtaining an appropriate venous access. Results: CT angiography was performed in 100 patients (75 male; mean age 49 ± 13 years). 1500 coronary segments were correctly evaluated. The mean Coronary Calcium Score (by Agatston) was 98.6. Fifty five patients (55%) were identified as having at least one AP. The coronary artery stenosis was < 50 % in 46 patients (83%) and > 50% in 9 patients (17%). The plaques were situated in the Let Main Artery in 24 % (14 NCP, mean stenosis of 8.3 %), and in the proximal segment of the Left Anterior Descendent (LAD) Artery in the 35.6 % (13 NCP, mean stenosis of 20 %). The group with AP had a mean age of 53.7 years vs. 42.2 years in the group without AP (p.: 0.0001): The first group has also Hypertension in 24% vs. 9% (p.:0.015) and previous diagnosis of dyslipidemia in 23 % vs. 4 %(p.:0.0011) in the second group. **Conclusions:** The MSCT of 64 detectors detected coronary atherosclerotic plaques in 55 % of asymptomatic low cardiovascular risk patients. More than a half of these plaques might match the profile of unstable plaques.

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Anterograde Utilization of Intraaortic Balloon Pump

R. Levin[1–2], M. Degrange[3–2], R. Porcile[1], F. Salvagio[1], N. Blanco[1], A. Botbol[1], C. Del Mazo[3–4], E. Tanus[5]. *[1]Universidad Abierta Interamericana Vanderbilt University [2]Hospital Naval Vanderbilt University [3]Universidad Abierta Interamericana [4]Universidad Abierta Interamericana [5]Universidad Abierta Interamericana [6]Universidad Abierta Interamericana [7]Hospital Naval IMOS [8]Hospital Frances*

Background: The usual site for implantation of an intraaortic balloon pump (IABP)is the retrograde femoral route. Sometimes this access is not feasible, for contraindications or impossibility to progress, having to consider another routes of implant, being the anterograde one through the subclavian artery the first alternative option. The objectives of this study were: 1)To stablish the frecuency of the anterograde implant of the IABP, 2) To determine the contraindications for retrograde access(indications of subclavian use)and 3)To consider the morbidity associated with its utilization, comparing with the conventional access. **Methods:** Patients(p) receiving an IABP between 01/01/1998 and 01/01/2007 were included. Those p under anterograde implant were the subject of the study, being considered the rest as a control group for comparissons. The contraindications for retrograde access were: presence of an abdominal aortic aneurysm(AAA), previous aortobifemoral bypass, aortic endoprosthesis or angiographic documentation of subocclusive iliofemoral obstructions. If it resulted impossible to progress the catheter after three attempts(failure to progress)the alternative route was considered. A p value <0.05 was considered significant. **Results:** A total of 847 devices were implanted with 26 of them inserted through the anterograde route(3.1%). The contraindications for retrograde use were: AAA in 13 p(50%), previous aortobifemoral bypass in 5 cases(19.2%), presence of an aortic endoprosthesis in 1 p(3.8%) and failure to progress through the femoral access in 7 cases (26.9%).The general characteristics of the groups under anterograde and retrograde implant were comparable with the exception of an increased rate of prior peripheral vascular surgery: 11p(42.3%) vs 99p(12.1%, P=0.000006) and the presence of intermittent claudication: 10p(38.5%) vs 75p(9.1%, P=0.000001) in the anterograde one. Fifty four p presented complications linked to the device's use (6.4%): one p in the anterograde group (3.8%, limb ischemia) versus 53 p in the retrograde group (6.5%, P=NS). The total mortality was 135 p(15.9%) with 3p died(11.5%) in the anterograde group and 132 ones in the retrograde group (16.1%, P=NS). **Conclusions:** A 3.1% of the IABP's implants were done through the anterograde route. The most frequent contraindication for the retrograde use was the presence of an AAA (50% of the cases). The morbidity associated with the anterograde use was similar to those observed with the femoral implant. The anterograde subclavian access result a real alternative option for those patients requiring an IABP and in whom the femoral route is not feasible.

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Relation between the VEGF Level and Myocard Ischemia in Patients with Collateral Vessels and Single-Vessel Chronic Total Occlusion

F. Arican Ozluk[1], O Badak, A. Sýsman, G. Capa Kaya, H Bozkurt, S Guneri.

Introduction and aim: Coronary collateral vessel growth is a process which is mainly induced by myocard ischemia and contributed largely by Vascular Endothelial Growth Factor (VEGF). High level of plasma VEGF in patients with multi-vessel disease or collateral total occlusion and suffering from myocard ischemia episodes may provide valuable information about the diagnosis of ischemia. The aim of this study is to search the relation between the plasma VEGF levels and the diseases in patients with multi-vessel diseases and ischemic complaints and chronic single-vessel coronery artery patients provided with distal flow by collateral vessels. **Material and method:** Totally 71 patients, 30 of whom with single-vessel chronic total occlusion in which distal flow has been maintained by means of collateral vessels in the coronary angiography (KTO group), 20 of whom with significant narrowness in more than one coronary artery (CDH group) and 21 of whom with normal coronary artery as a control group were examined. Patients with non-cardio atherosclerotic disease were excluded from the study. Tc-99 m myocard perfusion scintigraphy was applied to the patients in the KTO group for the ischemia study. Patients who were found to have infarct after MPS were studied in terms of myocard activity by Talium 201. Plasma was obtained from peripheric blood samples in all patients in the day following angiography. VEGF plasma levels were examined with the ELISA method. **Findings:** The groups were similar in terms of basal patient characteristics. Only the group with normal coronary artery had less cigarette consumption than KTO group and there were more female patients in the first than the latter. The average VEGF value was detected as 6,2 ± 9,1 pg/ml in the total occlusion group, 6,1± 7,6 pg/ml in the normal control group and 13,4±23,7 pg/ml in the multi-vessel control group. No difference was found among the three groups in terms of VEGF values. (p=0,2). When those who were detected to have ischemia by MPS (n=12) and those who were detected to have infarct (n=12) in the CTO group were compared, no difference was found in terms of VEGF levels. (p=0,5). **Conclusion:** VEGF levels obtained from peripheric blood show no difference in coronary artery patients with or without angiographic collateral and in normal individuals. Therefore, plasma VEGF levels were found to have no value in the diagnosis of ischemic heart disease.

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Metabolic Syndrome Predicts Non-Elderly Onset in Patients with Acute Myocardial Infarction

T. Saikawa[1], M. Hara[2], T. Takakura[3], T. Ooie[4], T. Iwao[5], S. Shigematsu[6]. *[1]Department of Cardiovascular Medicine. Faculty of Medicine, Oita University [2]Department of Internal Medicine. Faculty of Medicine, Oita University [3]Department of Cardiology, Health Insurance Nankai Hospital3 [4]Department of Cardiology, Oita Medical Center4, [5]Department of Cardiology, Oita Red Cross Hospital5 [6]Department of Cardiology, Beppu Medical Center6*

Background: It has been reported that more than 70% of acute myocardial infarction (AMI) are caused by the disruption of unstable coronary plaques and that metabolic syndrome (MS) makes plaques vulnerable.**Objectives:** The aim of the present study was to elucidate the influence of MS on the early onset of AMI and angiographic coronary findings.**Methods:** The consecutive 339 patients (237 males and 102 females, mean 69 +/- 12 yrs) with AMI were enrolled retrospectively. They were classified into the non-elderly (under 65, n= 113) and the elderly (65 or more, n= 226) onset group. According to the angiographic morphology of the occlusive end, we classified the lesions into the stenotic (n= 176) type and the non-stenotic (n= 136). The relation between the risk factors and angiographic findings were analyzed. The diagnosis of MS was based on NCEP (ATP-III).**Results:** Multivariate analysis showed that the predictors of non-elderly onset were MS (OR=3.261,95%CI=1.654–6551; p=0.0007), smoking (OR=2.480,95%CI=1.432–4.327; p=0.0012), male (OR= 2.321,95%CI =1.202–4.647; p=0.00142), and hypercholesterolemia (OR=1.840,95%CI=1.029–3.302; p=0.0398). The predictors of non-stenotic occlusion were single vessel disease (OR=4.230,95%CI=2.550–7.147; p<0.0001), MS (OR=2.605,95%CI=1.464–4.715; p=0.0013), male (OR=2.177,95%CI=1.250–3.862; p=0.0067).**Conclusions:** The predictors of non-elderly onset of AMI were MS, smoking, male, and hypercholesterolemia. One vessel disease, MS, and male are significantly correlated with non-stenotic obstruction. We speculate it may partially depend on the early disruption of vulnerable plaques. Enough treatment for those with such risk factors to improve the plaques qualitatively would certainly contribute to the prevention of AMI.

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Predictors of successful ASA reistance suppression using dose escalation regimen in stable coronary artery disease patients.

M. Dominiak[1], T. Wcislo[2], A. Rozga[3], L. Figiel[4], J. Drozdz[5], M. Krzeminska - Pakula[6], J. Kasprzak[7]. *[1]II Chair and Department of Cardiology, Medical University of Lodz, Poland [2]II Chair and Department of Cardiology, Medical University of Lodz, Poland [3]II Chair and Department of Cardiology, Medical University of Lodz, Poland [4]II Chair and Department of Cardiology, Medical University of Lodz, Poland [5]II Chair and Department of Cardiology, Medical University of Lodz, Poland [6]II Chair and Department of Cardiology, Medical University of Lodz, Poland [7]II Chair and Department of Cardiology, Medical University of Lodz, Poland*

Purpose: Resistance to acetylsalicylic acid (ASA) is a relatively common clinical problem affecting treatment outcomes in patients with cardiovascular disease. There is no established management of ASA resistance in coronary artery disease (CAD) patients. We hypothesized that simple doubling the usual dose of ASA may be effective in suppressing ASA resistance. **Methods:** Study group consist of consecutive 40 patients with stable CAD (male 67.5%, mean age 60.5±8.8 years, mean height 1.72±0.06m, mean weight 80±8 kg, mean BMI 26.9±2.7 kg/m2), documented by coronary angiography, who used 75 mg/daily ASA for no less than last 7 days. All of them were resistant to ASA, which was defined as ARU≥550 (mean ARU 604.7 ± 32.6; aspirin resistance unit value obtained with point-of-care test - Rapid Platelet-Function Assay /RPFA). Immediately after diagnosis patients were switched to 150 mg/daily ASA. RPFA test was repeated after 4 weeks. According to the suppression of resistance or lack thereof in a repeated RPFA, 2 subsets of patients were defined: those who regained ASA sensitivity (ResSuprASA150) and those who failed (ResASA150). **Results:** Successful ASA resistance suppression after doubling daily ASA dose was observed in 62.5% patients. Linear regression identified 2 variables correlated with the difference between ARU level at 150 vs. 75 mg ASA: serum sodium (r=0.36, p=0.024) and white blood cell count WBC (r=0.40, p=0.011), the latter being the only independent predictor in the multivariate model (10.3 ARU change less per increase in WBC by $10^3/mm^3$). Finally, we identified the variables predictive for failure to convert the patient from resistant to non-resistant status: female gender (60% vs. 16%, p=0.012) and higher values of: initial ARU (mean 621 vs. 595, p=0.01), DBP (mean 88 vs. 80 mmHg, p=0.045), CPK (mean 176 vs. 96 mg/dl, p=0028), WBC (mean 8.37 vs. 6.83 x $10^3/mm^3$, p=0.039) and platelet count (164 vs. 227 x $10^3/mm^3$, - strong trend p=0,053). Multivariate analysis regression (p=0.0009 for model) confirmed that 2 variables independently determined successful ASA resistance suppression: male gender (OR 8,02; 95% CI:1,55–41,38, p=0,013) and ARUASA75 (OR 0.97 per unit at 75mg; 95% CI:0.94–0.997, p=0,029). Thus, dose increase success can be predicted by male gender and ARU<608 at 75mg ASA. The resistance suppression rate was 22 %, 56% and 93 % when 0, 1 or 2 above

factors were present (p=0,0004 for trend). **Conclusions:** Successful ASA resistance suppression by drug dose escalation can be more often achieved in male subjects with lower ARU value at ASA 75 mg. These pilot findings might have wide therapeutic implications if confirmed in a larger study.

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Accuracy of myocardial contrast echocardiography in predicting early and long-term outcome in patients with acute myocardial infarction

M. Olszowska[1], M Kostkiewicz[1], P Podolec[1], M Hlawaty[1], T Przewlocki[1], W Tracz[1].
[1]*Department of Cardiac and Vascular Disease, Institute of Cardiology, Krakow, Poland*

Background: The microvasculature damage after myocardial infarction has crucial implications. Myocardial contrast echocardiography (MCE) has recently emerged as a potentially useful method of studying myocardial perfusion in coronary artery disease and reperfusion after acute myocardial infarction. **Objective:** The present study to assess the role of MCE in predicting early and long-term outcome in patients with acute myocardial infarction after primary coronary angioplasty. **Methods:** Eighty-six patients (68 M, 18 F; mean age 58.4±11.2) underwent primary percutaneous coronary angioplasty (PCI) for acute anterior myocardial infarction (AMI). MCE and two-dimensional echocardiography were performed in all patients. Wall motion and segmental perfusion were estimated in real time before and immediately after PCI and on the third day after PCI using low MI after 0.3 ml bolus injection of intravenous Optison. MCE was scored semiquantitatively as: 1-homogenous contrast enhancement, 0.5- patchy contrast enhancement, 0- no contrast. Regional left ventricular function was reassessed after 3 months. Segments with improvement contractility was judged as viable. **Results:** The risk area was defined as the number of segments with no perfusion (minimal/absent opacification) before angioplasty. If MCE perfusion defect size after PCI >25% of the MCE perfusion defect size before PCI was used to define myocardial non-reperfusion. If MCE perfusion defect size after PCI < 25% of the MCE perfusion defect size before PCI was used to define myocardial reperfusion. As evidenced by MCE, 54 patients had reperfusion (reflow group), and 32 had non-reperfusion (no-reflow group). The death of patients only in patients with no-reflow group was observed. There were 2 hospital deaths (5and 6 day) and 2 late deaths (7.8month). Follow-up period was 4 –27 months, mean 34 months. During the follow-up time here were 80% cardiac event (death, restenosis, heart failure). 90% of segments without perfusion at the third day had hypokinesis, or akinesis after 3 months. 90% of segments with normal perfusion at the third day had normal wall motion at follow-up. **Conclusion.** Serial MCE is useful and accurate for identification of myocardial perfusion abnormalities in patients with AMI. The presence of perfusion within the infarct zone on third day after PCI predicts the maintenance of perfusion and recovery of resting systolic function. Absent myocardial viability detected by MCE was predictor of poor follow-up outcome in patients with acute myocardial infarction after primary coronary angioplasty.

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NT-proBNP measured on admission is well predictor early and long-term outcome in patients with acute myocardial infarction after primary coronary angioplasty.

M. Olszowska[1], M Kostkiewicz[1], P Podolec[1], M Hlawaty[1], W Tracz[1]. [1]*Department Cardiac and Vascular Disease, Institute of Cardiology, Krakow, Poland* [2]*Department Cardiac and Vascular Disease, Institute of Cardiology, Krakow, Poland* [3]*Department Cardiac and Vascular Disease, Institute of Cardiology, Krakow, Poland* [4]*Department Cardiac and Vascular Disease, Institute of Cardiology, Krakow, Poland* [5]*Department Cardiac and Vascular Disease, Institute of Cardiology, Krakow, Poland*

Background: N-terminal pro-brain natriuretic peptide (NT-proBNP) are released by ventricular myocytes in response to wall stress. Elevated levels of NT-proBNP can be detected in patients with symptomatic and asymptomatic myocardial ischaemia. Recently this peptide is a new marker for predicting risk in acute anterior myocardial infarction (AMI) The present study tested the hypothesis that elevated levels of NT-proBNP is well predictor early and long-term outcome in patients with acute myocardial infarction after primary coronary angioplasty. **Methods:** Eighty-sixt patients (68 M, 18 F; mean age 58.4±11.2) underwent primary percutaneous coronary angioplasty (PCI) for acute anterior myocardial infarction. Epicardial blood flow in infarct-related artery was evaluated by means of the TIMI grade flow (Thrombolysis in Myocardial Infarction) and corrected TIMI frame count (cTFC). Myocardial perfusion was assessed by means of the TMPG (TIMI Myocardial Perfusion Grade). Wall motion score index (WMSI), ST-segment resolution and segmental perfusion were estimated in real time before and immediately after PCI using low MI after 0.3 ml bolus injection of intravenous Optison (MCE). On admission to cath-lab plasma NT-proBNP were analyzed by enzyme immunoassay method. **Results:** The risk area was defined as the number of segments with no perfusion prior to PCI. A MCE perfusion defect size after PCI >25% of the MCE perfusion defect size before PCI was used to define myocardial non-reperfusion. As evidenced by MCE, 54 patients were classified as the reflow ones and 32 as no-reflow. For prediction of no-reflow phenomenon NT-proBNP of 330.6 pg/ml had sensitivity and specificity of 60% and 88% (based on ROC curve). The death of patients only in patients with no-reflow group was observed. There were 2 hospital deaths (5and 6 day) and 2 late deaths (7,8month). Follow-up period was 4 –27 months. Cardiac event-free survival within follow-up after successful coronary angioplasty (death, restenosis, cardiac failure) showed significant difference in patients with reflow and no-reflow group (90 vs 20%, p<0.008). **Conclusions:** MCE yields vital information about early and late outcome of coronary intervention in patients with AMI. The increase of plasma NT-proBNP identify patients at high risk.

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The impact of socioeconomic conditions on the evolution of chronic Chagas disease.

R. Viotti[1], C. Vigliano[1], M.G. Alvarez[1], B. Lococo[1], M. Petti[1], G. Bertocchi[1], A. Armenti[1].
[1]*Hospital Eva Perón*

The seronegative conversion during the evolution of chronic Chagas disease is the main criterion of cure and a prognostic indicator of favorable evolution for patients with the disease. However, the importance of the socioeconomic conditions (SEC) of the host has not been evaluated as a determinant of the persistence or the control of Chagas disease in the chronic phase. **Methods:** we designed a prospective study for adult patients with 3+ serological tests. The following data on SEC was required at admission: years of education, access to health insurance, installed sanitary facilities, residence in endemic area, birth in rural areas, occupation and the overcrowding index. Serology was subsequently repeated each three years of follow-up while ECG and a chest x-ray were recorded once a year for clinical groups according to the Kuschnir classification. The outcomes to evaluate the impact of SEC were the seronegative conversion of two or all three serological tests and the change in the clinical group in patients with seronegative conversion or persisting positive serology. The Pearson's correlation test was applied to analyze the association among socioeconomic parameters. Multivariate Cox proportional hazards regression analyses were used to calculate the hazard ratios with 95% confidence intervals (CIs) for socioeconomic conditions and seronegative conversion of two or all three serological tests, adjusted for age, sex, symptoms, specific ECG abnormalities and etiological treatment with benznidazole. The chi-square test was applied to compare changes in clinical groups between patients with three persistent positive serological tests and patients with seronegative conversion of one, two or three serological tests. **Results:** 801 patients with 42.18±12.87 years (57 % female) and 10 years of follow-up are presented. More than half presented symptoms (459/801, 57%) and 34 % showed a specific ECG abnormality at entry. The distribution per clinical group according to Kuschnir was predominantly groups 0 and I (90% of patients). On the other hand, 46% of patients (373/801) received etiological treatment with benznidazole. A better serologic evolution (the seronegative conversion of two or all three serological tests) was predicted by the following SEC: years of endemic residence, HR 0.97 (0.95–0.99), p< 0.004, the overcrowding index, HR 0.81 (0.64–0.98), p< 0.02, and the access to health insurance, HR 1.47 (1.02–2.12), p< 0.04. The years of education showed a borderline significance, HR 1.07 (0.99–1.16), p= 0.07. The change in clinical groups was more frequent in patients with 3+ persistent serological tests (64/538, 12%) than in patients with seronegative conversion of two or all three serological tests (18/263, 7%), p < 0.03. **Conclusions:** the SEC themselves showed a significant impact on the evolution of chronic Chagas disease independently of etiological treatment and clinic characteristics and they should be considered as prognostic factors.

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The effect of concomitant use of monopril and spironolactone in patients with mild to moderate congestive heart failure

N. Krstic[1], M. Pavlovic, Z. Perisic, LJ. Radevic, M. Lazovic, S. Salinger, A. Stojkovic, D. Milic. [1]*Clinic for Cardivascular Diseases Nis* [2]*Clinic for Cardivascular Diseases Nis* [3]*Clinic for Cardivascular Diseases Nis* [4]*Institute for Occupational Disease Nis* [5]*Clinic for Cardivascular Diseases Nis* [6]*Clinic for Cardivascular Diseases Nis* [7]*Clinic for Cardivascular Diseases Nis* [8]*Clinic for Cardivascular Diseases Nis*

Background: Monopril (M) and spironolactone (S) have been reported to provide a favorable effect in the treatment of chronic heart failure (CHF). However, no information is available on the effect of the concomitant use of monopril and spironolactone in CHF patients. **Methods:** We have studied 30 patients who had left ventricular ejection fraction (EF) < 0.40 (EF: 32±8%, NYHA class :2.4±0.8 echocardiography by Teicholz). At the entry, 16 out off 30 patients had received spironolactone (42±12mg/d). Echocardiography and 24 hour Holter monitoring were performed before and six month after administration of monopril (12.8±2.8 g/d). **Results:** At the entry, there were no significant differences in age, NYHA class, blood pressure, heart rate, left ventricular end-diastolic dimension (LVDd), EF between patients with the concomitant use (M+S: n=16) and those with monopril only (M:n=14). LVDd significantly decreased six month after administration of M+S (61.6± 8.4 to 57.6±6.2mm p<0.05), while there was trend of decrease in patients with M only. Although EF significantly increased six month after the entry in both M+S (32.4±6.8 to 45.2±10.2%) and M only (33.1±8.1 to 39.2±9.1%), the degree of the improvement in EF was significantly greater in patients with M+S than those with M only (14.2±8.1 vs. 8.1±5.9%, p<0.05). **Conclusion:** The concomitant use of monopril and spironolactone is more effctive than the individual use of monopril in patients with mild to moderate CHF.

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Carney's syndrome: review and report of a case with five intracardiac myxomas

M. Silvero[1], J Boullosa. [1]*Hospital San Juan de Dios* [2]*Hospital San Juan de Dios*

Subjet: describe the case of a patient with multiple intracardiac myxomas who underwent a cardiac surgery. Review of Carney's syndrome. **Introduction:** primary tumors cardiac represent 5% of the tumors and the myxoma is more frequent in adults. They appear in isolated or familiar forms (7–10 %) associated to other tumors with hypersecretory activity, forming the Carney syndrome. Transmitted in dominant autonomic form. Its diagnosis is based on the appearance of two or more of the following criteria: myxoma cardiac, cutaneus myxomas, mammary myxomas or adenomas, mucocutaneous pigmented spots, nodular pigmented adrenocortical disease, testicular tumors, growth hormone secretory pituitary adenoma. **Case report:** 23 years male patient, 67 Kg.; 1,83 mts. ; Euroscore 2; mother and brother with Carney's syndrome. Physical examination: 2/6 mid-systolic murmur. Complementary studies

with positive data: eritrosedimentation 35 mm/1st h. Testicular echography: microlithiasis and epididymal cyst. Transthoracic echocardiography: left ventricle, moving mass of 4 cm, with a inferoseptum pedícul ; right ventricle, apical and barely moving mass of 2 cm; right atrial, two masses one of them no movable implanted in the septum and the other movable and pediculated implanted on the anterior leaflet in tricuspid valve. They were a total of 4 myxomas. Intra and postoperatory considered risk: awaited events, complete atrioventricular block; residual inter-auricular and inter-ventricular communication; right or left or congestive heart failure, tricuspid and or mitral insufficiency, systemic inflammatory response, brain, kidney, coronary, aortic bifurcation and extremities embolizations; impossible positioning of the pulmonary artery catheter. Intraoperative monitoring; 6-lead ECG derivations, oxicapnography, esofagic temperature, airway pressure, expiratory minute volume, central venous pressure, invasive arterial pressure, diuresis, nomogram, ionogram, glycemia, lactacidemia and activated coagulation time, post- sternotomy, during cardiopulmonar by pass cardiopulmonar and thirty minutes after it. **Results:** intraoperatory drugs: midazolam, HYPERLINK "http://www.ncbi.nlm-.nih.gov/sites/entrez?term=cefazolin&" cefazolin, HYPERLINK "http://www.ncbi.nlm.nih.gov/sites/entrez?term=sevoflurane&" sevoflurane, fentanyl, lidocaine, vecuronium, HYPERLINK "http://www.ncbi.nlm.nih.gov/sites/entrez?term=hydrocotison&" hydrocortisone, aminocaproic-acid, Glucose-insulin-potassium infusion. Mechanic ventilation: FIO_2 1, VT 700 ml., HR 12 b/min. I:E 1:2.Cardiopulmonary by pass's time 46, and crossclamp's 36. Spontaneous CPB weaning with sinusal rhythm, dobutamine as inotropic support. Surgery: resection of the right atrial's myxoma that was implanted in the septum, resection of the one implanted in the tricuspid valve, resection of 2 myxomas in right ventricle and the one in right ventricle, (total of 5 myxomas), left ventricle repair, right ventricle repair with Dacron ™ graft, De Vega annuloplasty in tricuspid valve, closure of residual inter-ventricular communication and right atrial repair. 3 hours of stay in operating room. Transferred to the recovery room intubated with, analgosedation and relaxed, MAP 70 mmHg, HF 84 b/min, 99% Sat. 0_2 The patient left the hospital at the sixth day of the posopertory. **Discussion:** hypersecretory activity, awaited events of systemic inflammatory response, embolizations and the location of the tumors cardiac that imply resections of wall cavities, generate a challenge for the different medical specialists. Some authors maintain that during the cardiac surgery of this disease, is necessary explorate the four cavities.

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Gated SPECT Myocardial imaging in patients with left bundle branch block: comparison with stress echo coronary flow reserve

D. Sobic-Saranovic[1], S. Pavlovic[1], A. Djordjevic-Dikic[2], Z. Petrasinovic[2], N. Kozarevic[1], DJ. Saranovic[3], M. Todorovic-Tirnanic[1], V. Artiko[1], V. Obradovic[1], M. Ostojic[2]. *[1]Clinical Center of Serbia, Institute for Nuclear Medicine, Belgrade, Serbia [2]Clinical Center of Serbia, Institute for Cardiovascular Diseases, Belgrade, Serbia [3]Clinical Center of Serbia, Institute for Radiology, Belgrade, Serbia*

Dipyridamole stress myocardial perfusion imaging has been established as the procedure of choice in patients with left bundle branch block (LBBB). **Aim:** We performed MIBI myocardial perfusion tomography in order to evaluate 23 patients with LBBB and compare findings with coronary flow reserve on stress echo. **Material and Methods:** To evaluate myocardial perfusion and function we performed 2-day dipyridamole stress and rest protocol and ECG-gated acquisition after MIBI administration. Left ventricular volumes (LVEDV and LVESV) and left ventricular ejection fraction (EF) were calculated from the gated SPECT data by commercially available software 4D-MSPECT. Myocardial perfusion was scored visually by use of 17 segment, 4-point scoring method and septal wall thickening as well as motion abnormalities by use of 3-point and 4-point scoring, respectively. There were 6 normal control subjects and 23 patients with LBBB who underwent Doppler dipyridamole stress echocardiography. Diastolic flow velocities at baseline and peak hyperemia were measured and coronary flow reserve (CFR) was assessed. Normal CFR was defined as ≥ 2. **Results:** The mean LVEDV and LVESV was greater than in control subjects (110 ± 52ml vs. 83 ± 24 (stress), 106 ± 48 vs. 82 ± 28 (rest) and 52 ± 47 vs. 18 ± 6 (stress), 48 ± 43 ml vs. 22 ± 11 (rest), respectively, $p < 0.05$. The mean LVEF was lower in LBBB pts than in control group ($59\pm18\%$ vs. 78 ± 6 for stress and 61 ± 14 vs. 76 ± 8 % for rest, $p<0.05$). By echocardiography 16/23 pts had normal CFR and in 17/23 pts there were no signs of ischemia, although all pts had decreased perfusion at septal region. In 7 pts CFR was ≤ 2 and reversible perfusion defects were found in 6/23 pts. As a whole, the agreement between two methods was found in 19/23 pts. The summed septal wall motion score was normal in 7 pts and in other 16 pts the mean summed motion score was 12 ± 4 (stress), vs 9 ± 4 (rest), $p>0,05$. There was no wall thickening in septal quadrant in 9 pts (summed mean score was 9 ± 2 for stress vs 9 ± 3 for rest, $p>0,05$). **Conclusion:** Our preliminary results show that findings between MIBI scintigraphy and CFR on stress echocardiography were concordant in 19/23 pts, indicating ischemic heart disease in 7 pts and in another 16 septal wall motion abnormalities.

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Value of Gated SPECT perfusion imaging in patients with previous myocardial infarction and single vessel disease

D. Sobic-Saranovic[1], S. Pavlovic[1], B. Beleslin[2], M. Todorovic-Tirnanic[1], DJ. Saranovic[3], Z. Petrasinovic[2], V. Artiko[1], V. Obradovic[1], B. Vujisic-Tesic[2], M. Ostojic[2]. *[1]Clinical Center of Serbia, Institute for Nuclear Medicine, Belgrade, Serbia [2]Clinical Center of Serbia, Institute for Cardiovascular Diseases, Belgrade, Serbia [3]Clinical Center of Serbia,Institute for Radiology, Belgrade, Serbia*

Background: In patients with previous myocardial infarction evaluation of myocardial viability and global left ventricular ejection fraction (EF) may provide clinically useful diagnostic and prognostic information. Gated SPECT imaging allows simultaneous assessment of myocardial viability according to extent of perfusion defect and preserved wall thickening, and function (left ventricular EF). The aim of the study was to compare myocardial perfusion and global EF in patients with previous myocardial infarction (MI) before and after angioplasty. **Materials and Methods:** Study group consisted of 25 patients (mean age 53 ± 8 year, 21 male) with previous myocardial infarction (before 3.6 ± 6 months) and single vessel coronary artery disease (17 LAD, 4 LCx and 4 RCA). All patients underwent coronary angioplasty and stenting of infarct related coronary artery. To evaluate myocardial perfusion and function we performed rest ECG gated MIBI acquisition after nitroglycerin administration. Left ventricular EF was calculated from gated SPECT data by commercially available software 4D-MSPECT. Myocardial perfusion abnormalities were expressed as defect extent in per cent of entire left ventricle. Myocardial region was considered as viable when systolic wall thickening was present and MIBI uptake was $\geq$50% of peak myocardial activity. Perfusion and function were evaluated before and 3–13 months after stenting. **Results:** According to myocardial perfusion and preserved systolic wall thickening the patients were divided in two groups: group I consisted of 16 patients with viable segments after MI and group II of 9 patients with non-viable segments. The mean left ventricular EF in group I was higher than in group II ($60\pm9\%$ vs. $39\pm7\%$, $p<0.05$) and perfusion abnormalities were grater in group II than in group I ($41\pm13\%$ vs. $25\pm15\%$, $p<0.05$). After successful angioplasty and stent implantation in group I global LVEF slightly increased (60 ± 9vs $63\pm$ 9%, $p>0.05$) and perfusion abnormalities significantly decreased ($25\pm15\%$ vs. $18\pm14\%$, $p<0.05$). On the contrary, in group II there was no significant improvement of LVEF ($39\pm7\%$ vs. $43\pm8\%$, $p>0.05$). Perfusion abnormalities were larger after angioplasty, although without statistically significance ($4l\pm13\%$ vs. $42\pm11\%$, $p>0.05$). **Conclusion:** In patients with previous myocardial infarction MIBI SPECT detected viable myocardium more frequently when global ejection fraction was higher. MIBI SPECT after nitrate administration can predict functional myocardial recovery.

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Ischemic Preconditioning in Elderly Patients with first STEMI.

M. Giorgi[1], R Ahuad Guerrero, P Schygiel, F Sokn, H Farras, M Voos, J Tronge. *[1]CORPORACION MEDICA GENERAL SAN MARTIN [2]CORPORACION MEDICA GENERAL SAN MARTIN [3]CLINICA IMA [4]CLINICA IMA [5]CORPORACION MEDICA GENERAL SAN MARTIN [6]CORPORACION MEDICA GENERAL SAN MARTIN [7]CLINICA IMA*

Purpose: The benefits of ischemic preconditioning (IP) had been recognized for adults with STEMI. However the effect of IP is still a matter of debate because there were different results and definitions of IP. Our aim was to evaluate the effect of IP in in-hospital mortality in elderly patients (p.) with STEMI. **Methods:** we prospectively registered elderly ($\geq$75 years old) p. admitted with STEMI to ours CCUs. Patients with previous MI or revascularization were excluded to avoid biases regarding colateral coronary circulation. Sample was divided in two groups: IP+ (p. with angina or anginal equivalents in the 24 hs prior to admission) and IP- (p. without preconditioning). The main outcome of our study was in-hospital mortality rate in both groups. Differences between groups were evaluated with chi square and Fisher tests as corresponds. **Results:** 158 p. were included. Mean age was 78.9 ($\pm$2.2) years, 95 p. (60.13%). There were 50 p. (31.6%) in the IP+ group and 108 p. (68.4%) in the IP- group. In-hospital mortality was 9 p. (18%) and 36 p. (33.3%) $p=0.047$ OR(CI95) 0.44 (0.18–1.03) in the IP+ group and IP- group, respectively. This reduction was mainly due to reduction in VT/VF (2% vs. 18.5%, $p=0.004$, in the IP+ group and IP- group, respectively). We found no differences between groups with exception of betablockers use (62% vs. 42.6% $p=0.03$ in the IP+ group and IP- group, respectively) and ACEI use (52% vs. 28.7% $p=0.005$ in the IP+ group and IP- group, respectively). In the stratified analysis mortality rate was reduced by betablockers in both groups but ACEI did not. **Conclusions:** in our sample of elderly patients with first STEMI we found that IP reduced in-hospital mortality rate mainly because there were less TV/VF in the IP+ group.

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Can we predict clopidogrel resistance after percutaneous intervention?

M. Dominiak[1], A Rózga[2], T Wcisło[3], M Krzemińska- Pakuła[4], J Kasprzak[5]. *[1]II Chair and Department of Cardiology, Medical University of Lodz, Poland [2]II Chair and Department of Cardiology, Medical University of Lodz, Poland [3]II Chair and Department of Cardiology, Medical University of Lodz, Poland [4]II Chair and Department of Cardiology, Medical University of Lodz, Poland [5]II Chair and Department of Cardiology, Medical University of Lodz, Poland*

Purpose: 5% to 30% of patients (pts) do not respond adequately to clopidogrel (CLOP) and are thus at increased risk of a cardiovascular event. The aim of the study was to define clinical and biochemical predictors of suboptimal response to CLOP in pts with stable coronary disease undergoing percutaneous coronary intervention (PCI) with stent implantation. **Background:** We report a pilot analysis including 25 patients (female gender 76%, mean height 1.73 ± 0.08, mean weight 81 ± 9, mean BMI 27.3 ± 3.2) with coronary artery disease undergoing PCI with stent implantation, receiving a loading dose 300 mg of CLOP followed by CLOP 75 mg/daily and 75 mg of acetylsalicylic acid (ASA). **Results:** As many as 44% pts were resistant to CLOP defined as platelet inhibition $<30\%$ in the response to CLOP. In multivariate analysis regression three variables were correlated with percentage of platelet inhibition by CLOP (model predicting 38% of CLOP response variability): values of 75mg ASA resistance ARU75 (9% of CLOP suppression per 100 ARU), MB fraction of creatine kinase /CKMB(-6 % of CLOP suppression per 1 ln(CKMB activity)) and mean corpuscular hemoglobin concentration (7% of CLOP suppression per 1% MCHC). In the assessment of classic risk factors in resistant group vs. responsive group no significant differences were detected, including diabetes (18% vs. 21%;$p=1$) and hypertension (45% vs. 71%;$p=0.24$, respectively). The only significant differences between the resistant and responsive subjects were higher values of CKMB (82 ± 104 vs. 47 ± 80, $p=0.013$, respectively), MCHC ($33.8\pm0,7$ vs. $34.4\pm0,9$, $p=0.051$, trend) and LDL-cholesterol (130 ± 44 vs. 101 ± 35, $p=0.07$, trend), the latter 2 related with odds ratio for good platelet response to CLOP at 0.98 per mg/dl LDL-cholesterol and 3.28 per %MCHC. **Conclusions:** Dichotomously defined resistance to clopidogrel is surprisingly common and cannot be predicted by medical history or clinical/demographic variables but may be related to higher LDL-cholesterol and lower MCHC. There is a negative correlation between the degree of platelet response to clopidogrel and baseline reactivity to ASA (ARU) and CKMB but positive with values of MCHC

in stable coronary disease patients undergoing stent implantation. Further investigations in large-scale populations are needed to confirm this pilot findings.

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An increased right ventricular overload - how does it influence the tissue?

M. Kowalski[1], E. Kowalik[1], P. Hoffman[1]. [1]*Institute of Cardiology, Warsaw, Poland*

Introduction There are limited data on right ventricular (RV) regional deformation in various volume or pressure overloads. Few studies documented unaltered strain (S) and strain rate (SR) values obtained from RV free wall in patients with atrial septal defect (ASD). We assumed however that differing intraatrial shunts (Qp:Qs) may influence the indices of RV regional deformation measured in longitudinal direction i.e. throughout a lateral wall. Our aim then was to find a potential relationship between differing Qp:Qs and tissue deformation indices as well as between the degree of pulmonary volume overload and right systolic atrioventricular plane displacement (AVPD) reflecting global RV function. **Methods** 40 subjects (30 F, 10M) (age 15–59 yr) with ASD were studied. Among them 36 had ASD type II and 4 had ASD sinus venosus type (the average Qp/Qs for the group was found as 2.2 $\pm$ 0.8). The group was divided into three subgroups with mild (1,2–1,5), moderate (1,6–2.2) and severe (>2.2) shunts. The data on S and SR characterizing longitudinal regional deformation were acquired from basal, mid- and apical segments of RV lateral wall on the basis of automatic tracking of the region of interest (GE Echopac 2D Speckle Strain program). Moreover, right AVPD was measured and expressed in mm. **Results** In comparison with normals S and SR were not different in patients with ASD (for example mid RV S in ASD patients -31.81% vs -29.86%, p=NS; systolic mid RV SR -1.58 1/s vs -1.49 1/s, p=NS). The highest values of S were recorded for moderate Qp:Qs flow (mid RV S -26.26% vs -36.36% vs -29.61%, $p<0.05$; respectively mild, moderate and severe left-to-right shunts). The difference between mild and severe overloads was insignificant. A significant non-linear correlation ($p<0.05$) was found for mid RV S and Qp:Qs. The analysis of SR did not show any difference between three subgroups. AVPD was found to correlate with RVEDd and pulmonary trunk diameter (respectively r=0.37, $p<0.05$; r=0.32; $p<0.05$). AVPD was significantly higher in patients with ASD when compared to normals (32.82mm vs 26.79 mm, $p<0.01$). The relationship between AVPD and differing Qp:Qs was weak (r=0.30, p=0.06).. **Conclusions** In adults with ASD, the ultrasonic tissue indices are altered in moderate left-to-right shunts. Mild and severe shunts do not have major impact on RV regional deformation. Moderately increased RV volume overload is strongly expressed in mid myocardial region. A global RV function expressed by right AVPD is augmented in ASD patients and weakly reflects the degree of pulmonary volume overload.

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ABO blood group distribution and major cardiovascular risk factors in patients with myocardial infarction

I. Sari[1], O Ozer[1], M Sucu[1], V Davutoglu[1], S Gorgulu[2], M Eren[2], M Aksoy[1]. [1]*GAZIANTEP UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF CARDIOLOGY GAZIANTEP TURKEY* [2]*SIYAMI ERSEK HEART CENTER ISTANBUL TURKEY*

Objective: Investigations reveal that there is an association between ABO blood group and coronary artery disease (CAD). Although there are contraversial results, majority of the studies report a lower risk in individuals with the O phenotype. Data from the Framingham study suggested that the incidence of ischemic heart disease was higher among subjects with non-O ABO phenotype. On the other hand, there are reports that blood group O is associated with higher rates of cardiovascular mortality. Some authors deny the association between various ABO blood groups and development of CAD and premature CAD in individual subjects. In this study, we aimed to investigate if there is an association between ABO blood groups, major cardiovascular risk factors and ST elevation myocardial infarction (MI) in a Turkish cohort. **Methods:** 476 patients with acute ST elevation MI (mean age 56,7 $\pm$ 11,7; 80 % men) and 203 age and sex matched healthy subjects were enrolled into the study. ABO blood group distribution of patients were compared with control group. Furthermore, in each ABO blood group, frequency of major cardiac risk factors was determined to find any correlation between blood groups and cardiovascular risk factors. **Results:** Distribution of ABO blood groups in patients versus control group was; A in 43.1%/44.3%, B in 15.1%/15.3%, AB in 10.7%/12.3% and O in 31.1%/28.1% ($p>0.05$ for all). ABO blood group distribution of both patients and control group were concordant with the official data from general Turkish population. When we further analysed the relation of major cardiovascular risk factors and ABO blood groups in patients with MI in terms of age, sex, CAD detection age and incidence of diabetes, hypertension, smoking, hypercholesterolemia and obesity, distribution of sex, incidence of diabetes, hypertension, smoking, hypercholesterolemia and obesity was similar between ABO blood groups however, the patients with blood group A were younger than the the patients with other blood groups and CAD detection age was younger in the group with blood group A than the other blood groups (p=0.004 and p=0.001 respectively). **Conclusions:** In conclusion, distribution of ABO blood groups in patients with MI was quite similar to control group and that of general Turkish population which support the idea that; ABO blood group has no effect on development of MI. Association of ABO blood group distribution with cardiovascular risk factors, coronary artery disease and MI needs to be clarified with multicenter, prospective and large scale studies.

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Clinical value of lead aVR in Acute Coronary Syndromes with non-ST segment elevation

H. Juan Gallinari[1], H. Alviso De Vargas[2], E. Gonzalez Gonzalez[3], G. Boccuzzi[4], S. Colangelo[5], M. Minelli[6]. [1]*Escorial Universitary Hospital, Madrid, Spain* [2]*Coria Hospital, Coria, Spain* [3]*University Complutense of Madrid, Spain.* [4]*San Giovanni Bosco Hospital, Torino, Italy.* [5]*San Giovanni Bosco Hospital, Torino, Italy.* [6]*San Giovanni Bosco Hospital, Torino, Italy.*

Introduction: ECG ST-segment depression has important prognostic value in acute coronary syndromes. ST-segment elevation in aVR has been reported to be associated with left main coronary artery stenosis or severe diffuse coronary artery disease. But no with high cardiovascular risk. **Objective:** To assess the clinical value of ST-segment elevation in the aVR lead in patients with non-ST segment elevation acute coronary syndrome (ACS). **Methods:** From January 1998 to December 2005, 4950 patients with ACS and non-ST segment elevation admitted to our three Hospitals in prospectively analysis. Patients were divided in two groups according to ST-segment elevation in lead aVR $\geq$ 2mm: group 1: with aVR ST-segment elevation (619 patients, 12.5%); and group 2: without aVR ST-segment elevation (4331 patients, 87.5%). **Results:** The 2 groups were similar with regard to demographic characteristics and risk factors. Compared to group 2 patients, group 1 had higher prevalence of prior myocardial infarction (30.2% v.s. 21.9%, $p< 0.0001$), left main coronary artery disease (8.3% v.s. 1.3%, $p < 0.0001$) and diffuse ST segment depression (more than 5 leads ST-segment depression, 5.5 v.s 2.2, $p<0.001$). Patients with ST-segment elevation in aVR were more likely to have recurrent unstable angina (1,6% v.s. 0,2%, $p<0,0001$), to develop "Q wave" myocardial infarctions (10% v.s. 3,9%, $p<0,0001$), and have a significantly higher mortality rate (4,2% v.s. 1,3%, $p<0,0001$) and risk of heart failure (3,2% v.s. 1%, $p<0,0001$) during hospitalization. GP IIb/IIIa inhibitors and heparin were more frequently used in group 1, 31,8% v.s. 12,2 %, $p<0,0001$; and 90,5% v.s. 80,3%, $p<0,0001$ respectively. Coronary angiography was performed in 33,1% of pts in group 1 v.s. 25% in group 2 ($p<0,0001$) and a percutaneous revascularization in 32,9% v.s. 12% ($p<0,0001$). High rate of mortality and high cardiovascular risk was associated in uni and multivariate analysis with the presence of aVR ST-segment elevation. **Conclusions:** Patients with ST-segment elevation in lead aVR represent a high-risk subgroup among patients with non-ST-segment elevation ACS. This group would probably benefit from an early invasive management.

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Morning peak in the circadian variation of myocardial infarction is not valid for all nations: Afternoon predominance in Turkish population

I. Sari[1], V Davutoglu[1], B Erer[2], E Tekbas[2], E Ucer[2], O Ozer[1], H Uyarel[2], M Eren[2], M Sucu[1], M Aksoy[1]. [1]*GAZIANTEP UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF CARDIOLOGY GAZIANTEP TURKEY* [2]*SIYAMI ERSEK HEART CENTER DEPARTMENT OF CARDIOLOGY ISTANBUL TURKEY*

Objectives: Although data about circadian variation of myocardial infarction (MI) in western populations reveal morning peak between 06:00 and 12:00 hours, differences have been reported in different regions of the world. In this study, we wanted to evaluate circadian distribution of acute ST elevation MI in Turkish population and if this distribution is consistent with previously published data. **Methods:** We included 476 patients (mean age 56,7$\pm$11,7; 80 % men) with acute ST elevation MI. The time of onset of MI was determined by the attending physician on the basis of patient self-reports. The time in which chest pain had started was considered as the beginning of MI within $\pm$ 0.5-h. Patients were categorized into four 6-h increments according to the time that the symptoms began (00:01–06:00; 06:01–12:00; 12:01–18:00 and 18:01–24:00 hours). **Results:** Onset of MI was between 00:01 and 06:00 hours in 73 patients (15,3 %), between 06:01 and 12:00 hours in 112 patients (23,5 %), between 12:01 and 18:00 hours in 168 patients (35,3 %) and between 18:01 and 24:00 hours in 123 patients (25,8 %). Onset of MI exhibited significant circadian variation among four time periods ($p<0.001$), demonstrating an afternoon peak (between 12:01 and 18:00 hours) and a trough between 00:01 and 06:00 hours. Incidence of MI between 12:01 and 18:00 hours was significantly higher when compared with other three 6-h periods (p=0.001). Incidence of MI between 00:01 and 06:00 hours was significantly lower when compared with other three 6-h periods (p=0.001). Incidence of MI between 12:01 and 18:00 hours was 1.64 times that of average frequency during the remaining 18 hours of the day and 2.3 times that of frequency between 00:01 and 06:00 hours. Characteristic peak of infarction in the afternoon was observed in the younger and older (age<60: and$\geq$60) subgroups of the population, in men and women, in patients with and without history of coronary artery disease (CAD) and family history of CAD, in patients with and without diabetes, hypertension, obesity and current occupation, in alcohol drinkers and non-drinkers, married and single/divorced ones, in patients with anterior and inferior MI, in aspirin and beta blocker users and non-users. However patients who smoke, did not have a significant circadian variation in ST elevation MI when compared with the ones who do not smoke (p=0.032). **Conclusions:** The present study clearly demonstrates a marked circadian periodicity in the time of onset of ST elevation MI, with a predominance in the afternoon which is inconsistent with most of the previous publications from western populations. The factors that are known to effect circadian rhythm of MI may not be equally effective in all populations. Further studies are required to determine the underlying pathophysiological mechanisms causing these differences in chronobiology of MI.

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Analysis of timing events in Doppler ultrasound signals from the fetal heart rate

J. Zietek[2], **J. Jezewski**[1], K. Horoba[1], A. Gacek[1], J. Wrobel[1]. [1]*ITAM Institute, Zabrze, Poland* [2]*Medical University of Silesia, Katowice, Poland*

Introduction: Diagnostics of unborn baby is mainly aimed at prediction and detection of occurrence of intrauterine hypoxia. Consequences resulting from fetal hypoxia reflects in its heart activity. Among various methods of monitoring fetal heart activity a pulsed Doppler ultrasound technique is the most often used. The Doppler shift effect allows to detect a movement of organ reflecting ultrasound beam penetrating maternal abdomen deeply enough to encompass the fetus. Complexity and variability of Doppler signal make difficult the precise measurement of timing dependences defining individual events of cardiac cycle. Aim of the work was to carry out a detailed comparative analysis of Doppler echo coming from movement of two different objects within the fetal heart: valve and wall. **Methods:** Signals were recorded with a help of measurement station (based on LabView environment) allowing simultaneous acquisition of ultrasound signal and fetal electrocardiogram captured from maternal abdomen or fetal head. Joint time frequency analysis was applied. Average recording time in a group of 15 patients was 20 minutes. Ultrasound signal was provided by fetal monitor whereas electrocardiogram was recorded most often by the use of abdominal leads,

however during labour signals were recorded from the fetal head and therefore their quality was much higher. Representative five-second fragment without any interference caused by maternal movements was extracted from every signal. Analysis comprised determination and comparison of spectrograms and power density spectrums corresponding to individual events of cardiac cycle: atrial and ventricular wall contraction – Atc (87% - percentage of occurrences) and Vc (27%), mitral valve opening and closure – Mo (60%) and Mc (87%), aortic valve opening and closure – Ao (53%) and Ac (60%). **Results:** In general, frequency spectrums corresponding to heart walls activity differ from spectrums resulting from vales activity. However in some recordings differences relating to frequency contents were small. Additionally, walls activity is characterized by smaller variability of frequency content over time. Spectrums of heart wall events have very high value of correlation coefficient and a low value of standard deviation (for Atc and Vc r=0.98±0,02). Considering spectrums of valve events like in the opposite tendency is observed. Observed in some cases high values of correlation coefficient between events of different types denote a possibility of erroneous detection of a given event. The highest value of correlation r=0.93±0,04 was achieved for Vc and Atc events. **Conclusions:** Developed measurement set for synchronous recording of mechanical and electrical fetal heart activity allowed identifying of events observed in Doppler signal. Performed correlation analysis showed a high correlation of spectrums corresponding to walls movements and low value of correlation for spectrums originating from valves movements.

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Septadian Variation In The Occurrance of ST Elevation Myocardial Infarction In Turkish population: Monday Syndrome

I. Sari[1], B Erer[2], E Tekbas[2], E Ucer[2], H Uyarel[2], V Davutoglu[1], O Ozer[1], M Sucu[1], S Soydinc[1], M Aksoy[1]. *[1]Gaziantep University School of Medicine, Department of Cardiology, Gaziantep, Turkey [2]Siyami Ersek Thoracic and Crdiovascular Surgery Center, Cardiology Deoartment, Istanbul, Turkey*

Background: Current data about septadian variation of st elevation myocardial infarction mostly represents western populations but not whole world. Although present data reveal the occurrance of myocardial infarction mostly in the first day of the week, in some populations incedence increase at the weekends. Moreover it occurs throughout the week independent from the week day in some other populations. In this study we sought to gather information about septadian variation of acute st elevation myocardial infarction in Turkish population and association with the present data. **Methods:** 393 patients (mean age 56,7 ± 11,7; 80 % men) with acute st elevation myocardial infarction who remembers the exact and accurate time of the onset of chest pain were included into the study. The data were collected during 11 months period starting from September 2003, until the end of July 2004. The time in which chest pain had started was considered as the beginning of myocardial infarction. Patients experiencing myocardial infarction without chest pain and those were not remembering the onset of chest pain were not included into the study. Patients with non st elevation myocardial infarction and unstable angina pectoris and those experiencing myocardial infarction in the course of percutaneous coronary interventions and coronary artery bypass graft surgery were also not included into the study. Patients were divided into 7 groups according day of the week in which chest pain started. **Results:** Of 393 patients, beginning of myocardial infarction was on Monday in 83 patients (21,1 %), on Tuesday in 46 patients (11,7 %), on Wednesday in 50 patients (12,7 %), on Thursday in 46 patients (11,7 %), on Friday in 51 patients (13 %), on Saturday in 53 patients (13,5 %) and on Sunday in 64 patients (16,3 %). When compared with the other days of the week, incidence of myocardial infarction was higher on Mondays (p=0.04). The incidence of occurrance of myocardial infarction on Mondays was 1.6 times that of the average frequency during the remaining 6 days of the week. Interestingly Monday peak in the incidence of myocardial infarction was similar both in working and retired population. **Conclusions:** The incidence of occurrance of myocardial infarction increase on Sunday and reach the peak on Mondays in Turkish population as in western populations. Catecholamine discharge resulting from the stress of the following week may be one of the possible explanations. However similaritiy of the results in both retired and working population is interesting. This may be partially because most of the retired people in Turkey is working without registration.

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Antepartum evaluation of fetal cardiac performance

J. Zietek[1], A. Matonia[2], J. Sikora[1], K. Horoba[2], A. Gacek[2], **J. Jezewski[2]**. *[1]Medical University of Silesia, Katowice, Poland [2]ITAM Institute, Zabrze, Poland*

Introduction: Correct variability of fetal heart rate (FHR) is an indirect proof of proper oxygen supply of fetus. However, the fetal state assessment based on analysis of FHR only, results in low (21–31%) sensitivity and positive prognostic value. The aim of work was to develop a new approach to fetal monitoring system which enables the standard FHR analysis and provides new quantitative parameters of detailed analysis of electrical and mechanical heart activity together with their mutual relations. These parameters: pre-ejection period (PEP), isovolumetric conduction time (IVC) and left ventricular time (LVET) are supposed to be highly correlated with the fetal outcome. Innovation of the approach proposed relies on indirect and noninvasive recording of fetal ECG signal, which enables application of the system during both pregnancy and labour. **Methods:** Diagnostic set has been constructed on the basis of computer cooperating with data acquisition card. Integral part of the set is the fetal monitor MT-430 (Toitu Japan) having two independent ultrasound channels as well as the channel for monitoring of uterine contraction activity. Signals of electrical fetal heart activity are recorded in the system by means of separate bioelectrical signals recorder module. The very low level of its own noise which does not exceed 0.5 μV (peak-to-peak) measured with reference to input (RTI) and large value of CMMR coefficient (120 dB) ensure the proper suppression of mains interference. The system software was developed in LabView (National Instruments) graphical environment for building signal processing applications. **Results:** Analysis of acquired signals and determination of quantitative parameters are performed in off-line mode. The procedure of dominating maternal electrocardiogram suppression is carried out thanks to which "pure" FECG signal is obtained. The next step is automatic detection of R waves, determination of consecutive cardiac intervals and calculation of the instantaneous values of FHR signal. The monitoring system enables choosing indicated fragments of signals and displaying them in a preset scale. Graphical cursors allow marking of given events and thus calculation of PEP, IVC and LVET parameters. The measurement of characteristic time-amplitude relations is performed on averaged segment of PQRST that can be displayed in a separate graphical window. **Conclusions:** The designed set for fetal diagnosis support, apart from the standard analysis of FHR variability, allows the user to determine additional quantitative parameters describing the correlation between the electrical and mechanical fetal heart activities. The database of representative records will enable in the future selection and establishing of criteria for parameters for qualitative trace evaluation, which will ensure the best prediction of fetal outcome.

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Left ventricular regional function in adults after aortic coarctation repair

M. Kowalski[1], E. Kowalik[1], K. Kotlinski[1], J. Rozanski[1], P. Hoffman[1]. *[1]Institute of Cardiology, Warsaw, Poland*

Long-term data indicate that life expectancy after successful repair of aortic coarctation remains reduced. Although ejection fraction (EF) of the left ventricle (LV) in this population is normal or slightly increased, it would be interesting to look at the LV regional deformation data (regional strain -S and strain rate -SR). We aimed to investigate what might be the effect of pressure overloading on LV regional function in patients who had already been operated on and who present uncomplicated follow-up. In addition, we also looked at a potential correlation between the degree of residual narrowing in the descending aorta and regional S and SR obtained from the LV walls and interventricular septum (IVS). **Methods** 20 young adults after CoA (10 F, 10M; age 19–58 yr, mean 33 yr) were studied. The mean age at coarctectomy was 23.3 yr. The most common surgical procedure applied was graft implantation (n=13; 65%). All patients were normotensive. Echocardiographic examination was undertaken with GE Vivid7 and included a standard 2D, pulsed, continuous wave and color Doppler examination to assess the aortic arch and to exclude any intracardiac anomalies. Patients were characterized by the diameter of ascending and descending aorta, aortic arch as well as by the peak and mean Doppler gradient across the coarctation site. The ultrasonic tissue data in patients were compared to those obtained from age and sex matched healthy individuals (n=18). The data characterizing longitudinal deformation were acquired from basal, mid- and apical segments of IVS and LV lateral, anterior and inferior walls. Regional systolic and diastolic Strain Rate (SR's) and regional maximal Strain (S) were measured using GE Echopac 2D Speckle Strain program. **Results** We did not confirm any significant difference in LV dimensions and EF between patients and normals. Patients had slightly thicker interventricular septum (11 mm vs 9 mm; p<0.05) and wider ascending aorta. The early diastolic SR recorded for the apical IVS segments was lower in patients (1.85 1/s vs 2.23 1/s; p<0.05). We also found a significant correlation between the peak gradient across the coarctation site and the maximal strain in the mid segment of the anterior wall (r=0,65; p<0,01) and between the peak gradient and mid systolic SR (r=0.54; p<0.05). Similarly, there was a significant correlation between the mean gradient across the coarctation site and the maximal strain in the above mentioned segments (similarly r=0.66, p<0.01; r=0.57, p<0.05). Neither residual aortic narrowing (diameter of aorta) nor the age at coarctectomy correlated with any of analyzed regional tissue indices. **Conclusions** In adults after aortic coarctation repair the ultrasonic tissue indices are altered in the apical segments of IVS when compared to normals. The higher peak and mean residual gradients across the coarctation site are associated with reduced regional deformation in the mid segments of the anterior LV walls. Despite the normal LV EF in postcoarctectomy patients, the LV longitudinal function is impaired.

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Relationship between total and differential leukocyte counts and isolated coronary artery ectasia

S. A. Kocaman[1], G. Taçoy[1], A. Sahinarslan[1], T. Timurkaynak[1], A. Çengel[1]. *[1]Gazi University School of Medicine, Department of Cardiology, Ankara, TURKEY*

Background: Coronary artery ectasia (CAE) is a clinical entity characterized with localized or diffuse dilation of ≥1.5 times normal adjacent segments of vessels. Although the etiopathogenesis is not clearly understood; in some studies it has been shown that CAE may be a form of atherosclerosis and has increased inflammatory properties. Leucocytes have a crucial role in the development of inflamatuar processes. We aimed to investigate possible relationship between leukocytes and coronary ectatic process without coronary artery disease (CAD) and to compare with the inflammatory atherosclerotic process related with leukocytes. **Methods:** Our study population consisted of 371 patients. We divided the patients into three groups. 42 patients with isolated CAE as group I, 279 patients with CAD as group II, 50 control subjects with normal coronary arteries (NCA) as group III were classified. CAD group was divided again into four subgroups according to coronary lesion severity for multiple comparisons. Isolated CAE was defined as localized or diffuse non-obstructive lesions of the epicardial coronary arteries with luminal dilatation exceeding the 1.5 times of normal adjacent segment and without any stenotic lesions with visual assessment. Total and differential leukocyte counts were measured by an automated hematology analyzer in all study participants. **Results:** The counts of total leukocytes (7348±1898, 7569±1619 cell/mm3 and 6770±1748 cell/mm3, p=0.002), neutrophils (4260±2169, 4529±1380 cell/mm3 and 4040±1649 cell/mm3, p=0.037) and monocytes (630±216, 583±198 cell/mm3 and 480±140 cell/mm3, p<0.001) were significantly different among CAE, CAD and NCA control groups, respectively. CAE group also had significantly higher leukocyte and subtype counts than non-obstructive CAD subgroup and NCA group. **Conclusion:** Our study results demonstrate that total and differential leukocyte counts, which play important role in inflamation, are increased in patients with isolated CAE. Total and differential leukocyte counts in this group were significantly higher than the groups which include the patients with non-obstructive CAD and control subjects with angiographically normal coronary arteries and as high as in patients with obstructive CAD. In conclusion our study findings show that leukocytes may have an important role in the development of CAE independently from atherosclerotic process. **Keywords:** Coronary artery disease; Coronary artery ectasia; Leukocytes; Positive remodeling

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Short-term preoperative treatment with atorvastatin reduces proinflammatory response and the risk of renal failure after cardiopulmonary bypass in patients with diabetes type 2 operated due to aortic valve disease-randomized, placebo controlled study

D. Zakrzewski[1], J. Janas[1], J. Stepinska[1]. [1]*INSTITUTE OF CARDIOLOGY WARSAW, POLAND*

Background: Renal failure is the major postoperative complication after cardiac surgery in pts with diabetes type 2 (DM 2). It may be partly related to enhanced proinflammatory response after cardiopulmonary bypass (CPB). Therefore we tested the hypothesis that preoperative short-term treatment with atorvastatin may reduce the risk of this postoperative complication in pts with DM 2 and acquired heart valve disease. **Methods:** 22 pts (14 men, 8 women, aged 67±8 yrs) with DM 2 and aortic valve stenosis referred to cardiac surgery with medium LDL cholesterol concentration of 121 mg/dl (range 102–130 mg/dl) were randomly assigned to either 40 mg/day atorvastatin or placebo. The medium duration of atorvastatin treatment before the cardiac surgery was 10 days (range 5–14 days). Pts with coronary artery disease, LDL cholesterol>130mg/dl, impaired left ventricle ejection fraction, acute or persistent inflammatory conditions, hepatic and renal failure, previously treated with statins or fibrates were excluded from the study. Venous blood samples were collected before entering the study and 240 minutes after weaning from CPB to establish the serum level of TNF alpha.Plasma level of creatinine was established before and 20±2 hours after surgery. Both groups: placebo and treated with atorvastatin were similar regarding the age of the pts and duration of CPB. Paired Student t-test was used to compare pre- and postoperative serum levels of creatinine and TNF alpha in each group. **Results:** The significant increase of TNF alpha and plasma creatinine was detected in placebo group, whereas insignificant increase in atorvastatin group was noted. **Conclusion** Short-term preoperative treatment with atorvastatin reduces the proinflammatory response and the risk of renal failure after aortic valve replacement in pts with DM 2.

TABLE I.

		placebo n=12	atorvastatin n=10		placebo	atorvastatin
before surgery	plasma creatinine (mmol/l)	87±18	97±14	TNF alpha (pg/ml)	2,15±0,8	2,76±0,9
after surgery	plasma creatinine (mmol/l)	125±70	122±35	TNF alpha (pg/ml)	3,52±1,41	3,24±1,34
p value		0,03	0,05		0,03	0,17

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Peak oxygen uptake is better than Oxygen Uptake Efficiency Slope in quantifying cardiopulmonary functional reserve in patients with Metabolic Syndrome

A. Casella-Filho[1], B.C.G. Nascimento[1], C.B. Casella[1], I.C. Trombetta[1], M.U. Rondon[1], F.Y. Cesena[1], D. Favaratto[1], C.E. Negrao[1], P.L. Daluz[1], A.C.P. Chagas[1]. [1]*Heart Institute (InCor) HCFMUSP,Sao Paulo,Brazil*

Background: Peak oxygen uptake (VO2 peak) is usually the most common index used to quantify cardiopulmonary reserve. However, VO2 peak is effort-dependent and may be underestimated in some circumstances (lack of motivation, arrhythmias, angina, problems in lower extremities) that may limit maximal effort during an exercise test. Oxygen Uptake Efficiency Slope (OUES), calculated by the slope of the linear relation between VO2 and the logarithm of pulmonary ventilation during graded exercise testing, is a sub-maximal index of cardiopulmonary functional reserve that may be a better indicator than VO2 peak to predict maximal exercise capacity in some conditions, because its independence of exercise intensity. Recently, OUES was shown to be better than VO2 peak in the evaluation of cardiopulmonary reserve in elderly subjects with insufficient metabolic stress. **Objective:** To compare VO2 peak and OUES in the evaluation of cardiopulmonary reserve in middle-aged patients with Metabolic Syndrome (MetS), before and after an aerobic exercise training (ET) **Methods:** We studied 20 middle-aged sedentary persons (10 with MetS and 10 controls) who underwent a cardiopulmonary exercise test on a bicycle to measure VO2 peak and OUES. Those with MetS were analyzed before and after subjected to a 3 times/week controlled training load (45min/day) for 3 months on a bicycle ergometer. VO2 was determined at effort peak and OUES was analyzed at respiratory exchange ratio (OUES RER) <1, at 90 % (OUES90) and at 100 % (OUES100) of exercise duration. Results: In MetS group, ET significantly increased VO2 peak and OUES100, but not OUES at RER<1 and OUES90 (Table). **Conclusion:** The findings in this study suggest that ET increases VO2 peak more than OUES in middle-aged individuals with MetS, indicating that VO2 peak is a better indicator of maximal exercise capacity in this specific group.

TABLE

	MetS before ET (B) (n=10)	MetS after ET (A) (n=10)	Control (C) (n=10)	C vs B	C vs A	B vs A
VO2 peak (mlO2/kg/min)	20.8±3.2	26.2±5.1	27.6±6.4	p<0.05	p>0.05	p<0.05
OUES/kg 100	26.0±5.1	28.5±5.9	31.6±6.7	p>0.05	p>0.05	p<0.05
OUES/kg 90	26.0±5.3	27.9±5.5	30.8±6.7	p>0.05	p>0.05	p>0.05
OUES/kg RER<1	26.1±4.8	26.0±4.5	30.0±8.5	p>0.05	p>0.05	p>0.05

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Urbanization of Chagas Disease – A 17-year follow-up

F. Sosa[1].

Introduction In The Province of Tucumán, Argentina, the evolutionary urban cycle of the Chagas' disease is nowadays in permanent development as a consequence of the continuous migrations due to local causes: ecological changes such as deforestation, agricultural expansion, the use of advanced technologies in farming exploitation and the closure of sugar cane factories. Unemployed rural laborers including a certain number of Chagas infected people migrate to urban centres in search of laboral opportunities of subsistence. This fact is related to the urbanization of Chagas' disease in Tucumcn and the evident increase of Chagas cardiopathies detectable not only in this province but also in others in our country, and abroad. **Objectives** The aim of this work is the follow-up of the migrations in the period 1990- 2006 to establish the current behaviour of people infected with T. Cruzi and analyze the tendencies of urbanization of the Chagas' disease in Tucumán. **Material and methods** Analysis of: 1) Chagas Laboratory Files at Asistencia Pública de Tucumán [state medical institution]. 2) Report on deforestation, farming exploitation and closure of sugar cane factories. 3) Processed migratory data of people infected with Chagas in the period 1990 – 2006 [17 years] in Tucumán. **Results** Total of serologic studies= 34,406. Zero positives at 1st time= 3,262. 1,612 were not radicated in the city of Tucumán. After analyzing the ones that were there, we found: Total of migrated people= 1,014 (from the interior of the province= 505; from other provinces= 436; from other countries= 73). Non – migrated people residing in San Miguel de Tucumán= 636. Total of urbanized individuals= 1,650. **Conclusions** From the obtained results we conclude that, in the Urbanization of Chagas' disease in Tucumán, period 1990 – 2006, the migration of the people infected with T. Cruzi contributed as follows: local migration= 31% (different sectors of the province); from other provinces= 26% (the major percentage from Santiago del Estero); and from other countries= 4% (Bolivia). Non-migrated individuals= 39%.

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PHARMACOLOGICAL EFFECT AT LOW DOSIS OF EZETIMIBE/SIMVASTATIN COMBINATION

A. Kavata[1], B. Martire[1]. [1]*LAS ACACIAS, Medical Center. Buenos Aires. Argentina* [2]*OSECAC, Medical Center. Buenos Aires. Argentina*

Objective: The objective of this study is to assess whether once total cholesterol (TC) and LDL cholesterol serum levels are initially lowered with Ezetimibe 10 mg/day + Simvastatin 20 mg/day (E+S), this effect is maintained at a 50% of the initial-dose equivalent (E+S: 5/10 mg/day respectively) after a year in high clinical risk patients (p). **Material:** 96 IIb dyslipidemic patients with 2 or more risk factors for coronary heart disease who did not respond to initial hygienic dietary measures were studied consecutively: 51 women and 45 men, with a mean age of 62 ± 12 years: 51 hypertensive patients (53%), 52 over-weighted patients (54%), 15 diabetic patients (15,6%), 18 patients with proven coronary heart disease (18,7%), 10 patients with a previous myocardial infarction (10,4%), 35 patients with other risk factors for coronary heart disease (36,4%). **Method:** All patients were initially prescribed one dosis of the E+S combination 10/20 mg/day respectively. After three months of treatment, CT and LDL-C serum levels reduction was monitored, from this moment onwards E+S dosis was reduced to half of the initial one: (5/10 mg/day respectively), evaluating dose response after one year. Baseline values were compared through the use of Student's t-test for unpaired data with respect to those obtained at 3 months and at one year for TC and LDL-C, accepting a rejection level of null hypothesis with a value of p: <0,05 or less. At 3 months: TC: 176,8 ± 32 mg/100 ml (p: <0,01), LDL: 106 ± 30 mg/100 ml (p: <0,01). At one year: TC: 174,3 ± 29,7 mg/100 ml (p: <0,01) LDL: 102 ± 29 mg/100 ml (p: <0,01). **Conclusions:** In this patients sampling, the initial pharmacological effect was be maintained after a year with a lower maintenance dose (50% of the initial one) of Ezetimibe/Simvastatin combination, thus reaffirming the effectiveness of the pharmacological potential synergism between them.

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Association Between a Cell-Seeded Collagen Matrix and Cellular Cardiomyoplasty for Myocardial Support and Regeneration

M. Cortes Morichetti[1], J. A. Genovese[2], E. Chachques[1], A. F. Carpentier[1], **J. C. Chachques**[1]. [1]*Pompidou Hospital, Paris, France.* [2]*McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania.*

The objective of cellular cardiomyoplasty is to regenerate the myocardium using implantation of living cells. Because the extracellular myocardial matrix is deeply altered in ischemic cardiomyopathies, it could be important to create a procedure aiming at regenerating both myocardial cells and the extracellular matrix. We evaluated the potential of a collagen matrix seeded with cells and grafted onto infarcted ventricles. A myocardial infarction was created in 45 mice using coronary artery ligation. Animals were randomly assigned to 4 local myocardial treatment groups. Group I underwent sham treatment (injection of cell culture medium). Group II underwent injection of human umbilical cord blood mononuclear cells (HUCBCs). Group III underwent injection of HUCBCs and fixation onto the epicardium of a collagen matrix seeded with HUCBCs. Group IV underwent fixation of collagen matrix (without cells) onto the infarct. Echocardiography was performed on postoperative days 7 and 45, followed by histological studies. Echocardiography showed that the association between the cell-loaded matrix and the intrainfarct cell implants was the most efficient approach to limiting postischemic ventricular dilation and remodeling. Ejection fraction improved in both cell-treated groups. The collagen matrix alone did not improve left ventricular (LV) function and remodeling. Histology in Group III showed fragments of the collagen matrix thickening and protecting the infarct scars. Segments of the matrix were consistently aligned along the LV wall, and cells were assembled within the collagen fibers in large populations. Intramyocardial injection of HUCBCs preserves LV function following infarction. The use of a cell-seeded matrix combined with cell injections prevents ventricular wall thinning and limits postischemic remodeling. This tissue engineering approach seems to improve the efficiency of cellular cardiomyoplasty and could emerge as a new therapeutic tool for the prevention of adverse remodeling and progressive heart failure.

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"Unoperated univentricular heart with normally related arteries and pulmonary stenosis in a 47 year old woman"

J. V.G.N. Juvenal Vaz Guimarães Neto[1–2], T. M. G.Q. Tânia Maria Gonçalves Quintão[2], H. F. M. Helena Furtado Martino[1], B. M. F. N Betania De Freitas Nogueira[2], R. C. A. Roberta Chaves Araújo[2], G. P. T. Glenda Pataro Teixeira[2], G. M. R. Gabriela Mendonça Rabello[2]. *[1]INSTITUTO NACIONAL DE CARDIOLOGIA [2]FACULDADE DE MEDICINA UNIVERSIDADE PRESIDENTE ANTÔNIO CARLOS*

A 47 year old female was admitted to cardiac catheterization in order to investigate the cause of chest pain. She has had burning chest pain, related to physical efforts and radiated to the back, since one year ago. The patient has been assisted by several physicians in different cardiology services because of a congenital cardiac defect diagnosed in early childhood. A diagnosis of cyanogenic cardiac disease was made, and the patient was treated clinically, irregularly. She had a stroke 2 years ago, resulting in mild left disability. She is mother of two, both born at term by cesarian section. After catheterization, the patient presented oxygen desaturation and a seizure, and was admitted in the intensive care unit. On admission oxygen saturation was 86%. She was slightly disoriented, cyanotic, with digital clubbing. Inspection of the precordium showed apex impulses heavily forceful, limited to four fingertips, deviated to the left. Cardiac auscultation revealed hypofonetic first sound, hyperfonetic second sound with fixed splitting, and a grade 2/4 systolic murmur near the pulmonary area. Laboratory findings: Hb= 16.5 g%, Ht= 54.2%, blood gases (50% 02 venturi mask/room air): pH= 7.40/7.41, pO_2= 91.2/58.5, SatO2= 97.3%/89.2%. The EKG showed sinusal rhythm, left axis deviation and with left ventricular hypertrophy criteria. Thoracic echocardiogram revealed moderate bi-atrial enlargement, normal atrioventricular valves with minimal mitral and tricuspid regurgitation. The semilunary valves were not seen. It also showed a single ventricle with left morphology, with normal ejection fraction, enlarged diastolic diameter with normal systolic diameter. No interventricular septum was seen. The cardiac catheterization showed an enlarged left atrium, no atrial shunt and patent foramen ovale. The atrioventricular valves were anatomically well conformed and minimal regurgitation was seen. The single ventricle had left morphology, enlarged diastolic diameter with normal ejection fraction. The venous return was in the left atrium, with normal anatomy. The Aorta and Pulmonary artery originated from the single ventricle and were normally related. No right chamber was seen. The Pulmonary valve was stenotic, with reduced mobility and the Pulmonary artery and its branches were greatly dilated. The aortic valve was normal, with normal aortic root. The coronariography showed right dominance, with the right coronary arising from the left valsalva sinus, with no obstructive lesions. The circumflex artery arised from the first third of the right coronary artery and showed no obstructive lesions. The interventricular branch of the left coronary artery was long, reaching the apex cordis, with no obstructive lesions. Manonmetry showed elevated end-diastolic pressure (15 mmHg) and single ventricle hypertension (140/90 mmHg). Pressure in the pulmonary territory was normal (30/15 mmHg), thus showing a gradient of 110 mmHg through the pulmonary valve. She was treated with hydantoin, with no recurrence of the seizures. The brain computed tomography scan showed an ancient hypoatenuating area in the right frontal lobe with no new lesions. The patient recovered uneventfully, and was discharged home after 72 hours, well.

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Cardiac tissue-reactive autoantibodies. Prevalence of anti-cardiac troponin-I IgG in a BNP positive population.

M. Adamczyk[1], RJ Brashear[1], PG Mattingly[1]. *[1]Abbott Laboratories*

We recently reported the high prevalence of anti-cardiac troponin-I IgG in the plasma samples from normal blood donors (n = 453) in which 15% (66/453) of the samples showed high reactivity (> 5-fold higher than a low control), while in 6% (28/453) of samples the level of anti-cTnI antibodies were elevated by a factor of 10 or more above the low control. The groups of Honjo [Science 291 (2001): 319–22] and Goser [Circulation 114 (2006): 1693–702] have demonstrated that antibodies reactive with cardiac troponin-I induce dilated cardiomyopathy (DCM) like symptoms in rodent models. In humans DCM is a progressive, heterogeneous disease with multiple etiologies that often lead to the clinical symptoms of congestive heart failure (CHF) and concomitant increases in the plasma level of brain natriuretic peptide (BNP). In this study we screened BNP-positive plasma samples (n = 200) by a chemiluminescent microplate immunoassay for the presence of anti-cardiac troponin-I IgG. The median response of 1.2502 (95% CI 1.1011 to 1.5970) was not statistically different (Mann-Whitney, P = 0.1879) than the normal population. The incidence of elevated anti-cTnI IgG were similar to the apparently healthy normal donor population: 28/200 (14%) samples exceeded the low control by a factor of 5, while in 9/200 (4.5%) samples the level of anti-cTnI antibodies were elevated by a factor of 10 or more. The significance of the presence of antibodies to self-antigens in apparently healthy populations has only recently been recognized in light of the slow progression of many autoimmune diseases. In this study, the median age of the normal donor population was 38 yrs while that of the BNP positive population was 81 yrs. Further clinical study is needed to determine the relevance of autoantibodies to cardiac troponin in the development and outcome of DCM and other cardiac pathologies.

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DEPRESSION AND HEART DISEASE - A CROSS CULTURAL VIEW

A. Nanhay[1], L. Villano[2]. *[1]University of the State of Rio de Janeiro (UERJ) - Faculty of Medical Sciences - Discipline of Psychiatry. [2]University of the State of Rio de Janeiro (UERJ) - Faculty of Medical Sciences - Discipline of Psychiatry*

Objectives: Depression has been cited as an important psychosocial factor in the pathophysiology of Heart Disease (HD).The aim of this research is the comparison of the prevalence of the ICD-10 Depression diagnosis among self-reported HD patients by sex and age, from the General Health Care Centers of the WHO/PPGHC (Psychological Problems in General Health Care) Project. **Methods:** The present study investigates Depression on 523 self-reported HD patients of 09 centers from the PPGHC Project: ANKARA (ANK), BERLIN (BER), MAINZ (MAI), MANCHESTER (MAN), NAGASAKI (NAG), PARIS (PAR), RIO DE JANEIRO (RIO), SANTIAGO (SAN) and SHANGAI (SHA). Centers showing inconsistent data were excluded from this study. The frequencies and statistical tests were generated by the SPPS 8.0 software. **Results:** The prevalence of Depression in HD from these centers were: ANKARA 41,7%; BERLIN 29,0%; MAINZ 33,3%; MANCHESTER 36,1%; NAGASAKI 7,2%; PARIS 41,2%; RIO DE JANEIRO 34,2%; SANTIAGO 50% and SHANGAI 10,7%. There is a significant association between Depression an HD in: ANK (OR=2,2; p=0,03), BER (OR=2,6; p=0,002) and MAINZ (OR=3,0; p=0,006). It was found a tendency of association in PAR (OR=1,5; p=0,3), RIO (OR=1,2; p=0,45), SAN (OR=1,3; p=0,6) and SHA (OR=1,2; p=0,5). There were no association in MAN (OR=1,0; p=0,98) and in NAG (OR=0,96; p=0,94). The distribution of Depression in HD by sex (male vs. female) was: ANK 20,0%vs.45,2%; BER 20,0%vs.35,1%; MAI 27,8%vs.41,7%; MAN 15,4%vs.47,8%; NAG 12,5%vs.2,7%; PAR 33,3%vs.47,4%; RIO 18,2%vs.40,7%; SHA 16,2%vs.8,7%. The distribution of Depression in HD by age (<45 years-old vs. >45 years-old) was: ANK 50,0%vs.37,5%; BER 31,6%vs.27,9%; MAI 37,5%vs.31,8%; MAN 57,1%vs.31,0%; PAR 38,5%vs.42,9%; RIO 47,4%vs.29,8%; SAN 75,0%vs.41,7%; [SHA] 8,8% vs.12,0%. **Conclusion:** Across 09 Primary Care Centres, the prevalence of Depression in HD was very high, ranged from 7,2% (NAGASAKI) to 50% (SANTIAGO). A significant association between Depression and HD was found in ANK, BER and MAINZ. A tendency of association in PAR, RIO, SAN and SHA. There were no association in MAN and in NAG. The prevalence of Depression was higher for Heart Disease females in 06 are centres (ANK, BER, MAI, MAN, PAR and RIO). It was observed a tendency of Depression to be higher in Heart Disease patients under 45 years-old, in 06 centers (ANK, BER, MAI, MAN, RIO and SAN), as well.

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Velocity vector imaging for assessment of mechanical dyssynchrony and its comparison to color coded tissue Doppler imaging.

A. C. Parameswaran[1], T.P. Shah[1], A Amanullah[1]. *[1]Albert Einstein Medical Center*

Background: In a recent multicenter trial (PROSPECT), color coded tissue Doppler imaging (TDI) was found not useful in real-world clinical settings for assessing mechanical dyssynchrony. TDI has technical limitations such as needing images with high frame rates and is dependant on the transducer angle. Also, it measures only longitudinal velocities and not radial or circumferential velocities. A new B-mode tissue tracking method called velocity vector imaging (VVI) is available to assess mechanical dyssynchrony. To date no studies have directly compared TDI with VVI for assessing dyssynchrony. **Materials and methods:** 36 consecutive patients who had TDI and VVI done at the same session were included in the study. Longitudinal velocities at the basal anterior, inferior, lateral and septal walls using TDI were compared with VVI. Radial velocities in these walls and circumferential velocities using the short axis views were also measured using VVI. **Results:** The final cohort consisted of 32 patients with complete data, 62% male, age 63±16 years, QRS duration 76±40 ms and 22% with ejection fraction(EF) <55%. *Comparison of VVI with TDI:* All patients with septal-lateral (S-L) wall delay >65 ms by TDI also had significant S-L wall delay by VVI (all >100 ms). In 6 patients adequate TDI could not be obtained due to inadequate frame rates or due to inconsistent TDI tracings. VVI could be performed and interpreted in all patients. *Longitudinal velocities by VVI:* In those with dyssynchrony, S-L wall delay and maximum delay between all walls were significantly higher. The time to peak (TTP) velocities were earliest in the basal septal and anterior walls. The absolute velocities at the basal septal and lateral walls were significantly lower in those with dyssynchrony. *Circumferential velocities by VVI:* The circumferential velocities in the septal walls were lower in those with dyssynchrony. *Radial velocities by VVI:* The basal septal wall had significantly earlier TTP radial velocities in those with dyssynchrony. *Comparison between EF>55% and EF<55%:* In those with EF<55%, the longitudinal and circumferential velocities of all the walls were significantly lower. The TTP radial velocity of the basal septal wall and TTP circumferential velocities of all the walls were significantly lower. The maximum delay in TTP longitudinal and circumferential velocities bewteen all walls were significantly higher in those with EF<55%. **Conclusions:** VVI correctly identified all patients with mechanical dyssynchrony; even in those patients who had poor images by TDI. The cut off for VVI for mechanical dyssynchrony is likely higher (in the range of 75–100 ms compared to 65ms for TDI). VVI also demonstrated radial and circumferential dyssynchrony in addition to longitudinal dyssynchrony. The circumferential velocities in the septal walls were lower; this may result in poor left ventricular twist and dyssynchrony. Assessing radial and circumferential velocities in addition to longitudinal velocities provides further information on left ventricular dynamics and may be additive when assessing dyssynchrony. VVI is an attractive alternative to TDI for assessing mechanical dyssynchrony and does not carry the technical limitations of TDI mentioned above.

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Intraoperative coronary angiography – an approach to quality control and logistic background for emergency simultaneous catheter-based interventions during minimal invasive coronary bypass surgery

G Friedrich[1], C Kolbitsch[1], T Schachner[1], N Bonaros, S Abbrederis, G Laufer, O Pachinger, J Bonatti. *[1]Medical University Innsbruck*

Background The implementation of innovative minimal invasive coronary artery revascularization procedures requires tight quality control of performed anastomoses. Robotically assisted and off pump coronary bypass grafting, in particular total endoscopic (TECAB) procedures require robust and immediate proof of graft patency to compete with conventional bypass surgery or percutaneous coronary interventions. We sought to assess the safety and efficacy of C-arm based bypass- and coronary angiography in quality control of robotically assisted bypass surgery and to establish a potential platform for a simultaneous catheter-based coronary intervention. **Methods** In 118 patients (mean age 59, 80% male) minimal invasive coronary surgery procedures with 133 graft implantations were performed: 55 TECAB, 42 off pump bypass procedures (OPCAB), 12 minimal invasive direct bypass operations (MIDCAB) and

24 robotically via sternotomy sutured anastomoses (daVinci telemanipulator, Intuitive Surgical Inc., Sunnyvale,Ca). In all patients intraoperative angiography was carried out using a mobile C-arm X ray system (OEC 9800, GE). Graft patency and anastomoses quality were recorded. In cases of transient or persistent signs of coronary ischemia, documented by ECG or echocardiography, and differing from the bypass target vessel region, additional angiography of native coronaries was performed. **Results** Intraoperative angiography could be performed in all 118 patients with attempted investigation of 133 grafts. 126 (95%) of all grafts could be visualized with good quality. Target vessel or graft spasm occurred in 78/126 (62%). In 12 patients (10%) immediate surgical revision due to graft anastomotic occlusion or bleeding was required. In 2 patients where non-target vessel regional ischemia occurred, intraoperative angiography revealed an occlusion of the native preoperative non-stenotic RCA. In both cases an immediate intraoperative percutaneous emergency intervention with PTCA and stenting was successfully performed. No angiography-related complications occurred. We observed a perioperative myocardial infarction in 3 patients and no hospital mortality. **Conclusions:** Intraoperative bypass- and coronary angiography provides a safe and high quality control of coronary revascularization in innovative bypass surgery and may be used as logistic background for simultaneous emergency catheter-based coronary interventions.

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Metabolic syndrom by new IDF definition and mortality outcomes in patients with manifest coronary heart disease.

O. Mayer[1], J. Šimon[1], M. Plášková[2], R. Cífková[2]. *[1]2nd Dept. of Internal Medicine, Charles University, Medical Faculty, Pilsen, Czech Republic [2]Dept. of Preventive Cardiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic*

Background: A new definition of metabolic syndrome (MS) was stated by International Diabetes Federation (IDF) in 2006. This definition consisted from increased waist circumference (males ≥94, females ≥80cm) plus two of any of the following factors: hypertriglyceridemia (≥ 1.7mmol/l), reduced HDL (m<1.03 or f<1.29mmol/l), raised blood pressure (≥130/85 mmHg) and raised fasting glucose (≥5.6mmol) or known diabetes. We aimed to prove, whether presence of such defined MS influenced mortality outcomes in patients with manifest coronary heart disease (CHD). **Methods:** 741 patients (536 males and 205 females, mean age 59.2 years), 6–24 months after acute coronary syndrome or revascularization (Czech samples of EuroAspire I and II studies) were included into prospective study. The 6 years vital status was ascertained. **Results:** The sample was divided into two groups by above mentioned definition for those with and without MS. The both groups did not differ by age, gender and by proportion of basic cardiovascular medication (statins, betablockers, etc). Patients with MS showed significantly higher systolic and diastolic blood pressure, body mass index, LDL-cholesterol, triglycerides and glucose, while lower HDL-cholesterol. The 6-years total mortality was in patients with MS slightly higher, but did not reached statistical significance (11.0 %, 9.9%, in patient with and without MS, resp; p=0.64) No association was found between MS and 6-years total mortality also by multiple logistic regression. **Conclusion:** In our sample, metabolic syndrome (by new definition of IDF) did not significantly influence the mortality outcomes of CHD patients. (supported by Ministry of Health CZ, grant no. 9333–3)

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Intraoperative detection of porcelain aorta remains a challenging dilemma in coronary artery bypass surgery

H.B. Bittner[1], R.R. Battellini[1], A.J. Rastan[1], F.W. Mohr[1]. *[1]Heart Center Leipzig, Leipzig,Germany*

Introduction: Patients with porcelain or severe calcification of the aorta are a challenging problem for the cardiac surgeon regarding bypass technique, choice of conduit and selection of proximal anastomotic sites due to the high incidence of devastating thromboembolization.Modifications in the standard revascularization technique are required to reduce the probability of stroke: 1. different arterial cannulation sites(aortic arch,innominate,axillary artery), 2.arterial inflow from the internal thoracic arteries, innominate,carotid arteries, 3. construction of the distal anastomosis in fibrillatory arrest or beating heart, 4. Hypothermic circulatory arrest,replacing of the ascending aorta, proximals on the graft 5. Intraaortic balloon clamping and retrograde cardioplegic arrest. **Patients and Methods:** Between 01.06.2004 and 31.05.2007, intraoperative detection of porcelain aorta and subsequent change of operative techniques occurred in 49 patients out of 3.296 coronary cases (0,014%), in which a technique of "no-touch" and "no cannulation" or different cannulation site was applied. Age: 60−84y, mean 76+-5, sex: 29% females, unstable angina :55%,acute MI :10%,left main disease :38%, LV function EF<35%: 25%. **Results:** Off-Pump Beating Heart n= 73,4% (36 cases). On-Pump Beating Heart n=26,5% (13 cases). Cannulation sites: aortic arch n=2, axillary artery n=5, femoral artery n=6. Distal anastomoses: 2.6 +-0,6. Proximal inflow: Braquiocephalic Trunk or left carotid:32%, total arterial (radial in mammary) or composite graft (vein in a mammary) connections 28%,mammaries alone 50%. Complications: Only one major neurological event (2%), discharged on PO day 20. One hospital death (2%).This patient has had NSTEMI and therapy resistant coronary artery spasm and thrombosis of the saphenous graft anastomosed to a LIMA. Three patients presented with significant CK-MB fraction elevation. cardiac recatheterization revealed patent composite grafts and anastomoses. **Discussion:** The significance of atheroemboli from severe atherosclerosis of the ascending aorta and the associated high incidence of cerebral vascular accidents after clamping or cannulation of the ascending aorta are well documented. A variety of surgical technique modifications have been described to manage this problem. The proposed procedure may benefit these neurological high risk patients.

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Multislice Computer Tomographic Coronary Angiography for Preoperative Risk Stratification in Patients undergoing Liver Transplantation

S Abbrederis[1], G Feuchtner[1], O Pachinger[1], W Vogel[1], E Gassner[1], I Graziadei[1], A Mallouhi[1], G Friedrich[1]. *[1]Medical University Innsbruck*

Purpose: Multislice Computer Tomographic Coronary Calcium Scoring (CCS) and angiography (MSCTA) are non-invasive methods detecting coronary artery disease (CAD). Patients (pts) with end-stage liver disease scheduled for transplantation have a high bleeding rate during invasive angiography (CA) and are often not suitable for cardiac stress testing. We evaluated MSCTA in the preoperative risk assessment in these pts. **Methods:** Of 80 pts undergoing liver transplantation since 2003, MSCTA with CCS using 16 or 64 row technique (Siemens Sensation,Germany) was performed in 40 pts: Low CCS (< 300) and non-stenotic MSCTA pts (22) were not referred to CA. In one case a low CCS with non stenotic MSCTA pt was referred to CA due to a predescribed moderate mitral insufficiency. CCS >300 pts, combined or not with positive MSCTA findings (>50% percent stenotic plaques) and low CCS pts with positive MSCTA were compared to CA (n=17). CA without prior CT investigation was carried out in 16 pts, 24 pts (young age /negative stress testing) had no angiography at all. Peri- and postoperative outcome was evaluated for each diagnostic approach. **Results:** Compared to CA, pts with positive MSCTA and / or high CCS had diffuse CAD without stenotic lesions (14/17). In 3 pts CA revealed ≥ 70 % LAD stenoses with subsequent angioplasty (1) or conservative therapy (2). Mild diffuse CAD was found in the 16 pts with only preoperative CA. Peri-and postoperative outcome was similar in the different diagnostic groups: 77/80 pts had no cardiovascular peri-or short term postoperative complications; 3 pts (2 without CA or CTA, 1 with CA diagnosis of diffuse CAD) had postoperative reversible ventricular cardiac arrythmia or heart failure complications. **Conclusion:** MSCTA combined with CCS offers a reliable non-invasive imaging technique for the assessment of CAD and the peri and postoperative risk stratification in pts undergoing liver transplantation. CA may be reserved to pts with severe coronary pathology detected by MSCTA allowing additional preoperative therapeutical options.

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An Eight-Week, Multi-center, Randomized, Double-blind, Parallel Group study Comparing The Efficacy and Safety of Amlodipine/Valsartan combination therapy Versus Amlodipine Monotherapy in The Treatment of Stage 2 Hypertension

M. Destro[1], L. Satlin[2], A. Kandra[3], P. Brunel[3]. *[1](on behalf of the Study Investigators), Ospedale Arnaboldi, Azienda Ospedaliera di Pavia, Broni, Italy [2]Novartis Pharmaceutical Corp, East Hanover, NJ [3]Novartis Pharma AG, Basel, Switzerland*

Guidelines recommend combination therapy in stage 2 hypertension. Combination of agents with complementary mechanisms of action also increase the probability of treatment success, especially in patients more difficult to treat, such as stage 2, elderly or diabetic hypertensives. This study was designed to prospectively compare for the first time the efficacy and safety of an antihypertensive regimen starting with a fixed-dose combination of the calcium channel blocker, amlodipine, with an angiotensin receptor blocker, valsartan, (A/V) versus a regimen starting with amlodipine alone (A) in patients with stage 2 hypertension. In this multinational, multicenter, randomized, double blind, parallel group, eight weeks study, 646 adult male and female subjects with a baseline sitting systolic blood pressure (MSSBP) ≥160 mmHg (MSSBP: 171 mmHg [SD 8.7]) were assigned to receive q.d. treatment with either A/V 5/160 mg (N=322) or A 5 mg (N=324) for 2 weeks. At this point, doses were force-titrated to 10/160 mg for A/V and 10 mg for A, for two additional weeks. Patients with SBP≥130 mmHg at week 4 were allowed to receive hydrochlorothiazide 12.5 mg q.d. during the final 4 weeks. Patients enrolled had a mean age of 58±10 y (27% with age≥65 y), 50% were female, 82% Caucasian and 11% diabetic. At week 4, change in MSSBP from week 0 (primary endpoint) was -30.1±0.8 mmHg with A/V versus -23.5±0.8 mmHg with A (P<0.0001). Final median MSSBP was 137±13 mmHg in the A/V group compared to 145±13 mmHg in the A group (P<0.0001). Reductions in SBP were consistently achieved at greater levels with A/V vs. A, regardless of gender, age, race/ethnicity or diabetes status. At the end of 8 weeks, a total of 57% of patients receiving A/V had a SBP<140 mmHg (95%CI: 52, 63) compared to only 36% of patients receiving A (95%CI: 30, 41). MSSBP of <130 mmHg was achieved in more than twice as many subjects in the A/V group compared to A (26% [95%CI: 21, 31] vs. 11% [95%CI: 7, 14], respectively), three times as many subjects with age≥65 y (17% [95%CI: 9, 26] vs. 5% [95%CI: 0, 10] for A/V vs. A, respectively) and almost four times as many diabetic subjects (22% [95%CI: 8, 36] vs. 6% [95%CI: 0, 13] for A/V vs. A, respectively). Both treatments were generally well tolerated, with an overall rate of adverse events similar in both groups. Importantly, peripheral edema was only observed in 13% of subjects receiving A/V compared to 18% receiving A (OR:0.76; 95%CI: 0.5, 1.2). The results of the present study indicate that an antihypertensive regimen starting with an A/V combination is superior to a regimen starting with A alone to achieve BP control, especially in patients known to be more difficult to treat such as elderly and diabetic hypertensives.

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Value of first-line hypertension treatment with an amlodipine/valsartan regimen for systolic blood pressure control: analyses in difficult-to-treat populations

M. Destro[1], L. Satlin[2], A. Kandra[3], P. Brunel[3]. *[1](on behalf of the Study Investigators), Ospedale Arnaboldi, Azienda Ospedaliera di Pavia, Broni, Italy [2]Novartis Pharmaceutical Corp, East Hanover, NJ [3]Novartis Pharma AG, Basel, Switzerland*

Hypertension control remains as a key unmet medical need with close to 70% of hypertensives not at goal, primarily due to lack of achievement of systolic blood pressure (SBP) control. Achieving SBP control is particularly challenging among populations recognized as difficult-to-treat, such as the elderly, isolated systolic hypertension (ISH), severe hypertension

(SBP≥180 mmHg), obese (BMI≥30 kg/m^2) and diabetic patients. The present exploratory analysis was conducted to evaluate SBP control rates among representative subjects from these patient populations participating in a clinical trial that compared two different approaches to manage hypertension. With the first approach, a fixed-dose combination of the calcium channel blocker amlodipine with the angiotensin receptor blocker valsartan (A/V) was used as first-line therapy. With the second approach, treatment was initiated with amlodipine alone (A). Thus, adult female and male subjects with a baseline MSSBP≥160 mmHg were randomly assigned to receive double-blind treatment with either A/V 5/160 mg or A 5 mg for 2 weeks. At this point, doses were force-titrated to 10/160 mg for A/V and 10 mg for A, for two additional weeks. Patients with SBP≥130 mmHg at week 4 were allowed to receive hydrochlorothiazide 12.5 mg q.d. during the final 4 weeks. Results for change in MSSBP from baseline to week 4, as well as MSSBP control rates at two different levels are presented in the Table.

TABLE. SYSTOLIC BP CHANGE AND CONTROL RATES AT WEEK 4 ACROSS PATIENT POPULATIONS

	Elderly		ISH		Severe HTN		Obese		Diabetes	
Treatment	A/V	A	A/V	A	A/V	A	A/V	A	A/V	A
N	75	76	78	98	46	55	134	145	34	36
Mean DMSsBP (SEM)	**-29.7**** (1.6)	**-21.7** (1.7)	**-27.2*** (1.8)	**-22.3** (1.8)	**-40.1**** (1.9)	**-31.7** (1.9)	**-30.2**** (1.2)	**-22.9** (1.2)	**-29.5*** (2.6)	**-22.7** (2.9)
MSSBP <140 mmHg, % (95%CI)	45 (34,56)	**12** (4,19)	**51** (40,63)	**31** (21,40)	**27** (14,40)	**11** (3,20)	**54** (45,62)	**25** (18,32)	**47** (30,64)	**17** (4,29)
MSSBP <130 mmHg, % (95%CI)	**17** (9,25)	**4** (0,8)	**29** (19,39)	**8** (2,13)	**16** (5,26)	**2** (0,6)	**23** (15,30)	**7** (2,11)	**19** (5,32)	**3** (0,8)

*P<.05; **P<.005 vs.A

A/V provided greater SBP reductions at week 4 versus A in all sub-groups. Control rates at a level of <140 mmHg were higher with A/V vs. A, with differences of up to 3-fold in elderly and diabetics. SBP control rates at level of <130 mmHg were 3- to 8-fold greater in some sub-groups. In conclusion, first-line antihypertensive therapy with A/V offers superior SBP control vs. A in populations recognized as difficult-to-treat.

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Efficacy and Safety of amlodipine/valsartan in Hispanic subjects with stage 2 hypertension

M. Destro[1], L. Satlin[2], A. Kandra[3], P. Brunel[3]. *[1](on behalf of the Study Investigators), Ospedale Arnaboldi, Azienda Ospedaliera di Pavia, Broni, Italy [2]Novartis Pharmaceutical Corp, East Hanover, NJ [3]Novartis Pharma AG, Basel, Switzerland*

Hypertension is highly prevalent and often not adequately controlled in patients of Hispanic origin. This study compared the efficacy and safety of an amlodipine/valsartan (A/V) fixed-dose combination in patients with stage 2 hypertension. Subjects with a baseline mean sitting systolic blood pressure (MSSBP) ≥ 160 mmHg received double-blind treatment with A/V 5/160 mg or A 5 mg QD for 2 weeks, and were force-titrated to 10/160 mg for A/V and 10 mg for A. Patients with SBP ≥ 130 mmHg at week 4 were received hydrochlorothiazide 12.5 mg q.d. for a further four weeks. Of 646 randomized patients, 221 patients were of Hispanic origin (A/V, n = 111; A, n =110). After 4 weeks of treatment, MSSBP change in this population was -29.1±2.3 mmHg with A/V versus -23.0±2.3mmHg with A (P<0.0015). After 8 weeks, 62% Hispanic patients receiving A/V had SBP < 140 mmHg (95% CI: 52, 70) compared with only 43% of Hispanic patients in the A group (95% CI: 34, 53). SBP of < 130 mmHg was achieved in nearly twice as many Hispanic patients receiving A/V compared to A alone (30% [95%CI: 21, 39] vs. 16% [95% CI: 9,23] respectively). Both treatments were well tolerated. This study demonstrated that A/V produced greater BP reductions and more control rates compared with A in Hispanic patients with stage 2 hypertension.

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Tissue Doppler Imaging and Contrast Echocardiography: new methods in diagnosing intracardiac structures.

M. Hlawaty[1], W. Tracz[1], M. Olszowska[1], M. Kostkiewicz[1], M. Pasowicz[1], P. Podolec[1]. *[1]Institute of Cardiology, John Paul II Hospital, Kraków, Poland [2]Institute of Cardiology, John Paul II Hospital, Kraków, Poland [3]Institute of Cardiology, John Paul II Hospital, Kraków, Poland [4]Institute of Cardiology, John Paul II Hospital, Kraków, Poland [5]Institute of Cardiology, John Paul II Hospital, Kraków, Poland [6]Institute of Cardiology, John Paul II Hospital, Kraków, Poland*

Background: Standard echocardiography is currently used to assess patients (pts) with intracardiac masses. However, there are pts for whom 2D gray-scale echo features are not clear. The precise morphologic characteristic of intracardiac tumors has important implications for further treatment. The aim of the study was to assess the role of Tissue Doppler Imaging (TDI) and Contrast Echocardiography (CE) in identifying intracardiac structures. **Methods and results:** Echocardiographic study (TTE, TEE) with TDI was performed in 140 pts: 22 pts with aortic and 14 with mitral valve diseases, 18 with atrial myxoma, 8 after pulmonic emboli, 3 with angiosarcoma, 25 pts after myocardial infarction and 50 pts after implantation ASD Amplatz occluder. In difficult echocardiograms CE (Optison) was used to improve detection on endocardial border, clots or tumors and reduce artifacts. Comparing the motion of intracardiac masses with the surrounding tissue three types of motion were differentiated related to direction, velocity and phase: A-concordant motion with no difference in direction, velocity and phase; B-coherent motion with a phase difference depending on motion of the surrounding tissue but out of phase; C- incoherent motion due to free oscillation. Concordant motion was found in rigidly fixed left ventricular clot (n-15), septal occluder (n=50), small left atrial myxoma (n-3). Coherent motion was present in pts with mural left atrial clot (n-10) and angiosarcoma (n-3). Incoherent motion was noted in valvular vegetation (n-26), right heart thrombus (n-5) and large myxoma (n-15). Out of 140 pts 30 (21,4 %) had one or more embolic events. The incidents of embolism were compared with the echocardiographic characteristics (localization, size and mobility) of the vegetations, clots or tumors. In 10 pts with dense spontaneous echo contrast in the left ventricular aneurysm, thrombus presence was excluded on the basis of CE. **Conclusions:** TDI improves the detection of intracardiac structures and allows correct definition of their morphology and motion. The morphologic characteristics of vegetations, tumors or clots is helpful in predicting embolic events and suggests urgent operation. CE is a useful additional diagnostic tool in evaluating cardiac tumors and thrombus as it markedly improves their visualization and reduces artifacts.

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Transient myocardial stunning syndrome: Prevalence and clinical features in a population of a general hospital

L. Hamity[1], F. Ramello[1], A. Moyano[1], L. Marani[1], E. Moreyra[2], L. Alday[1]. *[1]Air Force Hospital, Córdoba, Argentina [2]San Lucas Medical Centre, Córdoba, Argentina*

Objectives: We assessed the prevalence and clinical features of transient myocardial stunning syndrome with normal coronary arteries in patients undergoing coronary arteriography over the past 3 years in a small general hospital. **Methods:** Retrospective observational study of 305 diagnostic cinecoronary angiographies in 302 patients performed between July 1st 2004 and June 30th 2007. Criteria for inclusion were severe acute chest pain with normal coronary arteries and temporary left ventricular systolic dysfunction regardless the region. We describe the demography of patients meeting the criteria and the follow-up findings. **Results:** Patients had an age range from 46 to 91 years (mean 66.5 + 8.4 SD). There were 186 (62%) males and 116 (38%) females. Six females (2% of the total and 5% of all women) fulfilled the diagnostic criteria. They were aged between 46 to 65 years (median 56.5). All had emotional precipitating factors and presented with severe chest pain requiring admission to the coronary care unit. Five showed deep anterior wall T wave inversion and one postero-lateral ST segment elevation on the EKG. Mild cardiac enzyme raising was always present. The coronary arteries were normal in all of them. Apical left ventricular dyscinesia was present in 4 (including mild mitral regurgitation in one of them), in the mid-ventricular region in another, and generalizad in the remaining. The EKG abnormalities, the left ventricular dysfunction and even the mitral insufficiency as assessed by color Doppler echocardiography returned to normal in all patients within a 2-month period. The median follow-up time was 1.7 years after discharge. There were recurrences in 2 patients, 8 and 18 months respectively, following the initial presentation. Patients were treated as in acute coronary syndromes. Three of them were discharged on beta-blockers, and the other 3 on calcium channel antagonists. All of them received aspirin and risk factors were addressed. **Conclusions:** Transient myocardial stunning syndrome is now more frequently recognized with a prevalence of 5% in women requiring cinecoronariographic study in our hospital. Though it has also been described in men, it occurs almost exclusively in middle age females usually following an emotional precipitating factor. The pathophysiology is still unknown though some speculations have been put forward. The short term outcome is good but recurrentes do occur.

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Lengthening of the Aorta with Advancing Age: MRI Study

H. Tanaka[1], K Hayashi[2], T Yokoi[2], J Sugawara[1–2]. *[1]University of Texas at Austin [2]National Institute of Advanced Industrial Science and Technology*

Background: The vasculature undergoes changes in structure and function with advancing age. It is generally believed that the aorta and elastic arteries dilate and become tortuous with aging. However, it is not known if such structural changes in the aorta occur with aging in absence of concomitant cardiovascular disease, as the currently available information is derived from cardiac patients and autopsy. Additionally, it is not known what physiological factors are responsible for the age-related lengthening of the aorta. **Methods:** We studied 229 apparently healthy adults (114 men and 115 women) varying widely in age (19–79 years). Using 1.0 T MRI system, we obtained transverse images of the aorta at end-diastole (gradient echo method; TE/TR: 11.0/4.2; FOV: 400*400mm, thickness: 5mm, slice gap: 0 mm) and analyzed using the three-dimensional tracing. Prior to the actual data collection, the accuracy of the MRI measurements was verified using the custom-made phantom simulating the human aorta. Central blood pressure and arterial wave reflection were estimated from the pressure waveforms obtained with the arterial applanation tonometry. **Results:** The length of the whole aorta was significantly associated with age (r=0.43). After the aortic length was adjusted for the torso length, the relation between the aortic length and age became even stronger (r=0.65). When the aorta was divided into the ascending aorta (the aortic valve to the top of the aortic arch) and the descending aorta (the top of the aortic arch to the bifurcation), it was revealed that the length of the ascending aorta increased markedly with age (r=0.72) whereas the length of the descending aorta remained unchanged with age (NS). The ascending aortic length was positively and significantly associated with brachial blood pressures (r=0.37) and even more so central systolic blood pressure (r=0.47). Stepwise multiple regression analyses revealed that the strongest physiological determinant of age-related increases in the ascending aorta was central systolic blood pressure. **Conclusions:** These results indicate that the human aorta lengthens with advancing age, even in healthy humans primarily due to the elongation of the ascending aorta and that the length of the descending aorta remains unchanged with aging. Changes in the aortic length are closely associated with corresponding increases in central systolic blood pressure with advancing age. Supported in part by the Japanese Ministry of Education (16700499), JSPS, NIH AG20966, and UT-Austin IRC

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Ischemic Cardiopathology in Cuban Women

S. Luis Mario Sollet Lopez[1], Laura Principe[2]. [1]*Cardiocentro, Cuba* [2]*Facultad de Cordoba*

A descriptive study was conducted on ischemic cardiopathology-related mortality in women with a view to describing the evolution of mortality associated to this disease in Cuban adult women and its interconnection with decisive factors, ranging from 1970 through 2006. Our work universe was composed of all the demises resulting from ischemic cardiopathology in Cuban women in the aforementioned years. An estimate was made of the specific mortality rates for females due to heart-related ischemic diseases, subsequently assessed with mobile averages. For the purposes of comparison with selected countries (Japan, France, Canada), an estimate was made of the specific mortality rates caused by myocardial infarction according to age groups, spanning from 1989 through 1994. The determining factors for the Cuban population were analyzed: lifestyles and living standards, bio-genetic aspects, environmental health, healthcare organization and quality. It was found that mortality in this area in females has experienced a slight decrease, but with a man/woman ration of under 1.5 throughout the whole period of study. The high mortality in women could be one of the reasons to explain why Cuban women have recorded a life expectancy rate that is lower than expected as opposed to the level attained by men. This, overall, has caused the sex difference to remain small in relation to other countries. There is a better recovery rate from ischemic cardiopathology in Cuban women than in Cuban men – and, among the former, at intermediate ages (35–64 years of age) than at early or old ages. The main determinants of morbidity and mortality through coronary ischemic disease are, generally and particularly in women, lifestyles and living standards, bio-genetics and public healthcare. Post-menopausic status without substitute therapy brings about an additional risk. The future control strategy of the heart-related ischemic disease is composed of the social approach (health promotion), the medical-social approach (prevention of disease) and the individual medical approach (healthcare and rehabilitation).

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Anomalous Origin of the Left Coronary Artery from the Pulmonary Artery (ALCAPA). Presentation of two cases.

L.M. Sollet Lopez[1], E. Selman Houssein[2], A. Naranjo[3], L. Principe[4], A.E. Gonzalez Morejon[5]. [1]*Cardiocentro, Cuba* [2]*Cardiocentro,Cuba* [3]*Cardiocentro, Cuba* [4]*Facultad Cordoba* [5]*Cardiocentro, Cuba*

The anomaly of the coronary artery is defined as any anatomical pattern deviating from its normal course in terms of origin, number, distribution and trajectory. The anomalous origin of the left coronary artery from the left valsalve sinus, also known as Bland-White-Garland Syndrome, is a rare and serious anomaly that can cause the death of the patient during the first year of life. It has an incidence of 0.25–0.5 of all congenital cardiopathologies. Two cases are presented that were belatedly diagnosed in 2006–2007 (anomalous origin of the left coronary artery from the pulmonary artery). These cases were subjected to surgery through the Intrapulmonary Tunnel Technique or Takeuchi Technique, with satisfactory evolution and recovery and minimum side-effects and residues.

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Assessment of Patients Operated on Complete Anomalous Drainage of Pulmonary Veins According to the Cuban Program for Children's Cardiac Rehabilitation

S. Luis Mario Sollet Lopez[1], Francisco Carballes Garcia[2], Adel Glez Morejon[3], Laura Principe. [1]*Cardiocentro, Cuba* [2]*Cardiocentro, Cuba* [3]*Cardiocentro, Cuba* [4]*Facultad Cordova*

A descriptive study was conducted, with longitudinal, retrospective and prospective cuts, which included those patients operated on complete anomalous drainage of pulmonary veins without any other related anomalies. These surgeries were performed at the Cardiopathology Center of William Soler Teaching Children's Hospital; and the patients underwent the Children's Cardiac Rehabilitation Program in the period spanning from January 1992 through April 2007. The sample was taken from those patients (until December 1999) operated on Complete Anomalous Drainage of Pulmonary Veins without any other anomalies, who were inserted into the Children's Cardiac Rehabilitation Program for more than five years, through their post-op check-ups and with the parents' approval prior to implementing the Program's decisions. A total of 32 patients from various Cuban provinces were included in the study, who had been performed a reconstructive surgery of complete anomalous drainage of pulmonary veins. Of the overall number of patients, 20 (accounting for 62.5%) experienced side-effects and post-op residues. The main difficulties were Tricuspid Failure associated with Pulmonary Failure in 15 patients (45.5%), Small Interauricular Communication in 6 patients (18.2%) and Dilation of Coronary Sinus in 5 patients (15.1%). The arrhythmias detected on the basal EKG of the pre-op process were reduced by half during rehabilitation; and the ergometric variables improved considerably at the last control and check-up with the assistance of the Children's Cardiac Rehabilitation Program. Assessment and psychological monitoring are satisfactory. A total of 62.5% of the patients have a normal average quotient. One-hundred percent of them are connected with some form of social activity. Quality of life was considered to be satisfactory, as well as the prospects of the patients operated on Anomalous Connection of Pulmonary Veins and incorporated into the Cuban Program of Children's Cardiac Rehabilitation.

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The Role of Abnormal Q Waves and ST-Segment Elevation as a Marker for Disease Progression in Hypertrophic Cardiomyopathy

Maky Fabiola Furuki K[1], Hiroya Kawai[1], Katsuko Norisada[1], Mariko Okada[1], Kazuhiro Tatsumi[1], Toshiya Kataoka[1], Tetsuari Onishi[1], Hidekazu Tanaka[1], Kenichi Hirata[1]. [1]*Kobe University Hospital, Graduate School of Cardiovascular Medicine*

Aims: To assess a positive relationship of the electrocardiographic findings of ST-segment elevation (STE) and/or abnormal Q waves with the development of left ventricular enlargement (LVE) and wall motion abnormalities (WMA) in the echocardiogram as a marker for disease progression in a population of Japanese patients with hypertrophic cardiomyopathy (HCM). **Methods:** We enrolled ninety nine patients for this study (mean age 66.6±12.3 years; 65 males and 34 females). Patients were selected and followed up at Kobe University Hospital. Standard 2D, M-mode and Doppler echocardiographic studies were performed using several machines: Toshiba SSH 770A, GE VingMed Vivid 5, GE VingMed Vivid 7, Phillips Sonos 5500. Standard 12-lead surface ECGs were analyzed in search of suspicious abnormalities. **Results:** In the echocardiographic studies there were 40.4% of patients with obstructive type and 50.9% with non-obstructive type of HCM. Wall motion abnormalities comprised 22.2% of all patients; LV enlargement was present in 16.1% of patients. In the electrocardiogram we found 39.3% of STE and 17.1% of Q waves. Three different patterns of STE were acknowledged: concave (10.2 %), straight (16.3 %), and convex (13.1%) that was the group we took in account for comparisons. Convex-type of STE in the ECG was associated with higher grade of LV dysfunction in the echocardiogram. Conversely, straight and concave-type didn't show a significant relationship with any echocardiographic findings. There was a close relation between the electrocardiographic finding of convex STE and the occurrence of WMA and/or LVE in the echocardiography ($P < 0.0001$). Albeit, the sensitivity was low (40%), when combining convex STE with abnormal Q wave and compared again with WMA and/or LVE; the specificity was 89% and the sensitivity increased to 63% ($P < 0.05$). **Conclusion:** The natural course of HCM is very complex and sometimes unpredictable. Electrocardiography is a noninvasive, relatively non-expensive diagnostic tool for evaluation and screening of patients with HCM. We found a strong relationship between the finding of convex STE and/or abnormal Q waves in the ECG with the development of WMA and/or LVE in the echocardiogram, suggesting that secondary changes as myocardial fibrosis, scarring and stiffening are a potential basic mechanism for development of electrocardiographic changes and geometrical changes as well in HCM. Thus, the electrocardiographic finding of convex STE and abnormal Q waves could be valuable for detection of disease progression in patients with HCM.

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HEART RATE, RISK FACTORS, METABOLIC SYNDROME AND GLOBAL CARDIOVASCULAR RISK IN A WORKING POPULATION

M. A. Sánchez Chaparro[1], J. Román García[1], E. Calvo Bonacho[1], M. Cabrera Sierra[1], A. Fernández Meseguer[1], M. Ruiz Moraga[1], J.C. Saínz Gutiérrez[1], C. Fernández-Labandera[1], A. García García[1], A. Gálvez Moraleda[1]. [1]*Ibermutuamur. Mutua de Accidentes de Trabajo y Enfermedades Profesionales de la Seguridad Social n° 274. Madrid. Spain*

Introduction Heart rate (HR) is an independent prognostic factor of cardiovascular mortality, as an expression of sympathetic hyperactivity that favors high blood pressure and atherosclerosis. **Objective** The aim of this study was to assess the relationship between HR, vascular risk factors (VRF), metabolic syndrome (MS) and global cardiovascular risk (VR). **Methods** From May 2004 to December 2006, 576,144 workers, from all Spain's Autonomous Communities, who underwent routine medical check-ups, were included. Mean age was 36.4 years (73% males). All subjects answered a structured questionnaire, and blood pressure measurement (BP) (OMRON M4I), anthropometric and biochemical determinations, were collected. Research study included the relationship of HR (beats/min), by quartiles (< 62; 62–69,5; 69,5–77, >77), with: (a) demographic parameters, (b) VRF, (c) MS (ATP III, 2001), and (d) VR (categories: low/moderate/high, by SCORE for low-risk European countries, subjects with relative risk greater than 4 were considered as high-risk). **Results** A higher percentage of subjects in the upper quartile was found in women (Female(F)/Male(M)): 30.4%/21.6%), age 40–49 years (26.0%); for VRF and VR (upper vs low quartiles): smokers (26.1 vs 23.9%), blood pressure > 140/90 (36.4 vs 16.8%), dyslipemia (25.9 vs 22.6%), glycemia > 126 mg/dl (40.1 vs 14.8%), obesity (BMI>30) (30.8 vs 19.3%), abdominal obesity (F: 35,6 vs 11,7%; M: 31,6 vs 16,7%), MS (38,1 vs 12,7%), and moderate/high VR (31,6 vs 16,7% / 35,6 vs 11,7%) (p=0,0001). These results remained significant after age, sex and tobacco adjustment. In the multivariate analysis (age, sex, BMI and tobacco), lower HR quartile (<62 beats/min) as reference category, the association of high VR increased with increasing HR (62 – 69.5, OR 1.048 (95% CI 1.005–1.094); 69.5–77: OR 1.271 (95% CI 1.220–1.324); > 77 beats/min: OR 2.294 (95% CI 2.208–2.384). **Conclusions** The study shows that, in this working population, HR is associated with VRF, MS and global VR. HR is an useful parameter to select high VR individuals.

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Evaluation of heart pumping function by dynamics of oxygen dept in cardiopulmonary exercise test in patients with coronary artery disease.

S. V. Ivanov[1], YU. A. Izachik, A. B. Pestova, S. S. Ivanov, N. A. Grablina. [1]*Aleksandrov's medical clinic RostAgroExport* [2]*Aleksandrov's medical clinic RostAgroExport* [3]*Central clinical hospital of Russian railways* [4]*Aleksandrov's medical clinic RostAgroExport* [5]*Aleksandrov's medical clinic RostAgroExport*

This study involved 44 patients with coronary artery disease and 20 healthy subjects. Patients were performed the multistage progressive treadmill-test with rest periods after every stage. Respiratory gas analysis was carried with E. Jaeger system (Germany). Straight after every stage was measured the blood velocity in outflow tract of left ventricular to calculating cardiac

output. We used the echocardiograph Sequoia 512 (Simens-Acuson). We measured oxygen dept after every stage. We studied the dynamics of cardiac output è oxygen dept as a function of oxygen consumption (VO2 in METs). In the first grîup (8 patients) cardiac output progressively increased to the maximal work rate (peak VO2 = 6,2±0,4 METs). In the second group (24 patients) cardiac output reached plateau in VO2 = 5,6±0,4 îÅÒs (peak VO2 = 6,8±0,4 METs). In the third group (12 patients) cardiac output increased at first, but at the level VO2 = 4,7±0,8 îÅÒs began to fall (peak VO2 = 6,0±1,0 METs). In normal subjects cardiac output progressively increased to the maximal work rate (peak VO2 = 9,4±0,5 METs). Ischemic depression of ST segment appeared in the first group with VO2 = 3,0±0,5, in the second group - 3,7±0,5, in the third group - 3,8±0,5 îÅÒs. Oxygen dept in the first and second groups slightly progressively increased, as in normal subjects. In the third group oxygen dept slightly low increased at first, as in normal subjects, and then with VO2 = 4,3±1,0 îÅÒs began the expressed progressively increase. That practically coincides with the beginning of falling cardiac output in these patients. Patients of the third group differed from another in age (61±2) (1 group - 47±4, 2 group - 52±3), greater extension of cicatrix areas and greater expressed impairments of contractility (WMSI=1,6±0,2) by the data of echocardiography. Ejection fraction was also lower in this group – 0,45±0,08 (in the first group.- 0,61±0,07, in the second group – 0,58±0,08). Consequently, inadequate growth of an oxygen dept appears in patients with expressed impairment of the pumping function, developed in falling cardiac output from definite level of exercise or VO2. The level of VO2 at a point of inadequate oxygen dept appearance could serve as a measurement of the impairment's degree of pumping function of heart.

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CT Cornary angiography - new perspectives of diagnostic of coronary artery disease. Personal experiences

B. Cveticanin[1], M. Zorc[1]. [1]*HOSPITAL ISOLA, ISOLA, SLOVENIJA* [2]*MEDICAL FACULTY, UNIVERSITY OF LJUBLJANA, LJUBLJANA, SLOVENIA*

Background: Multidetector coronary angiography (MSCT) as noninvasive procedure made this modality as usefull alternative to the gold standard coronary angiography in the evaluation of coronary artery disease. Our study based on 2 year outcomes for patients evaluated with CTA. **Methods:** A contrast - enhanced 64 slice CT was performed (Siemens Somatom Sensation 64 CT scanner) in the group of 851 to evaluate patients suspected of having coronary artery disease and also in patients after coronary by pass surgery to detect progression of the disease. The scan protocol with 64 x 0.6 mm slice collimation 0.33 gantry rotation time and simultaneous ECG registration were used. Images were reconstructed with 0.6 slice thickness at 0.4 mm increment. For postprocessing we used Siemens Syngo Circulation and Siemens Syngo 3D software. All patients with heart rate above 65 bpm at baseline received 50 mg metoprolol orally (mean heart rate was 60 ± 5 mg). Before the angiography, patients also received nitrites sublingual. 100 ml of contrast was utilized and imaging acquisition was performed with the bolus tracking technique (Siemens Syngo CareBolus). The presence of atherosclerotic lesions, calculations of the severity of stenosis, quantification of plaque morphology, bypass graft patency as well as proximal and distal anastomoses were evaluated by two experienced readers. **Results:** All patients had CTA performed with documented follow up. 112 patients had normal results with no soft or calcified plaque. 522 patients had evidence of nonobstructive luminal irregularity. In 133 patients severe obstructive plaques of different coronary arteries were detected. 15 of them had a left main stenosis. All patients with severe lesions ultimately underwent catheterization and immediate stenting if possible. Patients with calcified lesions and diffuse disease had by pass surgery (74% predictive value for revascularization). In our group of 140 patients after bypass surgery, 23 of them had grafts totally occluded, 109 had patent grafts, and 8 had grafts with significant stenosis which was also confirmed by invasive angiography. **Conclusions:** Multidetector 64 slice CTA is a valuable tool for direct visualization of coronary artery disease for specification of coronary lesions (soft vs. calcified plaques) and for assessment of the patency of bypass grafts. Our experiences show that MSCT represents nowadays an exceptional diagnostic procedure for the detection and evaluation of atherosclerotic disease.

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Isolated noncompaction is a biventricular disease

E.K. Wlodarska[1], O. Wozniak[1], B. Lubiszewska[2], M. Konka[1], D. Piotrowska-Kownacka[3], E. Walczak[4], K. Baranska[1], W. Ruzyllo[2], P. Hoffman[1]. [1]*Department of Congenital Heart Diseases, Institute of Cardiology, Warsaw, Poland* [2]*Coronary Heart Disease Department, Institute of Cardiology, Warsaw, Poland* [3]*Department of Magnetic Resonance, Medical University of Warsaw, Poland* [4]*Department of Anatomopathology, Institute of Rheumatology, Warsaw, Poland*

Isolated left ventricular noncompaction is a rare, primary genetic cardiomyopathy characterized by increased left ventricular wall thickness and deep intertrabecular recesses with to-and-fro blood flow in continuity with the ventricular flow. Purpose of the study was to evaluate right ventricular morphology and function in isolated "left" ventricular noncompaction. **Patients and methods:** Standard 2D and Doppler echocardiography was performed in 17 pts with isolated noncompaction of left ventricle (mean age 35,9 y, 13 males). Diagnosis was established according to generally accepted criteria. Coronary angiography (n=6), CMR (n=4) and right ventricular endomyocardial biopsy (n=3) were performed when diagnosis was uncertain. Gross examination and histological study of explanted heart was performed in 1 case. Ventricular noncompaction was referral diagnosis in 1case. Remaining patients were initially diagnosed with arrhythmogenic right ventricular cardiomyopathy (9), dilated cardiomyopathy (3), fibro-elastosis (2), HCM (1) or restrictive cardiomyopathy (1). Mean age at presentation of first symptoms was 19,5 y (0 – 44 y). Heart failure symptomps (NYHA II/IV) were observed in 6 pts, paroxysmal or chronic atrial fibrillation in 5 pts, ventricular tachycardia in 3 pts (polymorphic – in 2 pts), syncope in 3 pts and transient ischemic attacks in 1 pt. ICD was implanted in 1 case; heart transplantation was performed in 1 pt. One pt died because of end-stage heart failure. **Results:** Morphologic and functional changes in right ventricle were seen in 16 pts (94%). Enlargement of right ventricle was observed in 14 pts, hypertrabeculation in 13 pts, global hypokinesis in 7 pts, focal wall motion abnormalities and/or bulges typical for arrhythmogenic right ventricular cardiomyopathy in 10 pts. Three pts had significant tricuspid regurgitation. Endomyocardial biopsy of the right ventricle in all 3 pts showed abnormal thick endocardium, myocardial damage, lymphocyte infiltration, interstitial fibrosis and adiposis. Gross and histological examination of explanted heart revealed "spongy" myocardium not only in left, but also in right ventricle. **Conclusions:** 1/ Isolated ventricular noncompaction is a biventricular disease. 2/ Isolated noncompaction should be considered in a differential diagnosis of arrhythmogenic right ventricular cardiomyopathy.

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PRESENCE AND SEVERITY OF CEREBRAL WHITE MATTER LESIONS ASSOCIATED WITH AN ARTERIAL HYPERTENSION

M. Tundybaeva[1], A. Jussipov[1].

The aim: to study prevalence, cerebral localization and relation with hypertension severity of focal lesions of the cerebral white matter of brain (FLWM) at patients with arterial hypertension (AH). **Material and methods:** 122 non treated patients male and a feminine gender with arterial hypertension of the IInd and IIItd degrees (middle age 54, 8± 4,7) average and high risk without a history of cerebrovascular disease are surveyed. Magnetic-resonance tomography (ÌRÒ) carried out device Magnetom-OPEN, " Siemens AG ". Focal damages of white substance defined as dot sites in the size less than 3 mm, hyperintensive in mode Ò2, but without decrease in signal strength on Ò1-images. 24-hour blood pressure monitoring (BPM) carried out device BPLab ® (Russia). Intervals between measurements the blood pressure (BP) during wakefulness made 15 minutes, during night dream - 30 minutes. The standard set of parameters of a daily rhythm of BP was estimated. The statistical analysis spent the program of medical and biologic statistics « Statistika 6.0", results are submitted, as Ì±m. **Results:** As a whole on group it agrees to data ÌRÒ- neuroimaging at patients with AH in 42 % of supervision (in 51 patients) focal lesions of the cerebral white matter were found out. Focal lesions of the cerebral white matter were localized: in basal ganglia (48, 2 %), a corona radiata (8,6 %) and subcortical white matter (43,2 %). For the further analysis patients ÀH have been divided on: 1 group - patients ÀÃ without FLWM (71 patient, middle age 52,4± 3,2), 2 group patients ÀÃ with FLWM (51 patients, middle age 56,7 ± 4,5). At the comparative analysis of results of BPM at patients with FLWM authentic increase of parameters daily average systolic BP (165±5,4 è 150±4,6 mm.rt.st is revealed, p=0,04) and a time index night systolic BP (82± 7,2 è 55± 8,4, p=0,0461). **Conclusion:** The prevalence of focal lesions of the cerebral white matter in a cohort of patients with an arterial hypertension was 42 %, the established communication of damage of white substance with hypertension severity, allows to consider focal lesions of the cerebral white matter, as one of markers of hypertensive cerebral end-organ damage.

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Pregnancy in patients with prosthetic and homograft heart valves - maternal and fetal outcome.

A. Lesniak-Sobelga[1], M. Kostkiewicz[1], W. Tracz[1]. [1]*Department of Cardiac and Vascular Diseases Jagiellonian University, John Paul II Hospital, Krakow, Poland* [2]*Department of Cardiac and Vascular Diseases Jagiellonian University, John Paul II Hospital, Kraków, Poland* [3]*Department of Cardiac and Vascular Diseases Jagiellonian University, John Paul II Hospital, Kraków, Poland*

Background: The need for antithrombotic therapy in pregnants with implanted mechanical valves constitutes a high risk factor. It is essential to establish a consistent program of antithrombotic treatment in the course of pregnancy that would be safe for the fetus, whilst effectively protecting the mother against any possible thromboembolic complications. **Material:** 65 patients after valve replacement (35 with mechanical prostheses in mitral position – 2 of them were operated in 2nd trimester (TR) of pregnancy, 19 with mechanical and 11 with homograft valves in aortic position) aged 22–39, were observed. Medical history and physical examination, NYHA class assessment, ECG and echocardiography were performed every 1–2 months during consecutive trimesters of pregnancy and after delivery. **Results:** In the 1st TR of pregnancy, among patients with artificial valves 36 were in NYHA I, 14 in NYHA II and 2 patients in NYHA III functional class. Right and left ventricular failure caused by paroxysmal atrial fibrillation and supraventricular tachycardia occured in 9 pregnants (in 7 with mitral prosthesis, in 2 with aortic prosthesis). An impaired left ventricle function (ejection fraction < 50%) was observed in all of them. Embolic complications occured in 2 pregnants after delivery -1 transient symptom of embolia to the central nervous system and 1 embolia to the coronary artery causing myocardial infarction. In the 1st TR 18 pregnants out of 52 (13 with mitral and 5 with aortic prosthesis) with mechanical prostheses received oral anticoagulants, monitored against the INR (in the range of 2.5–3.5), 31 unfractionated heparin subcutaneously, monitored against the APTT factor (the initial value multiplied by 2–2.5 times) and 3 of them were treated by low-molecular-weight heparin, monitored against the anty-Xa levels (0.7–1.2 IU/ml). In the 2nd and 3rd TR oral anticoagulants were administered in all pregnants until the 36th week of pregnancy, subsequently heparin, which was discontinued before delivery, and - depending on hemostasis - resumed within up to 6 –12 hours following the delivery, whereas within 2–3 days after the delivery it was replaced by the oral anticoagulants. **Method of delivery:** 21 vaginally, 26 cesarean sections. Newborns outcome: 7 spontaneous abortions, 3 stillbirths, 6 preterms, 5 intrauterine growth retardation. The mean birth weight of newborns was 3.040 ± 320 g. No warfarin embryopathy in newborns was observed. Pregnants with homografts showed good tolerance of pregnancy and remained in NYHA I class, without any degeneration of the implanted valves. Eleven patients delivered vaginally fullterm newborns, mean birthweight was 3.460 ± 510g. A congenital heart defect was recognized only in one of all alive newborns. **Conclusions:** 1. The main factors determining the successful course of pregnancy and labor in patients with prosthetic valves are unimpaired left ventricular function and properly

functioning prostheses. 2. Appropriate monitoring of anticoagulation decreases the rate of maternal thromboembolic complications and reduces the risk of warfarin embryopathy in newborns. 3. Pregnancy did not result in an acceleration of the degenerative changes in the implanted homograft aortic valves.

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Tissue Doppler post-systolic motion in patients with hypertensive heart disease

A. Stevanovic[1], B. Vujisic-Tesic[2], M. Dekleva[3], LJ. Sevic[1]. *[1]Railway Health Care Institute, Belgrade, Serbia [2]University Institute for Cardiovascular Disease, Belgrade, Serbia [3]University Clinical Center Dr D. Misovic, Belgrade, Serbia*

Background: Postsystolic motion (PSM) is a delayed ejection motion of the myocardium occurring after the aortic valve closure, during a generally prolonged isovolumic relaxation time (IVRT). PSM, as identified by tissue Doppler, appears a hallmark of myocardial ischemia and viability but it may occur also in nonischemic conditions as left ventricular (LV) hypertrophy and volume overload, left bundle branch block and even in normal individuals. **Aim:** The aim of this study was to assess the capability of regional DTI parameters including PSM velocity and duration in estimation of left ventricular function in hypertensive patients. Study patients: 86 nonischemic patients (55±3 years old, 41 men) with essential hypertension without any other heart disease and with preserved LV sistolic function (EF >50%), divided in two groups, with normal and with abnormal myocardial motion. **Methods:** Left atrial dimension (LA) and left atrial volume (LAV), relative wall thicness, cardiac mass and LV enddiastolic and endsystolic dimension (EDD, ESD), both LV volumes (EDV and ESV) and ejection fraction (EF) were estimated by echocardiography. The Doppler tissue myocardial performance index (tMPI), obtained from the tissue Doppler time intervals, allows noninvasive and nongeometric estimation of global ventricular function. Coresponding velocities from tissue Doppler (TDI) at the level of the medial and lateral mitral annulus (e,a,s), PSM maximal velocity and duration were also measured using pulsed-wave TDI. **Results:** Postsystolic myocardial motion was abnormal in 34 patients. The mean average velocity of PSM was 4.8 ± 1.4 cm/s and the mean duration was 75.1 ± 17.7 ms. There was significant correlation between PSM duration and tMPI ($r = 0.371$, $p = 0.031$), and significantly greater of tMPI (74,9 vs 103.9, $t = -5.140$, $p = 0.0002$), EDD (5.04 vs 5.38, $t = -2.843$, $p = 0.006$), EDV (146.4 vs $t = -4.120$, $p = 0.0008$), LAV (39.2 vs 46.7, $t = -2.573$, $p = 0.012$) in group of patients with abnormal postsystolic myocardial motion. **Conclusion:** In hypertensive patients with preserved systolic function left ventricular remodeling process determinated of PSM occurance. Duration of abnormal postsystolic motion wave might be simple and helpful indicator in estimation of left ventricular remodeling process and global left ventricular function in hypertensive heart disease.

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Influenza Vaccination Reduces the Frequency of Coronary Events in Patients after Primary PCI

A. Ciszewski[1], Z.T. Bilinska[1], L.B. Brydak[2–3], M. Romanowska[2], C. Kepka[1], M. Kruk[1], W. Piotrowski[1], W. Ruzyllo[1]. *[1]Institute of Cardiology, Warsaw, Poland [2]National Influenza Center, National Institute of Hygiene, Warsaw, Poland [3]Chair and Department of Family Medicine, Medical University of Warsaw, Poland*

Background: Vaccination against influenza is recommended in patients (pts) with coronary artery disease (CAD), however vaccination immediately after an acute coronary syndrome (ACS) remains controversial. The aim of the study was to evaluate the effect and safety of influenza vaccination on the incidence of coronary events in pts after ACS treated by primary coronary intervention (PCI). **Methods:** A single center, randomized, prospective, double blind, placebo controlled study. The randomization was 1:1 (placebo: active vaccination). Study group: Between October 2004 and February 2005, we included 157 pts; 106 men, mean age 59.1+/-10.9 years. There were 81 pts with STEMI, 43 pts with non-STEMI, and 33 pts with unstable angina. All pts were enrolled and vaccinated before discharge from the hospital after sucessful primary PCI. **Results:** 83 pts received active vaccine, and 74 pts placebo. There were no significant differences in baseline clinical variables between the study groups. Follow-up was censored on October 31st, 2005. No patient was lost to follow-up. Mean follow-up was 275.2+/-59.4 days. Primary end-point: cardiovascular death occurred in 1 patient (1.21%) in the vaccine vs 0 pts in the placebo group (NS). The first composite end-point, MACE (cardiovascular death, or myocardial infarction, or coronary revascularization) tended to occur less frequently in the vaccine group in comparison to the placebo group: 3 pts (3.6%) vs 7 pts (9.5%), respectively, with a hazard ratio of 0.37 (95% CI, 0.10 to 1.43; p= 0.15). The second composite end-point: Coronary Ischemic Event (MACE or hospitalization for myocardial ischemia) occurred significantly less frequently in the vaccine group: 6 pts (7.2%) vs 13 pts (17.6%) in the placebo group, with a hazard ratio of 0.37 (95% CI, 0.14 to 0.98, p=0.046). During the first 50 days after vaccination we observed no event in the active vaccine arm vs.2 events in the controls. **Conclusion:** Influenza vaccination reduces the frequency of coronary events in patients after primary PCI, and may be performed safely immediately after primary PCI.

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EFFECT OF FIXED ANTIHYPERTENSIVE COMBINATIONS ON BLOOD PRESSURE, PULSE WAVE VELOÑITY AND GLUCOSE METABOLISM IN HYPERTENSIVE PATIENTS WITH METABOLIC SYNDROME

S. Nedogoda[1], T. Chalabi, U. Brel, E. Podolskaya, G. Mazina, V. Tzoma, D. Zaremba. *[1]Medical University, Volgograd, Russia*

Aim: To compare the effect of fixed combinations perindopril+indapamide SR (4/1.25 mg) vs enalapril+hydrochlorothiazide (20/12.5 mg) vs captopril+ hydrochlorothiazide (50/25 mg) on blood pressure, pulse wave velocity (PWV) and glucose metabolism in hypertensive patients with metabolic syndrome. **Methods:** After a two-week placebo period 60 (BMI □ 30 kg/m2) mild to moderate hypertensive patients (95 mmHg < DBP < 110 mmHg) with metabolic syndrome (IDF criteria) were randomized to receive perindopril+ indapamide SR (4/1.25 mg) or enalapril + hydrochlorothiazide (20/12.5 mg) or captopril+ hydrochlorothiazide (50/25 mg) for 12 weeks according to a double-blind design. At the end of the placebo period and of each treatment period BP, PWV, fasting and postprandial blood glucose and potassium were measured and insulin sensitivity was assessed by the euglycemic hyperinsulinemic clamp and was expressed as the amount of glucose infused during the last 30 min of the clamp (GIR). **Results:** The treatment with perindopril+indapamide SR more significantly reduced SBP/DBP: □14.8%/□12.9% vs enalapril/HCTZ □13.8%/-9.9% vs captopril+ hydrochlorothiazide □11.3%/-7.5%. PWV was significantly decreased by perindopril+indapamide SR combination (from 12.9±3.1 to 10.8±2.9 m/sec, $p < 0.01$) but was not changed significantly by enalapril/HCTZ and captopril+ hydrochlorothiazide combinations. The myocardial thickness of left ventricular decreased significantly by perindopril+indapamide SR (from 1.2±0.1 mm to 1.0±0.08 mm), at the same time captopril+ hydrochlorothiazide and enalapril/HCTZ combinations caused less decrease of myocardial thickness of left ventricular (correspondingly from 1.2±0.1 to 1.1±0.1 mm, and from 1.1±0.1 to 1.0±0.1 mm, $p < 0.01$). Serum potassium was not changed by perindopril+indapamide SR combination (from 4.9 ± 0.4 to 4.9 ± 0.4 mmol/, $p > 0.01$) but was decreased by enalapril/HCTZ (from 4.8 ± 0.4 to 4.6 ± 0.3 mmol/l, $p < 0.01$) and captopril+ hydrochlorothiazide combination (from 3.6 ± 0.2 mmol/l to 3.4± 0.1 mmol/l). **Conclusions:** these data show that in hypertensive patients with metabolic syndrome perindopril+indapamide SR combination more effectively decreased SBP and DPP, improve insulin resistance, glucose metabolism and vascular elasticity, while enalapril+hydrochlorothiazide and captopril+ hydrochlorothiazide combinations has negative effect on them. These results suggest that fixed combination Perindopril+Indapamide SR should be considered as a treatment of choice in hypertensive patients with metabolic syndrome.

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TREATMENT OF ARTERIAL HYPERTENSION WITH VERY-SMALL DOSES OF ANTIBODIES TO C-END FRAGMENT OF ÀÒ1 RECEPTORS OF ANGIOTENSIN II.

S. Nedogoda[1], V. Petrov, O. Epstein, T. Chaliabi, U. Brel, N. Chepurina, G. Masina, A. Sabanov, S. Tarasov, A. Kolosova. *[1]MEDICAL UNIVERSITY, VOLGOGRAD, RUSSIA*

Background/Aim: The molecular target of very-small doses of antibodies to C-end fragment of ÀÒ1 receptors of angiotensin II (Kardos) is the receptor – mediated effects of angiotensin II, which is considered to be a key neurohormone in development of arterial hypertension and heart failure. **Design and methods:** 50 subjects were included (21 males, 29 females, aged 18 + 70 years). They were affected by mild-to-moderate hypertension.12 subjects had night-picker type of hypertension. 32 patients had non-dipper type of arterial hypertension. All patients underwent: 1) Total Cholesterol, HDL Cholesterol, LDL Cholesterol, Tryglicerids, Glucose blood tests; 2) Plasma electrolytes (potassium, sodium, magnesium); 3) Plasma creatinin; 4) Ambulatory monitoring of blood pressure; 5) Eye grounds. Evaluation was made before treatment and 3 months after starting treatment with Kardos 2 tablets three times a day. **Results:** Kardos was well tolerated in subjects (no patient had any side effects or negative changes in laboratory tests during treatment period). The target levels for systolic and diastolic blood pressure were achieved in 70.6% and 79.4% patients correspondingly (AMBP data). It should be noted that Kardos reduced systolic and diastolic blood pressure at night period more effective. Systolic Blood Pressure (SBP) was reduced from138±10.0 to 133±9.0 mmHg ($p < 0.01$) and Diastolic Blood Pressure (DBP) - from 84.4±9.3 to 81±8.8 mmHg ($p < 0.01$). **Conclusions:** Kardos was found to be effective in treatment of arterial hypertension because of improving of hyperactivity of RAAS, what was accompanied with good tolerance of medication.

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EFFECT OF INDAPAMIDE SR VS HYDROCHLOROTHIAZIDE ON BLOOD PRESSURE, PULSE WAVE VELOSITY AND GLUCOSE METABOLISM IN OBESE HYPERTENSIVE PATIENTS

S. Nedogoda[1], T. Chaliabi, U. Brel, E. Podolskaya, G. Mazina. *[1]MEDICAL UNIVERSITY, VOLGOGRAD, RUSSIA*

Aim: To compare the effect of indapamide SR vs hydrochlorothiazide (HCTZ) on blood pressure, pulse wave velocity (PWV) and glucose metabolism in obese hypertensive patients. **Methods:** After a four-week placebo period 40 obese (BMI "d 30 kg/m2) mild to moderate hypertensive patients (95 mmHg < DBP < 110 mmHg) were randomized to receive Indapamide SR 1.5 mg or hydrochlorothiazide 12.5 mg o.d. for 12 weeks according to a double-blind design. At the end of the placebo period and of each treatment period BP, PWV, fasting and postprandial blood glucose and potassium were measured and insulin sensitivity was assessed by the euglycemic hyperinsulinemic clamp and was expressed as the amount of glucose infused during the last 30 min of the clamp (GIR). **Results:** The treatment with Indapamide SR more significantly reduced SBP/DBP: ƒ{19.1/ƒ{16.2 mmHg vs HCTZ ƒ{8.2/-8.3 mmHg. PWV was significantly decreased by Indapamide SR (from 12,9±3,1 to 10,8±2,9 m/sec, $p < 0.01$) but was not changed by HCTZ (from 13.1±3.1 to 12.7±3.1 m/sec, $p > 0.01$). Fasting and postprandial glucose were decreased by Indapamide SR (consequently from 6.5±0.6 to 5.8±0.5 mmol/l and 9.1±1.1 to 7.9±0.9 mmol/l, $p < 0.01$) but were increased by HCTZ (consequently from 6.6±0.7 to 6.9±0.7 mmol/l and 8.9±1.1 to 9.9±0.9 mmol/l, $p < 0.01$). GIR was not significantly changed by Indapamide SR (from 5.25±0.41 to 5.81±0.52 mg/min/kg, $p > 0.01$) but was decreased by HCTZ (from 5.42±0.43 to 3.88±0.33 mg/min/kg, $p < 0.01$). Serum potassium was not changed by Indapamide SR (from 4.4±0.4 to 4.3±0.4 mmol/, $p > 0.01$) but was decreased by HCTZ (from 4.5±0.4 to 3.8±0.3mmol/l, $p < 0.01$). **Conclusions:** these data show that in obese hypertensive patients Indapamide SR more effectively decreased SBP and DBP, improve insulin resistance, glucose metabolism and vascular elasticity, while an HCTZ has negative effect on them and also on potassium level. These results suggest that Indapamide SR should be considered as a treatment of choice in obese hypertensive patients, a population very often characterized by insulin resistance.

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EFFICACY OF ATORVASTATIN AT PATIENTS WITH METABOLIC SYNDROME

S. Nedogoda[1], V. Tsoma, T. Chaliabi, U. Brel, E. Podolskaya, G. Mazina. [1]*MEDICAL UNIVERSITY, VOLGOGRAD, RUSSIA*

Background/Aim: Effectiveness of Atorvastatin both on glucose and lipid metabolism and also on blood pressure (BP) in elderly patients has been evaluated. **Design and methods:** 27 elderly subjects were included (12 males, 15 females, aged 73 + 8 years). They were all affected by mild-to-moderate hypertension and obesity.13 subjects had impaired glucose tolerance and 14 diabetes mellitus type 2.Pulse wave velocity on carotid-femoral and carotid-radial segments, Endothelial-dependent (EDV) and endothelial-independent vasodilation (EIV) were assessed according to standard protocol before and after 12 weeks of treatment by atorvastatin 10 mg od monotherapy. All patients underwent: 1) Total Cholesterol, HDL Cholesterol, LDL Cholesterol, Tryglicerids 2) Clinical blood pressure measurement; 3) Body mass index (BMI). Evaluation was made before treatment and 3 months after starting treatment with atorvastatin (Liptonorm, Pharmstandart) in a 10 mg-daily dose. **Results:** Before and after the treatment with atorvastatin blood tests levels were respectively: total cholesterol was reduced from 6.2 + 1.1 mmol/l to 4.2 + 0.5 mmol/l ($p < 0.001$); HDL cholesterol - from 1.23+ 0.3 mmol/l to 1.23 + 0.2 mmol/l ($p < 0.001$); LDL cholesterol was reduced from 4.5+ 0.5 mmol/l to 2.4 + 0.8 mmol/l ($p < 0.001$); tryglicerids from 1.4 + 0.3 mmol/l to 1.2 + 0.3 mmol/l ($p < 0.001$); PWV was improved on carotid-femoral segment from 13.9 + 2.1 m/s to 10.1 + 1.9 m/s. Endothelial-dependent (EDV) vasodilatation was significantly increased from 5.9%±1.9 to 8.9%±2.4 ($p < 0.001$). **Conclusions:** Atorvastatin therapy improves lipids and shows the improvement of vascular compliance and endothelial function in patients with hyperlipedemia at high risk group.

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THE EFFECT OF AN EDUCATIONAL INTERVENTION ON CARDIOVASCULAR RISK FACTORS IN AN OVERWEIGHT ELDERLY POPULATION.

F. Santos[1], A Neujahr[1], E Veitenheimer[1], N Schimidt[1], B Santos[1], R El-Kik[1], A Gustavo[1].

The aging of the population is a worldwide phenomenon that causes various anatomical and functional alterations, affecting the health of the elderly. Nowadays, the cardiovascular diseases (CVD) are the main cause of hospitalization and death in the elderly population. **Objective:** Verify the impact of nursing and nutritional actions over cardiovascular disease risk factors in an overweight elderly population. **Method:** Non-controlled clinical trial. The population was composed of 87 overweight elders who participated in the study "Vigilância e Educação em Saúde de uma População de Idosos da Área Adstrita a uma Unidade Básica do Município de Porto Alegre" (Surveillance and Education in the Health of an Elderly Population of an Adstricted Area to a Basic Unit of Porto Alegre City) and the sample was composed of 10 elders. The data collection happened over five months (Dec/2006 to May/2007), through weekly group activities, totalizing eleven meetings. Throughout these meetings, the following themes were discussed: obesity, systolic arterial hypertension (SAH), diabetes mellitus (DM) and dislipidemy, discussing the diagnosis, the treatment and emphasizing the primary prevention through the adoption of healthy life habits. Variables: systolic blood pressure (SBP), diastolic blood pressure (DBP), glicemy (measured through finger-stick testing), abdominal circumference (AC) and Body Mass Index (BMI). The analysis of the data was carried out by means of descriptive and inferential statistics (Nonparametric Wilcoxon Test and McNemar Test). **Results:** There was predominance of females (60%) and married people (55.6%). An increase in SBP and a decrease in the measurements of the other variables were observed, none of these results being significant. There was no significant increase in the practice of physical activity. None of the participants was hospitalized during the intervention period. **Discussion:** The demographic characteristics point to the same direction as the demographic census concerning the elderly. Studies that reached significant results in the decrease of CVD risk factors had a minimum accompaniment period of five months and performed individual interventions. **Conclusions:** The absence of significant results can be attributed to the lack of individual interventions for each participant. However, the reduction of the measurements of the included variables and the absence of hospitalizations point to the importance of educational strategies for the health of the elderly.

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Normal E/Ea ratio values in healthy individuals according to age.

H. Deschle[1], **G. Allende**[1], A. Miranda[1], A. Lakowsky[1], D. Sanchez Luceros[1], J. Carbajales[1], R. Calviño[1]. [1]*SANATORIO MATER DEI*

Background: During the last decades, echocardiographic methods and techniques have improved and expanded dramatically. The E/Ea ratio using Tissue Doppler (as predictive of mean pulmonary capillary wedge pressure) is now used for the management of patients with cardiac heart failure. But the standard range value at different ages has not been published. **Objective:** The aim of this study was to obtain normal range value of the E/Ea ratio grouped by age considering the impact of this parameter on clinical management. **Method:** Between January 2006 and June 2007, 315 healthy patients (p) were included. 150 patients were men. A Doppler Echocardiogram was performed according to standard method. The mitral E flow velocity and Ea lateral mitral annulus velocity using Tissue Doppler was registered and the E/Ea ratio calculated. The patients were divided into groups according to age: a) < 40 years (y), b) 40–59 y and c) >60. The mean value and standard deviation were obtained and compared between groups. **Results:** The results are shown in the table

	Group a (n=98)	Group b (n=134)	Group c (n=83)*
E/Ea ratio	5,36 ± 1.02	6,24 ± 1,58	7,65 ± 2,12

*c/a $p < 0.05$; 95% CI -2.76 -1.81.

Conclusion: The normal values obtained show variation along life with significant differences between group a and c. Different normal values at different ages must be considered to use the E/Ea ratio in the management of patients with cardiac heart failure. This parameter might be lesser accurate in individuals older than 60 due to value dispersion.

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Pediatric cardiovascular rehabilitation program: roll of the aquatic physical therapy.

J. Bleiz[1–2], C. Serra[1], M. Venere[2], G. Guarraccino[2], G. Rocca[2], V. Assinnato[2], I. Souto[2], P. Campana[1–2], J. Rodriguez[1–2], S. Prates[1]. [1]*La Plata Children's Hospital* [2]*Argentine Medical Center of Rehabilitation*

Introduction: aquatic physical therapy (APT) has all the benefits of land exercise (LE) plus the physic properties of warm water. It has been a useful method to treat several diseases with physical and psychological benefits. The impact of the exercises is softened by the water, been an excellent medium for children with congenital heart disease (CHD) thus offering them a better way for training. There are few papers about of therapeutic use of APT in this especial group of patients. **Objetive:** to establish the impact of APT in patients (P) on the pediatric cardiovascular rehabilitation program (PCRP). **Material y method:** 44 P with CHD divided in two group of 21 P and 23 P started APT and LE respectively within an eight weeks PCRP consisting of 24 sessions. Sex, age, and commitment to the PCRP were tabulated. All of P underwent measurement of anthropometric and puberal development, laboratory tests, electrocardiogram, chest XR, echocardiogram, and cardiopulmonary test, before and after PCRP. Variables were analyzed using the chi2 test, and values under 0.05 were considered statistically significant. **Results:** PCRP was completed for 90% of the P (10 men; 9 women) of APT group and for 65% of the P (8 men; 7 women) of LE group ($p<0.05$). There was not significant difference in gender. Mean age 13 years (5 to 19) in the APT group and 12 years (5 to 18) in the LE group (pNS). 60% of the P were in prepuberal stage. Comparing measurement before and after PRCP in both APT and LE groups, heart rate at rest was 16% and 14% respectively lower (pNS), systolic arterial pressure at rest was 4,8% and 4,2% respectively lower (pNS), time on cardiopulmonary test increased in 3 and 4 minutes respectively (pNS), HDL colesterol increased 8,3 % and 7.2% respectively (pNS), oxygen consumption (VO2) at peak of the exercise (VO2 p) increased 24 % and 22% respectively, VO2 at the anaerobic threshold increased 38 % and 37% respectively, and the lean mass increased 5,4 % and 5% respectively. There were not significant changes on chest XR and echocardiogram. **Conclusions:** physical and psychological benefits of a PCRP may be reached with either APT or LE, but the preference of the children to the APT makes it a powerful tool to reach a preventive or therapeutic target.

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Systolic and Diastolic Left Ventricular Wall motion Dyssynchrony Assessed by 99mTc-sestamibi-Gated-SPECT in patient with hypertension

M. Ishikawa[1], A Yamamoto[2], N Takahashi[1], T Shingo[1], J Abe[1], K Amitani[1], T Yamaguchi[1], N Kawaguchi[1], T Uchida[1], K Munakata[1]. [1]*nippon medical school musasikosugi hospital* [2]*nippon medical school tamanagayama hospital*

Background: Left ventricular (LV) dyssynchrony has been reported to play an important role in the advanced stage of congestive heart failure (CHF). It has been already proved by the improvement of CHF with cardiac resynchronization therapy. **Objective:** LV dyssynchrony in the early stage of CHF were studied with a novel program "cardioGRAF" for analyzing regional LV functions with a dyssynchronous index. **Methods:** 14 patient with hypertension (8 males and 6 females, 67.4+/-10.4 years old) and 15 control heart (3 males and 12 females, 59+/-13 years old), who were examined with resting 16-frame Tc99m-sestamibi-Gated-SPECT. The regional systolic (time to end systole: TES and time to peak ejection rate: TPE) and diastolic (time to peak filling rate TPF and TES+TPF) parameters of each 17 segments of LV were calculated using cardioGRAF. The severity of LV dyssynchrony was expressed as Standard Deviation (SD) meaning the standard deviation during 17segments for all patients. **Results:** In patients with hypertension, the value of SD-TES, TPE, TPF, and TES+TPF were significantly greater than those of control group ($p<0.05$, 0.05, 0.05, and 0.01 respectivity). **Conclusions:** During systolic butslso Diastolic left ventricular wall motion dyssynchrony was demonstrated in patient with hypertension by Gate-SPECT.

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Impact Of Angiotensin II Receptor Brockade On Left Ventricular Dyssynchrony In Hypertension

N. Takahashi[1], A Yamamoto[2], M Ishikawa[1], S Tezuka[1], J Abe[1], K Amitani[1], T Yamaguchi[1], N Kawaguchi[1], T Uchida[1], K Munakata[1]. [1]*Nippon Medical School Musashikosugi Hospital* [2]*Nippon Medical School Tamanagayama Hospital*

Background: Angiotensin II receptor blockade(ARB) has been shown to be safe and effective for the treatment of arterial hypertension and to regulate cardiac functions. It has been reported that left ventricular (LV) dyssynchrony has been demonstrated not only in advanced stage of heart failure but also in hypertension (HT). Nevertheless, the effect of ARB on intrinsic action of dyssynchrny has not been evaluated. The aim of this study was to investigate the impact of ARB on LV dyssynchrny in HT. **Methods:** We prospectively included 21 patients with uncontrolled or untreated HT preserved ejection fraction. Patients were given olmesartan 10mg to 40mg per day during 55 weeks and were examined LV functions and dyssynchrony by echocardiography using speckle tracking imaging and ECG-gated myocardial perfusion SPECT (MPS) using original novel program " cardioGRAF" in the same day before and after olmesartan treatment. LV dyssynchrony was evaluated to use the new index, maximal difference (MD), which is the difference between the earliest and latest temporal parameters among 6 segments at the LV mid-potion. We measured MD of time to radial strain (MD-TRS) using speckle tracking imaging and time to end systole (MD-TES), time to peak ejection (MD-TPE), time to end wall thickening (MD-TET) and time to peak wall thickening rate (MD-TPT) by MPS using cardioGRAF program among 6 mid-LV segments before and after the Olmesartan treatment. **Results:** We have been able to observe 13 patients through the 55 weeks. (7 males, 67±11 years old, EF 70.7±4.5%) The blood pressures showed significant changes after the

Olmesartan treatment (pre/post BP 167±17/87±9 mmHg / 128±14 / 70±8 mmHg, $p < 0.00001$, respectively). Both echocardiography and MPS demonstrated significant changes of values in MDs which revealed LV dyssynchrony (pre/post MD-TRS: 100.38±67.14msec/57.62±54.54msec, $p < 0.05$, pre/post MD-TES, MD-TPE, MD-TET, MD-TPT: 36.56±17.46 msec/26.01±12.51msec, 45.94±20.82msec/29.79±13.25msec, 97.88±115.19msec/29.63±25.31msec, 88.11±63.21msec/34.78±11.27msec, $p < 0.05$, $p < 0.001$, $p < 0.05$, $p < 0.01$, respectively). **Conclusions:** Olmesartan improves not only blood pressure but also LV dyssynchrony in hypertension.

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Adherence of patients to the antihypertensive treatment in Georgian population

D. Trapaidze[1], B. Tsinamdzgvrishvili[2], R. Tataradze[3], T. Abesadze[4], A. Rekhviashvili[5]. *[1]M. Tsinamdzgvrishvili Institute of Cardiology. Georgian Society of Hypertension. [2]M. Tsinamdzgvrishvili Institute of Cardiology. Georgian Society of Hypertension. [3]Georgian Society of Hypertension. [4]M. Tsinamdzgvrishvili Institute of Cardiology. Georgian Society of Hypertension. [5]M. Tsinamdzgvrishvili Institute of Cardiology. Georgian Society of Hypertension.*

At present time adherence to the treatment is one of the most actual problems in modern cardiology. **Aim** of the study was the assessment of adherence to the antihypertensive treatment via interrogation of first contact doctors and patients. **Methods:** There were surveyed 700 doctors (88% - general practice doctors, 12% - cardiologists) and 2650 patients with arterial hypertension using special created questionnaires. **Results:** According to the physician's opinion, material status of the patient is one of the most determining factors of the compliance to the treatment (68%); low awareness is on the second place (28%). At the same time physicians note, that in most cases they can not follow on the stages of treatment algorithm via rare contact with the patients and their compliance. Patients answer, that while following on medical recommendations, determining factor is improvement of general state (64%) and trust to the doctor, his/her authority (36%). According to the patients' opinion, the main motivation of appeal to the doctor is considerable deterioration of the general state (79%). **Conclusion:** Physician's factor is the most important in the improvement of patient's compliance to the treatment, because doctor's professionalism defines differential ways of creation motivation in different individuals, with stipulating patient's material status.

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Early and late results of total correction of tetralogy of Fallot

KH Hashemzadeh[1], SH Hashemzadeh[2], MJ Dehdilani[3], MZ Dehdilani[3]. *[1]Tabriz Imam Reza Hospital, Department of cardiovascular surgery, Iran [2]Tabriz Imam Khomeini Hospital, Department of thoracic surgery, Iran [3]Tabriz University of Medical Sciences, Iran*

Objective. The purpose of this study was to evaluate the early and late outcome after total correction of tetralogy of Fallot. **Methods and Results.** Between 1995 and 2006, 101 consecutive patients with a mean age of 8.23 ± 4.90 years (range, 1 year to 25 years) underwent repair of TOF at one institution. Forty two patients had initial palliative operations. A transannular patch was inserted in 60 (58.5%) patients. Risk factors for operative mortality were analyzed. Follow-up was obtained from clinical appointments and telephone questionnaires. The operative mortality was 6.9%. Aortic cross-clamp time more than 90 minutes ($P < 0.01$) and cardiopulmonary bypass time more than 120 minute ($P < 0.01$), affected operative mortality, whereas previous palliative procedure, hematocrit level, and use of transannular patch did not. Mean follow-up is 34.08 ± 31.09 months (range, 1 month to 120 months). Actuarial survival is 91% alive 10 years after total correction. On Post-operative echocardiography, 22 patients had mild pulmonary regurgitation, 19 had a right ventricular outflow tract gradient more than 50 mmHg, and 10 had a small residual ventricular septal defect. There were two late deaths. Late sudden death from cardiac causes occurred in one patients. **Conclusions.** Total correction of TOF can have low operative mortality and provide excellent long-term survival. This experience suggests that the key factor in the total correction of TOF is to correct the pathology completely, to protect the myocardium, and to manage the complication properly. **Keywords.** Congenital heart disease, Mortality, Tetralogy of Fallot

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Acute effects of Peroxisome Proliferator Activated Receptor gamma (PPAR gamma) Stimulation in macrophage cells and highly sensitivity C reactive protein of Hypercholesterolemic Rabbits

A. Alessi[1], O França Neto[1], C Prim[1], PR Brofman[1], L Noronha[1], L Baroncini[1], DB Précoma[1]. *[1]PUCPR- CURITIBA - BRAZIL*

Introduction: PPAR gamma are nuclear receptors acting preferentially at glucose and lipid metabolism, with anti-inflammatory, imunomodulating and anti-atherosclerotic activities. PPAR activation reduces atherosclerosis progression in animal models. The analysis of inflammatory markers as C-reactive protein (cPR) and macrophage density in intima and media layers of hypercholesterolemic rabbits pre-treated with a specific PPARgama agonist, Rosiglitazone-GlaxoSmithKleine-UK® (RGZ), was studied. **Methods:** 39 rabbits were given a hypercholesterolemic diet for 6 weeks (first two weeks 1% and last four weeks 0,5% - Cholesterol diet Sigma Aldrich®) and they were divided in 3 equal groups: GC – without RGZ, G1 – RGZ 3mg/kg/day by gavage for 4 weeks after a vascular lesion and G2 – RGZ from the beginning to the end of the experiment. A vascular lesion was induced by a balloon catheter 20X3 mm (5 atm/5 minutes) in the right iliac artery in the second week, sacrifice with iliac arteries removal was performed at the end of the experiment in the 6th week in all groups.Measurement of plasmatic lipids, highly sensitivity two-site enzyme linked immunoassay (ELISA) for measuring cPR in plasma of rabbits and immunohystological techniques were performed as according to the manufacturer's instructions included in the kits (Dako Corporation, Carpinteria, Calif). Sections were stained for macrophage cells using primary monoclonal antibody RAM-11(Dako®,Carpinteria,CA). For quantitative immunocytochemical comparisons of macrophage content in intima and media area, sections were computed and scored in 2 categories based on less or more than 50% of cells in the balloon injury area. **Results:** The 3 groups (13 rabbits in each) had similar weight and plasmatic lipids at the beginning of the experiment. There was an increase in the plasmatic cholesterol from the initial phase (49.6 ± 20.34 mg/dl), through the vascular lesion (422.57± 231.34 mg/dl) untill the sacrifice phase (720.10 ± 290.76 mg/dl), with no difference among groups. cPR analysis showed no difference between all groups on vascular lesion, GC (0,96±0,75 ng/ml), G1 (0,98±0,31ng/ml) and G2 (1,37±0,38 ng/ml), p= 0,75, by Anova one-way. The immunohystological analysis showed no significant difference in macrophage presence in intima e media layer for groups GC and G1 and macrophage was absent in G2. The scored analysis showed difference in intima layer with more than 50% of cells for GC (62,5%) versus G1 (0%),p=0.005 and no difference in media layer on Fisher's exact test. **Conclusion:** The PPAR gamma agonist Rosiglitazone did not change highly sensitive cPR after two weeks but reduced the content of macrophage cells in intima and media layers after six weeks in hypercholesterolemic animal model.

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HYPERTENSION DETECTION IN CHILDREN IN SCHOOLARSHIP AGE

S. Lopez Cross[1], L. Dumas, D. Peroni, G. Valenzuela. *[1]INSTITUTO CARDIOVASCULAR DEL SUR [2]HTAL. REGIONAL CASTRO RENDON NQN. [3]CLINICA SAN LUCAS [4]CMIC*

Introduction: Hypertension is a multifactorial desease, with increasingly incidence and prevalence, that is why is considered a health public issue. **Objectives:** To know the prevalence of hypertension in children of 6 to 12 years old, in Cipolletti city. To prove if there are differences about sex and age. To institutionalizalice blood pressure messurement as part of the rutinary physical examination in the control of a child. **Methos and Materials:** This was a cross sectional study. Blood pressure readings were obteined from 1038 students with ages between 6 to 12 years; who belong to 7 public schools of Cipolletti. Mercury sphyngomanometer and cuffs of 7.5 per 15 cm and 12 per 22 cm were used. The auscultatory method was used in phase I and V of Korotkoff. The second Task Force recomendations for blood pressure in children were followed. Blood pressure readings were obteined in 3 visits. Those students who had blood pressure messurement iqual or higher than those stablished for hypertension were identified during each visit: boys 115/75 mmHg (6–8 years) 118/79 mmHg (9–10 years) and 122/80 mmHg (11–12 yars) ; girls 113/74 mmHg (6–8 years) 118/79 mmHg (9–10 years) and 122/79 mmHg (11–12). **Results:** The prevalence of hypertension is 3.37%. Being more frecuent in the range of ages between 6 to 8 years, corresponding to 74.29% of the hypertense children. The hypertense group messurements of blood pressure are: a)Boys: 122.92 mmHg ± 4.11/78.43mmHg ± 5.19; b)Girls: 123.63 mmHg ± 7.43/80.22mmHg ± 2. There were not significant differences between sexs at the level of 5% ($f\tilde{N}=0.05$). The blood pressure had never been messurered to 597 students (58%). **Conclutions:** The prevalence of hypertension in Cipolletti is similar to international statistics. There are a number of children with hypertension that are not detected during medical examination due to the lack of blood pressure messurement institutionalization.

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Release of calcitonin gene-related peptide from the jugular-nodose ganglion complex in rats

T. Strecker[1–2], A. Dieterle[1], K. Messlinger[1], W. Neuhuber[3], M. Weyand[2], S. Koulchitsky[1]. *[1]Department of Physiology, Friedrich-Alexander-University of Erlangen-Nuremberg [2]Center of Cardiac Surgery, Friedrich-Alexander-University of Erlangen-Nuremberg [3]Department of Anatomy, Friedrich-Alexander-University of Erlangen-Nuremberg*

Objective: Afferent information from the heart and the lung is conveyed to the brainstem by primary afferent fibres originating from vagal sensory neurons (jugular-nodose ganglion complex, JNC). Activation of these afferents may cause release of calcitonin gene-related peptide (CGRP), a potent vasodilatory neuropeptide of sensory Aδ- and C-fibers. **Methods:** Freshly isolated rat JNC's were passed through a series of solutions based on oxygenated synthetic interstitial fluid (SIF). Dissolved substances such as the TRPV1 receptor agonist capsaicin and the nitric oxide (NO) donor sodium nitroprusside dihydrate (SNP) were added as excitatory test stimuli. The eluates were processed using an enzyme immuno-assay (EIA) for measurement of CGRP concentrations. Immunohistochemistry was used to visualize CGRP containing and nitric oxide producing neurons in the JNC. **Results:** Both SNP and capsaicin caused significant increases in CGRP release. CGRP-immunoreactive neurons (somata) were preferably found in the jugular ganglion, whereas neurons immunoreactive for neuronal NO synthase were mostly localized in the nodose ganglion. **Conclusion:** The present study evaluates a simple and easily reproducible model for measuring stimulated CGRP release from vagal afferents arising from the jugular ganglion. Nitric oxide produced by afferents from the nodose ganglion may contribute to stimulate CGRP release upon afferent activation.

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Stenting of the Vena Cava Superior in a patient with a Total Artificial Heart

T. Strecker[1], M. Uder[2], R. Tandler[1], M. Weyand[1], M: Kondruweit[1]. *[1]Center of Cardiac Surgery, Friedrich-Alexander-University of Erlangen-Nuremberg [2]Department of Radiology, Friedrich-Alexander-University of Erlangen-Nuremberg*

Objective: For patients suffering from decompensated biventricular heart failure which is refractory to medical management the total artificial heart (TAH) is a sufficient therapy option. One possible postoperative problem is the compression of the vena cava superior (VCS) because of bleeding which will lead to a tamponade symptomatic with low output of the TAH. **Methods:** In a 55-year-old

male such a TAH was implanted as bridge to transplant without any perioperative complications. But seven months after the patient was discharged home he was readmitted with signs of congestions of the upper body part and low flow of the TAH because of VCS compression due to pericardial effusion. In an interventional procedure a stent was implanted in the VCS. **Results:** The congestion of the upper body part of the patient degenerated within a few days, so that the patient could be discharged home again only three days later with normal function of the TAH. In a control CT scan 8 weeks after the intervention the VCS was still wide open while the patient was still without any congestion-symptoms and the TAH showed normal flow patterns. **Conclusion:** In patients with TAH in a long term course the interventional therapy of the compression of the VCS because of pericardial effusion is in our opinion possible if no actual bleeding source can be detected. The advantages are obvious, there is no need to change the anticoagulation therapy, reoperation procedure with all perioperative risks can be avoided and furthermore, the patient can be discharged home rapidly.

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Cardiac tumors – 37-year results, surgical experinence and outcome in our heart surgery center

T. Strecker[1], J. Roesch[1], M. Weyand[1], M. Kondruweit[1]. [1]*Center of Cardiac Surgery, Friedrich-Alexander-University of Erlangen-Nuremberg*

Objective: With the development of modern diagnostic tools and surgical techniques the frequency and also the possible consequences of cardiac tumours basically changed. Whereas in the fifties of the last century these findings were diagnosed mainly by the pathologist, today most of these patients can be treated surgically. **Methods:** In a retrospective review, 121 consecutive patients with cardiac tumours between May 1970 and August 2007 in our heart surgery centre were evaluated relating to age, gender, type of tumour, surgical treatment and outcome. **Results:** 0.36% of all operations with the heart lung machine in our hospital were due to cardiac tumours. Primary cardiac tumours were found in 76% of all cases, 89.1% of them were benign myxoms. Furthermore, there were additional six benign tumours (two lipoma, two rhabdomyoma, two papillary fibroelstoma) and four malignant tumours (three rhabdosarkoma, one histiocytoma). All of these four patients died in the follow up period. In 24% we found secondary tumours of the heart, ten of them were metastasis of other primary carcinoma (two melanoma, two renal tumours, three lung tumours, two malignant thymoma, one breast carcinoma). All patients in this group died in the follow up period. In 15 cases thrombotic material was found, in five cases no exact diagnosis could be achieved. **Conclusion:** Our experiences are in good accordance with literature findings concerning frequency and distribution of different cardiac tumours. Whereas surgical treatment of benign primary and secondary cardiac tumours is very promising, this therapy option can be only a palliative treatment in patients with malignant cardiac tumours.

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Incidence of coronary artery disease in patients with tricuspid versus bicuspid aortic stenosis

L. Cook[1], S Burger[1], C Harden[1]. [1]*University of illinois and carle hospital*

A prospective observational study was performed on 100 consecutive patients operated upon by one surgeon (LSC) from 2003–2007 for aortic stenosis (AS), ninety-nine patients had preoperative cardiac catheterization and all non-redo patients had intraoperative palpitation and visualization of the coronary arteries for atherosclerosis. Sixteen patients had redo open heart surgery. Males were 55 in number versus 45 females. Ages ranged from 47–91 with average of 73+4 years. Twenty-eight patients were greater than 80 years of age. Visualization of the aortic valve leaflets in the operating room revealed 9 patients with bicuspid AS versus 90 patients with tricuspid AS. One patient required redo for replacement of a stenotic mechanical valve. The 30-day mortality rate was 6% with a stroke rate of 3%. Mechanical valve usage was 24%. Patients with occlusive coronary artery disease (>50% stenosis) had coronary artery bypass grafting (CABG). Some of results are shown below. Bicuspid aortic stenosis (BAS) patients were younger and required CABG 33% of the time versus 55% for tricuspid aortic stenosis (TAS) patients ($p<.05$). Sixteen percent of patients with TAS had prior CABG versus none in patients with BAS ($p<.05$). Only 7% of the patients with TAS had normal coronaries at operation versus 66% for BAS. BAS patients present earlier in life with less coronary artery disease. TAS is a specific marker for coronary atherosclerosis. All patients with TAS should have cardiac catheterization before aortic valve replacement.

TABLE 1

Type Valve Leaflet	Number of Patients	Age (Years)	CABG	Prior CABG	Normal Coronary Arteries
Tricuspid	90	73±3	50	14	6
Bicuspid	9	61±3	3	0	6

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One-Year Cardiovascular Event Rates in outpatients with slow upsloping ST depression vs. horizontal or downsloping ST depression in Treadmill exercise testing

L. Ferro[1], A. Contreras[1], P. Pogonza[1], E. Brenna[1], F. Urinovsky[1], R. Bagur[1], D. Morillo[1], LM. Amuchastegui[1]. [1]*Hospital Privado Centro Medico de Cordoba*

Aims: To compare cardiovascular events after one year follow-up of outpatients with slow upsloping vs. horizontal or downsloping ST depression in Treadmill exercise testing. **Methods:** This prospective study was performed on consecutive patients with positive Treadmill exercise testing due to ST segment depression since March 2006 until February 2007. The patients were divided into two groups: slow upsloping ST depression and horizontal or downsloping ST depression, group 1 and 2, respectively. Combined coronary events (cardiovascular death, admission for acute coronary syndrome and revascularization) were considered during the follow-up. Values are expressed as mean ± standard deviation (SD). Baseline characteristics of the two groups are compared using chi square for the categorical variables and t Test or Mann Whitney Test for continuous variables, according to the needs. The Kaplan Meier method and log rank test were used to estimate and compare event free survival curves. P values are two-sides. Statistical analysis was performed using the SPSS statistical package, version 12.0 for windows. **Results:** 64 outpatients were included with a mean age of 60.2 ± 11.1 years, 18.8% were women. 98.4% had moderate risk according to the Duke score. Coronary angiography was performed in 21.9% because it was clinically indicated. Thirty-one patients were included in group 1 and thirty-three in group 2. There were no differences between baseline characteristics. The mean follow-up was 357 ±161 days. There were five events in group 1 and seven in group 2 (Table 1). Only one death occurred during the follow-up and it was not of cardiovascular cause. Log Rank p=0.44. Kaplan Meier curve was built. **Conclusion:** Patients with horizontal or downsloping ST depression have the same outcome compared to patients with slow upsloping ST depression.

TABLE1. COMBINED CORONARY EVENTS

	Group 1	Group 2	P value
Revascularization	15,2% (5)	22,6% (7)	0.531
ACS admission	-	-	-
Cardiovascular death	-	-	-

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ASYNCHRONOUS HEMIDISC CLOSURE IN MECHANICAL BILEAFLET PROSTHESES WITH NORMAL FUNCTION.

T. F. Cianciulli[1–3], **M. A. Beck**[1], J. A. Lax[1], M. C. Saccheri[1–3], G. E. Gigena[1], A. N. Dorelle[1], E. H. Fernandez[2], J. H. Leguizamon[2], H. A. Prezioso[1], L. A. Vidal[1]. [1]*Echocardiography Laboratory, Division of Cardiology, Hospital del Gobierno de la Ciudad de Buenos Aires "Dr. Cosme Argerich".* [2]*Cardiac Catheterization Laboratory, Division of Cardiology, Clínica Bazterrica.* [3]*Researcher of the Secretary of Health of the Government of the City of Buenos Aires*

Background: Cinefluoroscopy is a simple, non-invasive, high-definition technique that is widely available and enables the rapid detection of prosthetic dysfunction, therapeutic management and follow-up. The lack of information available regarding asynchronous closure of one of the hemidiscs led us to undertake the present study. **Objectives:** to assess the presence of hemodynamic differences between prostheses with and without asynchronous closure of one hemidisc. **Methods:** we performed a cross-sectional study of patients who survived aortic or mitral valve replacement between January 2002 and December 2006. A total of 118 patients with normal bileaflet mechanical prostheses were assessed with cardiac Doppler echocardiography and cinefluoroscopy. Patients' mean age was 58±14 years (range: 19–80 years), 65 were male, 42 had atrial fibrillation and 79 had aortic prostheses. Four prosthetic models were evaluated: 58 St. Jude Medical, 28 CarboMedics, 21 Sorin Bicarbon and 11 ATS valves. Results were analyzed using the chi square test for categorical variables and Man-Whitney/Wilcoxon's test for non-parametric continuous variables. **Results:** the 79 aortic prostheses had a peak gradient, mean gradient and opening angle measuring 23±10 mmHg, 13±6 mmHg and 80±5° respectively. In the 39 mitral prostheses, mean gradient, effective prosthetic area and opening angle measured 5±2 mmHg, 2.3±0.9 cm2 and 80±4° respectively. Among patients with sinus rhythm, none had asynchronous hemidisc closure, whereas among patients with atrial fibrillation, 25 (59.5%) exhibited asynchronous closure of one hemidisc ($p< 0.0001$), which was more evident during long diastolic pauses and was not associated with prosthetic regurgitation. Asynchronous hemidisc closure was more frequent in mitral prostheses (17/42=40.5%) than in aortic prostheses (8/42=19%), $p< 0.001$. Mean delay in hemidisc closure was 66 msec (range: 33 to 198 msec). These delay tended to be more prolonged ($p=0.07$; non-significant difference) in mitral (75±44 msec) than in aortic prostheses (45±17 msec). **Conclusions:** cinefluoroscopy is a simple, fast and non-invasive method, and showed that in patients with atrial fibrillation, asynchronous closure of a hemidisc in bileaflet mechanical prostheses is a common finding (25/42 = 59.5%) with no pathological significance. To the best of our knowledge, this finding had not been previously described in the literature.

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Detection of atherosclerosis in the brachiocephalic trunk: the missing piece of the puzzle?

N. Moraes[1], R. Dias[2], J. Tsutsui[3], A. Uchida[4], M. Vieira[5], S. Oliveira[6], P. Da Luz[7], W. Mathias[8]. [1]*Heart Institute (InCor)- University of São Paulo Medical School* [2]*Heart Institute (InCor)- University of São Paulo Medical School* [3]*Heart Institute (InCor)- University of São Paulo Medical School* [4]*Heart Institute (InCor)- University of São Paulo Medical School* [5]*Heart Institute (InCor)- University of São Paulo Medical School* [6]*Heart Institute (InCor)- University of São Paulo Medical School* [7]*Heart Institute (InCor)- University of São Paulo Medical School* [8]*Heart Institute (InCor)- University of São Paulo Medical School*

Introduction: Since atherosclerotic disease affects the entire arterial system, extended imaging that allows the concomitant assessment of the carotid arteries (CA) and the brachiocephalic trunk (BCT) appears desirable. **Objective:** The purpose of this study was to assess the ability of Duplex ultrasonography (DU) to display clinically relevant atherosclerotic lesions in the BCT in patients who were referred for ambulatory cardiac evaluation. **Methods:** We evaluated 577 patients, mean age: 61 (+12,7yo), 51% male, who underwent DU of both CA and BCT territories. Framingham risk score (FRS) and metabolic syndrome (MS) were defined according to already established criteria. **Results:** In 38% of patients there was no detection of plaques at CA or BCT (No Plaque group). The display of BCT was characterized as nondiagnostic only in 7% of patients. Plaques were detected exclusively at BCT in 16% and at CA in 11% of patients. In 28%, the plaques were detected in both CA and BCT territories. Mean age of patients: 53, 62, 61 and 68 yo in the groups No Plaque, CA, BCT and CA+BCT; respectively ($p<0.01$). Median values of FRS observed: 10%, 17%, 14% and 17% for No

Plaques, CA, BCT and CA+BCT, respectively [p<0.001 versus No plaque]). However, FRS was not different between the groups CA, BCT and CA+BCT. The percentage of pts at intermediate and high risk by FRS did not differ between pts with plaques in different territories, although it was higher when compared to the group No Plaque (87%, 73%, 71% versus 48% for CA+BCT, BCT, CA and No Plaque, respectively; p<0.01). The prevalence of MS was higher in pts with plaques at BCT and CA+BCT (55% and 56% versus 33% No Plaque; p<0.01). No difference was observed in prevalence of MS between patients with plaques at CA and No Plaque (44% versus 33%; p=0.15). **Conclusions:** The plaque detection in BCT by the duplex scan provides a comprehensive non-invasive approach for arterial system's atherosclerosis screening assessment. This technique is well suited for the assessment of the supra-aortic vessels and adds accuracy when including BCT to the remainder of the arterial system.

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Is Easy-Access Preventive Medicine Necessary in a Social Healthcare System

A. Bader[1], M. Hochleitner[1]. [1]*Innsbruck Medical University*

Austria has a semi state-run healthcare system that covers all persons living in Austria. This healthcare coverage comprises out-patient and in-patient care, and with a small deductible also covers medication and all treatment necessities including preventive medicine. The numerous preventive medicine campaigns are well publicized in the media. The Women's Health Center is an effort by Innsbruck Medical University Hospital to bring health information to women. This is primarily done through flyers, the home page and the media. Furthermore health awareness checks are offered at various events. Some people ask whether this is necessary in the above-mentioned healthcare system. Every year a heart fitness event is held in downtown Innsbruck; we assess heart risk, check blood pressure, blood glucose, cholesterol, draw up a heart risk profile and provide physician counseling, anonymous and free. Cholesterol up to 200 is considered normal, blood glucose up to 126 and blood pressure up to 160/90. The programs for 2005, 2006 and 2007 brought the following results. In 2005 we welcomed 281 participants, in 2006 238, and in 2007 269 participants. In 2005 231 persons (82.2%) showed at least one pathological test result, in 2006 147(61.8%), and in 2007 175(65.1%). In 2005 we saw elevated cholesterol in 194(69.0%) participants, in 2006 in 110(46.2%), and in 2007 in 136(50.6%). Blood glucose in 2005 was high in 41(14.6%) participants, in 2006 in 21(8.8%), and in 2007 in 24(8.9%) participants. Blood pressure in 2005 was elevated in 91(32.4%) persons, in 2006 in 65(27.3%), and in 2007 in 70(26.0%). In 2005 177(63.0%) persons stated that they took medication to correct their blood glucose, blood pressure and cholesterol, in 2006 178(74.8%) persons, and in 2007 139(51.7%) persons. In 2005 164(58.4%) participants reported eating a fiber-rich diet, in 2006 144(60.5%) persons, and in 2007 152(56.5%) persons. Physical exercise three times a week for more than 30 minutes was reported by 244(86.8%) persons in 2005, by 208(87.4%) in 2006, and by 238(88.5%) persons in 2007. We find that the large number of pathological findings show the necessity of these preventive medicine campaigns. What remains unclear is why such a large number of persons did not contact their family doctor for these tests. For example, it is remarkable that approx. every second participant had elevated cholesterol readings, every fourth person elevated blood pressure and every eleventh person a too high blood glucose reading. Moreover, when interviewed about diet and exercise the large majority responded that they were prepared to make changes in their lifestyle, and more than half of the participants stated that they took medication precisely to correct the risk factors observed. What the participants' welcome about these campaigns is that they are so uncomplicated: short waiting times, no appointment, second opinion, anonymity.

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Prone Imaging is An Effective Method of Attenuation Correction in

A. Salacata[1], J. Mills, S. Keavey. [1]*Great Lakes Heart Center of Alpena*

Prone imaging (PR) is helpful in differentiating diaphragmatic attenuation artifacts from true perfusion defects. Its effects on breast tissue attenuation however are unknown. **Methods** Consecutive female patients referred to our laboratory for rest/stress Tc-99m MPI had their studies analyzed immediately. Using QBS software patients with a summed stress score greater than 1 in the anterior segments on supine (SU) post stress imaging then underwent repeat scanning in the prone position. The patients summed stress score (SSS) and defect size (% D) for the anterior segments were then assessed using QBS software for the supine and prone post exercise images. The SSS and %D for these matched measurements were then compared by t-test for paired samples. **Results** 94 female patients were referred to our laboratory during the study period. 35 (37%, mean age 61.6 ± 14 years, mean BMI = 31.4 ± 5.7, mean bust size 42.89 ± 5.26 inches) had anterior defects and underwent PR imaging post stress. PR led to a significant reduction in the SSS and defect size. This persisted even after the patients were broken down between those with (CAD+) and without (CAD-) established CAD In 12 patients (34%) the SSS went from an average SSS 2.33 ± 0.29 to 0. 11 patients (31%) had a concomitant defect in the inferior segments. In these patients PR significantly reduced the SSS (3.0 ± 3.64 vs. 0.45 ± 2.70 p <0.01) and % D (14.91 ± 11.76 vs. 1.19 ± 5.94, p < 0.01). **Conclusions** 1.Anterior defects are common in women referred for MPI. 2. Female patients with anterior defects often have concomitant inferior defects. 3. Prone imaging significantly reduces both anterior and inferior SSS and % D and is helpful in reducing false positive findings due to soft tissue attenuation.

	SSS			%D		
	PR	SU	p	PR	SU	p
ALL	2.03 ± 2.76	4.97 ± 3.89	<0.01	4.89 ± 8.14	12.26 ± 12.77	<0.01
CAD +	3.23 ± 3.54	6.08 ± 5.30	<0.05	7.85 ± 11.89	16.85 ± 18.68	<0.05
CAD -	1.32 ± 1.94	4.32 ± 2.70	<0.01	3.14 ± 4.21	9.54 ± 6.63	<0.01

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Diabetic patients undergoing percutaneous coronary intervention using drug-eluting stents: incidence and predictors of very late (> 12 months) stent thrombosis

V. Voudris[1], P. Karyofillis[1], S. Thomopoulou[1], S. Patsilinakos[1], A. Manginas[1], C. Spargias[1], G. Pavlides[1], D.V. Cokkinos[1]. [1]*Onassis Cardiac Surgery Center* [2]*Onassis Cardiac Surgery Center* [3]*Onassis Cardiac Surgery Center* [4]*Onassis Cardiac Surgery Center* [5]*Onassis Cardiac Surgery Center* [6]*Onassis Cardiac Surgery Center* [7]*Onassis Cardiac Surgery Center* [8]*Onassis Cardiac Surgery Center*

Background: Despite encouraging results with drug-eluting stents (DES) reported in diabetes mellitus (DM) patients (pts) with coronary artery disease, the long-term safety is unknown, because of late-onset stent thrombosis (LST). We investigated the incidence, risk factors and association of antiplatelet treatment (APLT) interruption for the development of LST in DM pts treated with DES during long-term clinical follow-up (FU). **Methods:** A total of 610 consecutive DM pts (male 80%, mean age 65+9 years) had been treated with DES (sirolimus 80%, paclitaxel 10%, zotarolimus 2% combination 8%); 133 (22%) were on insulin treatment. Dual APLT treatment for 12 months received 93%, more than 12 months 72% and statin treatment 93% of pts. Clinical FU at least 12 months post-PCI (median 29 months, interquartile range 21 to 40) was obtained in 597/610 (98%) of pts. LST was defined as angiographic documentation of stent occlusion associated with an acute ischemic event, unexplained sudden cardiac death (D) or myocardial infarction (MI) not clearly attributable to another coronary lesion. **Results:** The incidence of LST was 2.18% (13 of 597 pts) and 6 additional pts (1%) developed stent thrombosis before 12 months (EST). All pts with LST (median time 19 months, interquartile range 14 to 24) had unexplained sudden cardiac D and 2/6 pts with EST non-fatal MI. Eleven out of 13 pts (85%) were on dual antiplatelet treatment at the time of LST. There was no difference in the incidence of LST between pts on oral antidiabetic medications and insulin treatment (2.1% vs. 2.3%, p:ns). In a multivariate model including clinical and angiographic factors, the only predictor for LST was ejection fraction <40% (OR 0.10, 95% CI 0.03–0.43, p<0.05). **Conclusion:** LST in DM pts occurred in 2.18% after DES implantation; most of these pts were on dual APLT treatment. The only predictor of LST was depressed left ventricular function.

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Long-term clinical outcome of patients with saphenous vein graft lesions treated with drug-eluting stents ; comparison with patients treated with bare metal stents

V. Voudris[1], S. Thomopoulou[1], P. Karyofillis[1], C. Kalianos[1], A. Manginas[1], G. Pavlides[1], C. Spargias[1], D.V. Cokkinos[1]. [1]*Onassis Cardiac Surgery Center* [2]*Onassis Cardiac Surgery Center* [3]*Onassis Cardiac Surgery Center* [4]*Onassis Cardiac Surgery Center* [5]*Onassis Cardiac Surgery Center* [6]*Onassis Cardiac Surgery Center* [7]*Onassis Cardiac Surgery Center* [8]*Onassis Cardiac Surgery Center*

Background: Recent data have shown a reduction in restenosis in patients (pts) with saphenous vein graft lesions (SVGL) treated with percutaneous coronary intervention (PCI) using drug-eluting stent (DES). In this prospective non-randomized study we assessed the long-term clinical outcome in pts with SVGL treated with DES and compared them to pts treated with bare metal stent (BMS). **Methods:** Sixty-nine consecutive pts that had been treated with DES were compared with 38 consecutive pts treated with bare metal stent (BMS). The in-hospital results and clinical outcome during follow-up (median 36 months, interquartile range 24 to 46)) were obtained. Major adverse coronary events (MACE) during follow-up were considered death, myocardial infarction (MI), bypass surgery (CABG), target and non-target vessel PCI. **Results:** DES treated pts were older (p=0.02) and had a higher rate of previous MI (p=0.04). PCI was performed to dilate 73 SVGL, using sirolimus (77%), paclitaxel (7%), zotarolimus (4%) or combined (12%) DES, and 40 SVGL using BMS. In addition 22 native vessel stenoses were dilated in the DES and 8 in the BMS group. Multi - SVGL PCI was applied in 5.8% of DES and 5.3% of BMS treated pts and multi-vessel stenting in 32% and 21% respectively (p=ns). In-hospital results included one sub-acute stent thrombosis (in BMS group) and one q - MI (in DES group). Clinical follow-up was obtained in all pts. There were no differences in death (11.6% vs. 7.9%, p=ns), MI (7.2% vs. 5.3%, p=ns), any revascularization (17.4% vs. 28.9%, p=ns) or any MACE (29% vs. 36.8%, p=ns) in the DES and BMS group of pts respectively. Independent predictors for death were acute coronary syndrome at presentation (hazard ratio 0.08, 95% CI 0.008–0.908, p=0.04) and ejection fraction <40% (0.14, 0.024–0.786, p=0.03), and for any MACE diabetes mellitus (0.37, 0.164–0.841, p=0.2), total stent length (1.09, 1.012–1.170, p=0.02) and multivessel stenting (0.26, 0.081–0.858, p=0.03). **Conclusion:** The implantation of DES in pts with SVGL is associated with similar in-hospital and long-term results, compared to those observed in pts treated with BMS.

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Seeking medical advice of patients with myocardial infarction in Russia

V. Gafarov[1], A. Gafarova[1]. [1]*Collaborative laboratory of Epidemiology Cardiovascular Diseases Siberian Branch of the Russian Academy of Medical Sciences, Russian Federation* [2]*Collaborative laboratory of Epidemiology Cardiovascular Diseases Siberian Branch of the Russian Academy of Medical Sciences, Russian Federation*

The purpose: To study within 22 (1977–1998) years of seeking medical advice (SMA) of patients myocardial infarction (MI).behind medical care and the reasons, on it influencing. **Materials and methods:** WHO programs "Register of Acute Myocardial Infarction" and "MONICA" were performed in population aged 25–64 years in one of district of city Novosibirsk in Russia. From January 1, 1977, to December 31, 1998, monitoring registered 5180 cases of MI. SMA was studied in 4093 patients with MI. **Results:** Within one hour to doctors addresses

18 % - 44,1 % patients with MI, from one hour up to 6–25,4 % - 64,8 %, from 6 till 24–10,8 % - 22,7 %. The number of the patients who have addressed behind medical care over 24 hours - 3,5 % - 35,5 % is significant. Dynamics SMA on years shows, that if till 1991 SMA on time intervals was stable, in 1991–98 has grown SMA behind medical care over day from the beginning of disease and has even more decreased within the first hour. Average time of the SMA patients with MI in the ambulance medical care from the beginning of an attack makes 20,6 hours, per general practice doctors - 65,6 hours, per a hospital - 39,2 hours Conducting reasons late SMA patients with MI behind medical care are: opinion that the attack can be stopped independently; did not see connection between a painful attack and disease of heart; did not know symptoms of a MI; and at last, thought to consult with an attack own forces. **Conclusion:** Taking into account, that SMA patients with MI behind medical aid concerns to behavioral characteristics of the population, it is necessary to tell, that this problem social and it is necessary to solve through education of the population.

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Monitoring myocardial infarction (diagnostic combination, prodromal period, behavioral characteristics) using the WHO program "Registry of Acute Myocardial Infarction", "MONICA" during the period of 22 years in Russia

V. Gafarov[1], **A. Gafarova[1]**. *[1]Collaborative laboratory of Epidemiology Cardiovascular Diseases Siberian Branch of the Russian Academy of Medical Sciences, Russian Federation [2]Collaborative laboratory of Epidemiology Cardiovascular Diseases Siberian Branch of the Russian Academy of Medical Sciences, Russian Federation*

Purpose of the study: A 22-year study (1977–1998) of diagnostic categories of Acute Myocardial Infarction (AMI), prodromal period, behavioral characteristics of the patients 25–64 years of age in Russia. **Materials and methods:** WHO programs "Register of Acute Myocardial Infarction" and "MONICA" were performed in population aged 25–64 years in one of district of city Novosibirsk in Russia. From January 1, 1977, to December 31, 1998, monitoring registered 5180 cases of AMI (1774 lethal outcomes). **Results:** The diagnostic category "Possible" AMI occurred more frequently (63,8%) than "definite" AMI (36,2%), this difference being more noticeable in women than in men. In both diagnostic categories the disease presented with a typical clinical picture (81,4%). The degree of activity of patients with AMI at the moment of occurrence of disease was various: most frequently AMI developed in rest - 47,3 %; physical loading - 29,0 %; in sleep - 20,7 %. In overwhelming majority of cases AMI arose at home both at men, and at women In transport, on a visit, on a summer residence at men AMI developed less often, than on work, in hospital, in the street; at women of special distinctions it is not established. In domestic conditions AMI arose more often at women, than at men, while in the street - at men is more often, than at women Half of the patients had arterial hypertension (AH) and angina pectoris (AP), one third of the patients had survived AMI before. 91% of AMI men were heavy smokers. Alcohol intake at AMI onset was insignificant. Pain syndrome 2 weeks before AMI was the same in survivors and the deceased. Those who died suddenly felt extremely tied before AMI, those whose death was not sudden experienced exacerbation of AP and dyspnea, those who survived experienced exacerbation of AP. **Conclusion:** Long-term monitoring showed that AMI clinical presentation did not differ for 2 decades. A significant number of AMI patients with a history of hypertension, angina pectoris, previous AMI, heavy smoking evidenced for the lack of prophylactic education among population.

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Eco-Cardiographic Ergometric Correlation of Patients

L. Sollet Lopez[1], A. Gonzalez Morejon[2], J. Ponce Vitar[3], E. Selman Houssein Sosa[4], R. Casanova Arsola[5], C. Garcia Morejon[6], E. Fleitas[7]. *[1]Cardiocentro, Cuba [2]Cardiocentro, Cuba [3]Cardiocentro, Cuba [4]Cardiocentro, Cuba [5]Cardiocentro, Cuba [6]Cardiocentro,Cuba [7]Cardiocentro, Cuba*

The complex geometry of the right ventricle has hindered the eco-cardiographic assessment of the systolic function. Then, various methods have been employed: Systolic Excursion of the Plane of the Tricuspid Ring, TEI Index and Tissue Doppler. For example, on patients with a Systemic Right Ventricle, such as those operated on TGV through the Mustard Technique, the assessment and the eco-cardiographic study must be complemented through an Analysis-Based Ergometric Test, measuring the functional capability of them. This study includes 49 cases operated on TGV (Mustard Technique), where a correlation was made between the eco-cardiographic techniques of systolic function of the right ventricle and the functional capability – through a conventional ergometric test. It was found that in 36 cases (accounting for 73%) the various eco-cardiographic indicators of systolic function of the right ventricle, according to the age groups, were comparatively lower than those reported in the related literature. However, these patients were symptom-free and had a normal functional capability during the effort test. In nine patients (accounting for 18%) there were effort-related arrhythmias, with a decrease in their functional capability and low eco-cardiographic levels; three patients (6%) underwent new surgeries because of tunnel obstructions and one patient (2%) showed a real dysfunction of the right ventricle with low eco-cardiographic levels and decrease in functional capability. It was concluded that the combination of the eco-cardiographic and the ergometric analyses provides important data to determine the existence of a real dysfunction of the systemic right ventricle in patients operated on TGV through the Mustard Technique.

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Eco-Cardiographic Ergometric Correlation of Patients

L. Sollet Lopez[1], A. Gonzalez Morejon[2], J. Ponce Vitar[3], E. Selman Houssein Sosa[4], R: Casanova Arsola[5], C. Garcia Morejon[6], JC Ramiro Novoa[7], J. Ozores[8], E. Fleitas[9]. *[1]Cardiocentro, Cuba [2]Cardiocentro, Cuba [3]Cardiocentro, Cuba [4]Cardiocentro, Cuba [5]Cardiocentro, Cuba [6]Cardiocentro, Cuba [7]Cardiocentro, Cuba [8]Cardiocentro, Cuba [9]Cardiocentro, Cuba*

The complex geometry of the right ventricle has hindered the eco-cardiographic assessment of the systolic function. Then, various methods have been employed: Systolic Excursion of the Plane of the Tricuspid Ring, TEI Index and Tissue Doppler. For example, on patients with a Systemic Right Ventricle, such as those operated on TGV through the Mustard Technique, the assessment and the eco-cardiographic study must be complemented through an Analysis-Based Ergometric Test, measuring the functional capability of them. This study includes 49 cases operated on TGV (Mustard Technique), where a correlation was made between the eco-cardiographic techniques of systolic function of the right ventricle and the functional capability – through a conventional ergometric test. It was found that in 36 cases (accounting for 73%) the various eco-cardiographic indicators of systolic function of the right ventricle, according to the age groups, were comparatively lower than those reported in the related literature. However, these patients were symptom-free and had a normal functional capability during the effort test. In nine patients (accounting for 18%) there were effort-related arrhythmias, with a decrease in their functional capability and low eco-cardiographic levels; three patients (6%) underwent new surgeries because of tunnel obstructions and one patient (2%) showed a real dysfunction of the right ventricle with low eco-cardiographic levels and decrease in functional capability. It was concluded that the combination of the eco-cardiographic and the ergometric analyses provides important data to determine the existence of a real dysfunction of the systemic right ventricle in patients operated on TGV through the Mustard Technique.

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Correlación Eco cardiográfica-Ergo métrica de pacientes operados de TGV a través de la técnica de Mustard.

L. Sollet Lopez[1], A. Glez Morejon[2], J. Ponce Vitar[3], E. Selman Houssein Sosa[4], R. Casanova Arzola[5], C. Garcia Morejon[6], JC Ramiro Novoa[7], E. Fleitas[8]. *[1]Cardiocentro, Cuba [2]Cardiocentro, Cuba [3]Cardiocentro, Cuba [4]Cardiocentro, Cuba [5]Cardiocentro, Cuba [6]Cardiocentro, Cuba [7]Cardiocentro, Cuba [8]Cardiocentro, Cuba*

La compleja geometría del Ventrículo Derecho, ha hecho que la evaluación Eco cardiográfica de la Función Sistólica se haya dificultado, diferentes métodos han sido utilizados como: Excursión Sistólica del Plano del Anillo Tricúspide, Índice de TEI y Doppler Tisular. En pacientes con Ventrículo Derecho Sistémico como por ejemplo en operados de Transposición de los Grandes Vasos a través de la Técnica de Mustard, la evaluación, además del estudio Eco cardiográfico debe ser complementada a través de la Prueba Ergo métrica Valorativa, midiendo la Capacidad Funcional de los mismos. En el presente estudio de 49 casos operados de transposición de los grandes vasos (técnica de Mustard) se realizo una correlación entre las Técnicas Eco cardiográficas de función sistólica de Ventrículo Derecho y la Capacidad Funcional a través de la Prueba Ergo métrica Convencional, se encontró que en 36 casos(73%) los diferentes indicadores Eco cardiográficos de función sistólica del ventrículo derecho según edad, fueron comparativamente menores a los reportados por la literatura, sin embargo, estos pacientes se mantenían libre de síntomas y además capacidad funcional normales durante la prueba de esfuerzo. En 9 pacientes (18%) existían arritmias durante el esfuerzo, con disminución de la capacidad funcional e índices eco cardiográfico bajos, 3 pacientes (6%) fueron re intervenidos por obstrucción de túneles y en 1 paciente(2%) se observo una verdadera disfunción del Ventrículo Derecho con índices eco cardiográficos bajos y disminución de la capacidad funcional. Se concluyo que el análisis eco cardiográfico y ergo métrico combinados nos aporta datos importantes para determinar cuando existe una verdadera disfunción del Ventrículo Derecho sistémico en pacientes operados de Transposición de los Grandes Vasos con la técnica de Mustard.

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Risk Factors of Atherosclerosis in Children

H Valdes Pino[1], L. Sollet Lopez[2], F Carballes Garcia[3], E. Aguilera[4]. *[1]Cardiocentro, Cuba [2]Cardiocentro, Cuba [3]Cardiocentro, Cuba [4]Cardiocentro, Cuba*

Atherosis is the intracellular and extracellular focal accumulation of lipids, forming foamy cells and causing swelling. Sclerosis is the scar-like hardening of the arterial wall. Atherosclerotic evolution is slow and begins at birth, developing its main lesion. This is the reason underpinning this study, essentially aimed at preventing the disease. A descriptive transversal study was conducted on 86 children aged 5–14 from Jesús Menéndez neighborhood in Boyeros municipality, from September through December 2006. Different variables were included in the study, such as age, sex, skin color, systolic blood pressure, diastolic blood pressure, blood pressure percentage, weight, size, waist-hip index. Blood pressure was measured for 15 minutes with a Chinese sphygmomanometer. Weight and size were measured with a Chinese scale that has a built-in size gauge. Bodily mass index was calculated according to its formula. Measurements of the waist and hip were made with a tape measure and taking bone structures as reference. Data was collected in the primary data collection model. The most outstanding results were the following: 43.1% of overweight people. Males accounted for 32.6% of obese people and females for 25.6% in overweight people. Both sexes registered statistically significant differences in nourishment assessment. Some 34.9% of the girls registered a very high waist-hip index and in 55.8% of the boys this level was normal. Some 86% of them were second-hand smokers. Fifty percent registered family-related pathological histories of high blood pressure. Ninety-three percent registered at least an early sign of atherosclerosis.

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Factores de riesgos de aterosclerosis en poblacion infantil, area de salud reparto Jesus Menendez, 2006

H. Valdes Pino[1], L. Sollet Lopez[2], F. Carballes Garcia[3], E. Aguilera[4]. *[1]Cardiocentro, Cuba [2]Cardiocentro, Cuba [3]Cardiocentro, Cuba [4]Cardiocentro, Cuba*

La aterosis es, acumulación focal lipídica intracelular y extracelular, con formación de células espumosas y reacción inflamatoria, y la esclerosis es, endurecimiento cicatrizal de la pared arterial, La evolución aterosclerosa es lenta, y comienza con el nacimiento, a desarrollar su lesión fundamental por todo esto nos motivamos a realizar este trabajo que tiene como objetivo

principal la prevención de la enfermedad.Se realizó un estudio descriptivo transversal a 86 niños entre 5 y 14 años del reparto Jesús Menéndez del municipio Boyeros, durante Septiembre a Diciembre del 2006. Se estudiaron variables como la edad, sexo, color de la piel; tensión arterial sistólica, tensión arterial diastólica, percentil de tensión arterial, peso, talla, índice cintura – cadera Se tomó la tensión arterial durante 15 minutos con esfigmomanómetro de fabricación china. El peso y la talla se midieron con una báscula china que lleva el tallímetro incorporado. Se calculó el índice de masa corporal según su fórmula. Las mediciones de la cintura y la cadera se realizaron con una cinta métrica y tomando como referencia estructuras óseas. Los datos fueron recogidos en el modelo de recolección de dato primario. Los resultados más relevantes fueron el 43.1 % de la población fue sobrepeso corporal. Los varones aportaron el 32.6% en los obesos y las niñas el 25.6% en los sobrepesos; en la valoración nutricional se encontraron diferencias estadísticamente significativas entre ambos sexos.El 34.9% de las niñas presentaron un Índice Cintura Cadera muy alto y en el.55.8% de las varones éste fue normal, 86% era fumador pasivo. El 50% presentaron antecedentes patológicos familiares de hipertensión arterial. El 93% presentó al menos una señal aterosclerótica temprana.

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OBESITY, PLASMA LIPID PROFILES AND METABOLIC SYNDROME AMONG APPARENTLY HEALTHY ADULT NIGERIANS

M. Sani[1], K Wahab[2], B Yusuf[3], O Johnson[3]. *[1]1Department of Medicine, Bayero University Kano/Aminu Kano University Teaching Hospital, Kano, Nigeria [2]2Department of Medicine, College of Health Sciences, University of Ilorin, Ilorin, Nigeria [3]3Department of Medicine, Federal Medical Centre, Katsina, Nigeria. [4]3Department of Medicine, Federal Medical Centre, Katsina, Nigeria*

Obesity has become increasingly prevalent over the past 2 decades; both regional and national investigations have revealed high numbers of overweight and obese adults and children. Risk factors for CVD and type 2 diabetes are known to develop early and tend to cluster among overweight and obese individuals. Nigeria has witnessed socio-economic changes and rural urban migration which have led to emergence of cardiovascular risk factors including obesity and dyslipidaemia. We examine the prevalence of obesity and metabolic syndrome and the relationship between obesity and lipid profiles among apparently healthy adult Nigerians with the aim of developing effective behavioural interventions to promote weight control and physical activity among underserved populations. This is a cross - sectional study carried out at Katsina northwestern Nigeria from April to May 2006. Consecutive consenting adults 18 years and older were recruited. Socio-demographic information and anthropometric measurements were obtained. The body mass index (BMI), WC and WHR were determined. Serum concentrations of triglycerides (TG), total cholesterol (TC) low-density lipoproteins (LDL-C) and high-density lipoproteins (HDL-C) were ascertained. Prevalence rates of overweight, obesity, dyslipidaemia and metabolic syndrome were determined The study group consisted of 300 subjects, 129 males and 171 females (ratio 1:1.3); aged 18 – 75. The mean age of the subjects was 37.56 + 10.57 (males: 37.99 + 9.73, females: 37.23 + 11.18).The mean body mass index (BMI) of the subjects was 26.0 +/- 5.8 (males: 24.0 +/- 4.0, females: 27.5 +/- 6.5). Sixty four (21.3%) of the subjects were obese (BMI $>$ 30Kg/m2) while 32% were over weight (BMI 25 – 29.9 Kg/m^2). Across all grades of obesity females were significantly more affected than males ($p<0.05$). A total of 77 (25.7%) subjects were hypertensive. Sixteen (5.3%) of the subjects had type 2 DM. Sixteen (12.4%) males and 115 (64.2%) had increased WC more than 102 cm and 88 cm respectively. The mean WHR was 0.89 and 0.87 in male and female subjects, respectively. WHR was increased (>0.9) in 58 (45%) of males and >0.85 in 111(65%) of females. Eighty five (28.3%) had raised TC ($>$200mg/dl), 77 (25.7%) had raised LDLc ($>$130 mg/dl) and 67 (52%) male and 111 (65%) females had low HDLc ($<$40mg/dl and$<$ 50mg/dl respectively). Triglyceride was high ($>$ 150 mg/dl) in 45 (15%) of the subjects. The overall frequency of metabolic syndrome was 22% with a higher frequency in women compared to men (30.4% vs. 10.9%, $p<0.001$). The odd of having the syndrome was increased in women and in the presence of obesity, hypertension, diabetes or impaired fasting glucose and dyslipidaemia. We found that there is a high prevalence of obesity, dyslipidaemia and metabolic syndrome among apparently healthy Nigerian adults. There is a need to encourage physical activity and healthy lifestyle in order to reduce the observed high prevalence.

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Correlation of ischemic wall motion abnormalities in stress echo with observed morphologic pattern in twelve lead exercise electrocardiography.

N.G Allende[1], R Perez De La Hoz[1], E Carrasco[1], G Marambio[1], S Carabajal[1], C Vazquez[1], M Russo[1]. *[1]SANATORIO OTAMENDI MIROLI*

Objectives: Discordance between exercise stress electrocardiography (eECG) and stress echo (SE) results is often observed in clinical practice. We sough to assess the prevalence of this finding and the relation between eECG morphology and stress induced wall motion abnormalities. **Method:** We prospectively recorded in a database eECG results of 709 treadmill SE performed in our laboratory between year 2000 to 2005 because of known or suspected coronary artery disease. Sixteen patients where excluded from the analysis because of confounding factors (LBBB, WolfPW, aortic stenosis, pacemaker rhythm and rest ST segment abnormalities). We considered $>=$ 1 mV ST segment depression to be a positive (+) eECG and new or worsened exercise induced wall motion abnormalities a positive (+) SE. To assess the relation between eECG morphologic pattern and SE we developed a score taking into account the magnitude of ST segment depression and its morphology (upsloping, flat or downsloping). We also analyzed the relation between the number of leads affected and (+)SE results. The localization of ST segment depression in eECG was compared to the territory of ischemic wall motion abnormities in SE. Chi-square test was applied for categorical variables and nonpaired T test for continuous variables. **Results:** 693 patients were included in the analysis. 149 had (+)eECG and 79 had (+)SE. From the 149 with (+)eECG 53 had (+)SE results. There was a strong correlation between (+)eECG and (+)ES (p:$<$0,00001) and this was maintained in several subgroups analyzed (women, previous myocardial infarction). However this was not the case for women $<$ 65 years old (p:0,23). The magnitude and morphology of ST segment correlated well with (+)SE (p:0,007). The number of eECG leads affected didn't achieve statistically significance relation. Localization of ST segment depression in eECG (+) did not correspond to SE wall motion abnormalities. **Conclusions:** About two thirds of the patients having (+)eECG do not have ischemic response in SE. However a positive eECG and its morphologic pattern still have a strong association with SE results. This is not true for the subgroup of women$<$65 years old. In this case SE suggest false positive ECG result in many cases. The localization of ST segment depression in eECG failed to indicate the ischemic territory in SE.

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VALVE REPLACEMENT WITH BILEAFLET HP-BIPLUS MECHANICAL PROSTHESES VERSUS STANDARD PROSTHESES: LONG-TERM RESULTS.

T. F. Cianciulli[1–3], **M. A. Beck**[1], J. A. Lax[1], M. C. Saccheri[1–3], L. A. Cozarinsky[1], F. J. Gadea[1], A. N. Dorelle[1], R Guidoin[2], H. A. Prezioso[1], L. A. Vidal[1]. *[1]Hospital "Dr. Cosme Argerich", Government of the City of Buenos Aires. Cardiology Department. Buenos Aires, Argentina [2]Quebec Biomaterials Institute, Centre de Recherche, CHUQ and Department of Surgery, Laval University, Quebec, Canada. [3]Researchers of the Secretary of Health of the Government of the City of Buenos Aires.*

Background: There are no reports available regarding the hemodynamic assessment and survival of patients undergoing valve replacement with HP-Biplus prostheses, and the need for such information led to design the present study. **Objectives:** 1) to assess potential hemodynamic differences between the HP-Biplus prosthesis and the standard bileaflet mechanical valves (SJM, ATS, Sorin bicarbon and Carbomedics) 2) to assess the incidence of postoperative complications and long-term mortality. **Methods:** we performed a retrospective cohort study of patients who survived a mitral or aortic valve replacement between January 1985 and December 2005. A group of 277 patients, 35 with HP-Biplus prosthesis (aged 52$\pm$13 years, 20 men) were compared to 242 patients (aged 58$\pm$14 years, 141 men) with a standard prosthesis: SJM, ATS, Sorin Bicarbon or Carbomedics. **Results:** at 7 years, actuarial survival was 41% for the HP-Biplus prosthesis and 85% for the standard prostheses ($p<0.0001$). Complication-free rates related to standard bileaflet mechanical prostheses (78.2%), were significantly better than with the HP-Biplus prosthesis (8%). When patients with an HP-Biplus prosthesis were compared to patients with a standard prosthesis, they were found to have a higher percentage of reoperations in aortic position (15.2% vs. 1.7%, $p<0.003$, OR 10.3), a higher percent of prosthetic dysfunction (67.6% vs. 7.4%, $p<$ 0.00001, OR 25) and a higher rate of total events (72% vs. 21.8%, $p<0.0001$, OR 11). Valve replacement with standard prostheses carries a low morbidity and mortality rate (21.8%), whereas the HP-Biplus prosthesis carries high morbidity and mortality rates (92%). A Cox proportional hazards model showed significant reduction in cardiac mortality rate and prosthesis-related morbidity in patients who received a standard prosthesis. **Conclusions:** This study is the first one to compare the long-term results of HP-Biplus prostheses with the standard mechanical prostheses. Patient survival and complication-free rates related to standard bileaflet mechanical prostheses, were significantly better than with the HP-Biplus prosthesis.

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Outcomes of Primary Percutaneous Coronary Intervention for Acute ST-elevation Myocardial Infarction in patients aged over 80 years

I. Teplitsky[1], A.R. Assali[1], H. Vaknin Assa[1], E. Lev[1], D. Brosh[1], I. Ben-Dor[1], S. Fuchs[1], N. Shor[1], A. Battler[1], R. Kornowski[1]. *[1]Cardiology Department, Rabin Medical Center, Petach Tikva,and the "Sackler" Faculty of Medicine, Tel-Aviv University, Israel*

Background: Percutaneous Coronary Intervention (PCI) treatment in elderly patients with Acute Myocardial Infarction (AMI) has become the preferred revascularization method in most institutions with interventional facilities and experienced operators. This study aimed to evaluate clinical outcomes in the patients(pts) $\geq$80 years treated by Primary PCI for AMI at our center. **Methods and results:** We used our clinical database consisting of all pts treated by primary PCI ($\leq$ 12 hours) for AMI excluding pts with shock. The clinical and angiographic results distinguished according to age $<$ 80 years and $\geq$ 80 years are shown in Table:

	$<$80 Y(n=821)	$\geq$ 80 y (N=65)	P- value
Age	59 $\pm$11	85 $\pm$ 4	0.001
Male	82%	55%	0.0001
Anterior Wall Acute MI	47%	52%	0.3
LVEF$<$40%	40%	53%	0.06
Killip Class $>$1	16%	22%	0.001
Diabetes mellitus	27%	35%	0.1
Renal Failure(GFR,60 ml/min/1.73 m^2)	12%	45%	0.0001
Post TIMI 3	95%	85%	0.01
No-reflow	5%	16%	0.001
Anti GP 2B/3A	81%	49%	0.0001
Procedural success rate	95%	85%	0.01
CADILLAC risc score	4.0$\pm$3.4	7.5$\pm$3.53	0.0001
6-months			
Death	4.8%	16%	0.03
Re-infarction	6.5%	6.6%	0.8
Stent Thrombosis	3.3%	1.5%	0.4
MACE	16%	27%	0.3
Stroke	0.2%	1.6%	0.06
CABG	4.5%	3.1%	0.8
TVR	9.3%	12%	0.6

Multivariate analysis rise suspicion that Killip Class$>$1(OR=1.4[1.04–1.9]; p=0.03); no-reflow(OR=3.3[1.1–10];p=0.04 and age $>$ 80 Y(OR=1.04[0.99–1.1];p=0.09) are an independent risk factors for one month mortality.

Conclusion: 1) Emergency Primary PCI in the octogenarian patients is feasible with overall

good procedural success rate, 2) Killip Class>1, no-reflow and RV involvement were associated with one-month mortality.

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The electrical remodeling in the senescent over 90 years old - Gender differences and clinical aspects

S. Sclarovsky[1]. [1]*Procardia Cardiological Center, Maccabi Health Center*

In very old patients the reactivated fetal genes induce cardiac remodeling which is adapted to hemodynamic changes The remodeling adapted indicates increase of myocyte volume or mal-adaptive indicating an increase of fibroblast proliferation an hence an increase in collagen release. **Purpose:** To study the gender electrical remodeling in patients over 90 years old and its clinical aspects. **Material and methods:** The ECG's were transmmited trough telemedicine to Procardia Cardiac Center from 130 Maccabi communities health centers with demographic and clinical data. We divided the electrical remodeling into 5 areas(A) - (A1):Basal, R in AVL >10mm, S in LIII > 10mm, (A2) : Apical, R in V5 or V4 >25mm, (A3): Septal, R in V2 or V3 >10mm and the higher R in precordial leads, (A4): Posterior, S waves in V2 or V3 > 10 mm and the deepest S in the precordial leads, (A5) : Lateral, R in LI >10mm, S in AVR >10mm, and S waves in V1 > 10mm. Adapted remodeling - no ST-T depression in left lateral wall. Mal-adapted electrical remodeling expressed by ST-T depression in left lateral wall in both groups. **Results:** No electrical remodeling – Male: 5%, Female : 24,3 %. Adapted – Male : 80%, Female 59. %. Among them - Septal: Male 15% Female 2,1%, Posterior : Male 2,8%, Female 21%. Pacemaker : Male 15%, Female 0% LBBB : Male 0% Female 10% **Conclusion:** Male have no electrical remodeling and are better adapted than females, suggesting that male need better electrical physiology than female to survive over the age of 90. In male, no LBBB was seen in this study excluding male with pacemaker.whilst female can survive with CLBBB. This suggests that patients with complicated intra ventricular block will need to be paced. The predominant area of electrical remodeling is the posterior area in female whilst in male is the septal are and the predominant.

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Level of knowledge of the impact of cardiovascular disease in women's mortality, in three population groups: ordinary women, nurses and medical doctors in Santiago, Chile.

M. Fernandez[1–2], P. Arellano[1–2], V. Vera[1–2], P. Uriarte[1–2], M. Tobar[1–2], A. Abufhele[1–2].
[1]*Cardiology Department, Clinica Alemana de Santiago* [2]*Universidad del Desarrollo*

Introduction: Cardiovascular disease (CVD) is the leading cause of women's mortality in Chile as it is in developed countries. It reaches 31% of general mortality. Nevertheless the awareness on this fact is low within the female population. **Aim:** to evaluate nurses, medical doctors and female general population's awareness of the impact of CVD in female mortality. **Methods:** A survey was made to a group of 694 ordinary women, 409 nurses, 75 doctors (cardiologists and specialists in internal medicine), and 26 medicine interns. Two questions were performed: the first one related to general mortality and second to mortality by specific pathology. In the general question, they were asked to indicate the most important cause of female mortality among cardiovascular, oncologic and respiratory pathology. In the specific one they were asked to decide among acute myocardial infarction, breast cancer and pneumonia. The medical group was only asked the first question, regarding the general cause of mortality. **Results:** The ordinary female group answered that the main cause of death was oncologic pathology (70%), followed by cardiovascular disease (29%) and respiratory causes (1%). The answer to the specific cause of death in the general female group was: 83% breast cancer, 16% acute myocardial infarction and 1% pneumonia. In the nurses group 89% responded that the main cause of death was oncologic pathology, 11% cardiovascular and less of 1%, respiratory disease. The answer to the specific cause of death in this group was, 79% breast cancer, 20% acute myocardial infarction and 1% pneumonia. In the medical group 57% responded that the main cause of death was the oncologic pathology, 41% cardiovascular and 2% the respiratory one. The subanalysis of this group showed that the medicine interns indicate cardiovascular pathology as the main cause of mortality in a 73%, the internal medicine specialists in a 59% and the cardiologists in a 55%. In this same group when separated by gender, the women indicate CVD as the main cause of death in a 50% and the men in a 63%. **Conclusion:** The level of awareness on the importance of the CVD in women in the studied population is very low, being still low in the medical population. The group with greater knowledge regarding this subject, were the medical interns.

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Noncompaction of the ventricular myocardium (NCVM)

A De Dios[1], E Flores[1], A Olive[1], M Pasquale[1], M Vaccari[1], M Vidal[1], **M Zampach**[1], B Zarlenga[1], R Cayre[2]. [1]*Children' s Hospital Pedro Elizalde. Buenos Aires. Argentina*
[2]*Developmental Anatomy Section. School of Medicine. National University of Northeast. Corrientes.Argentina*

Background: NCVM is a genetic disorder. It is believe that is due to an arrest in the normal process of myocardial compaction during intrauterine life. **Objectives:** Identify the clinical and echocardiography's features, as well as frequent associations in order to reach to a proper detection. **Methods:** 24 children with NCVM were reviewed, at "Pedro de Elizalde" Hospital from April 1999 to 2007. NCVM was diagnosed when 3 criteria were established: (1) the presence of multiple echocardiographic trabeculations, (2) multiple deep inter-trabecular recesses communicating with the ventricular cavity, as demonstrated by color Doppler imaging and the recesses demonstrated in the apical or middle portion of the ventricle, and (3) noncompacted versus compacted myocardium ratio >2. Medical records were examined to document: clinical presentations, symptoms, primary diagnosis, associated dysmorphic features, positive family history, echocardiograms, ECG, Rx, holter and MNR findings. **Results:** 24 patients (p) with NCVM. 18 male (75%), 6 female (25%). The median age at presentation: 6,7 years (5d to 29y). 4 p <1year (16%). 33% with positive family history (8p). Underlying congenital heart disease (CHD): 6 p: 2p with PDA, 1p with mitral dysplasia, 1p with ventricular septal defect, 3 with pulmonary stenosis (12,5%). Initial referral: Congestive heart failure (CHF) 4p (16%); history of dilated cardiomyopathy 4p (16%); familiar screening 3p (12,5 %); murmur 3p (12,5%); Dysmorphic features 1p (4%), diserythropoyesis 1p (4%); apnea 1p (4%) and syncope 1 p (4%). Clinical presentations: 11p (45,8 %) systolic murmur, 4p (16%) CHF. ECG: sinusal rhythm 18p (75%), nodal rhythm 3p (12,5%), 1p (4%) pacemaker, ventricular preexitation 2p (8%). 3p incomplete right bundle branch block (12,5%) and 3p left anterior hemi-block(12,5%). 1p long QTc (4%). 9p diffuse repolarization abnormalities (37,5%). Thoracic RX: cardiomegaly 14 p (58%), 10 p severe, 3 moderate and 1 trivial. Echocardiography: left ventricle (LV) diastolic diameter: 50%. Depressed LV systolic function: 14p (58%), with decreased lateral excursion Mitral valve 7 p (29 %), mitral insufficiency 10p (41,6%), abnormal TEI index 11p (45.8%), pattern restrictive in LV 15 p (62,5%) and impaired relaxation 4 p (16%). Affects zones: apex LV: 10p (41,6%). Apex + lateral wall: 3p (12,5%), apex + lateral wall + septal: 2p (8%), Biventricular 1 p (4%). Hypokinetic zones: septum 9p (37,5%), apex 6p (25%), lateral wall 2p (8%) and basal 3p (12,5%). MRI: performed in 8p confirmed the diagnosis. Holter: 5p: 2 normal (8%), 1 pace maker rythme (4%), 1 nodal rythme (4%) y 1 p pre-mature atrial contractions (4%). Cardiac Catheterize: 3p: pulmonary valvuloplasty, 1p Amplatzer closure PDA and the third one with severe mitral insufficiency to evaluate pulmonary hypertension. **Conclusions:** NCVM is more frequent in males. It was diagnosed at different ages. NCVM was sporadic or familiar (33%). The clinical presentation was diverse: from asymptomatic to heart failure (16%). LV systolic function was depressed: 58%, restrictive LV physiology: 62,5%. Diffuse repolarization abnormalities were found in 37,5%

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Activated Factor XII and B-type natriuretic peptide, but not C-reactive protein, are independent predictors of mortality following admission with suspected myocardial infarction.

V Pönitz[1], T Brügger-Andersen[1], D Pritchard[2], H Grundt[1], H Staines[3], DTW Nilsen[1].
[1]*University of Bergen and Stavanger University Hospital, Norway* [2]*Axis-Shield, Dundee, UK*
[3]*Sigma Statistical Services, UK*

Background: The study aim was to assess the utility of activated Factor XII type A (XIIaA), B-type natriuretic peptide (BNP) and highly sensitive C-reactive protein (hsCRP) in multivariate analysis models predicting all-cause mortality in patients admitted with chest pain. **Methods:** Multivariate analysis of all cause mortality in 871 patients admitted with suspected MI was performed using the Cox Proportional Hazard Ratio. Data input into the model included XIIaA, BNP and CRP as well conventional risk factors for mortality such as age, smoking, previous history of coronary heart disease (CHD), hypertension, diabetes mellitus, left ventricular function (EF), troponin T (TnT) and se-creatinine. **Results:** Of 871 patients, 386 had a TnT concentration [TnT]>0.05 ng/mL at admission whilst 485 had a [TnT]≤0.05ng/mL. 66 % of the latter group had known pre-existing CHD. 138 patients died within 24 months. Hazard ratios associated with XIIaA, BNP and CRP are shown in the table. Both XIIaA and BNP are independent predictors for all-cause mortality in the group containing all patients, BNP is an independent predictor for all cause mortality in patients who had confirmed MI (TnT>0.05ng/mL) at admission, whereas XIIaA is an independent predictor for all cause mortality in patients with low or absent TnT release at admission. In contrast, hsCRP was not an independent predictor of all-cause mortality in the studied population. **Conclusion:** XIIaA and BNP provide independent and complementary information on all-cause mortality risk following admission with suspected MI. XIIaA is particularly useful in predicting mortality in patients who did not have MI at admission, whereas BNP is effective in predicting mortality in patients with confirmed MI.

		All patients	TnT >0.05 ng/mL at admission	TnT ≤0.05 ng/mL at admission
Cox Proportional Hazard Ratio (95% CI)	XIIaA	2.30** (1.37–3.86)	N.S.	3.75** (1.63–8.63)
	BNP	5.47** (2.11–14.19)	4.34* (1.36–13.83)	N.S.
	hs-CRP	N.S.	N.S.	N.S.

*: p<0.05; **: p<0.01; N.S. = Not significant.

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Activated Factor XII type A is an independent predictor of cardiovascular outcome in coronary patients admitted with troponin T negative chest pain

V. Pönitz[1], T Brugger-Andersen[1], D Pritchard[2], H Grundt[1], H Staines[3], DTW Nilsen[1].
[1]*University of Bergen and Stavanger University Hospital, Norway* [2]*Axis-Shield, Dundee, UK*
[3]*Sigma Statistical Services, UK*

Background: Activated Factor XII (XIIa) is a predictor of recurrent coronary ischemic events in patients following a myocardial infarction (MI). Recently, novel in-vivo types of XIIa have been described. We assessed the relation between admission levels of activated factor XII type A (XIIaA) and a combined endpoint of recurrent troponin T (TnT) positive events (TnT >0.05 ng/mL and an MI typical pattern of gradual rise and fall in TnT) and cardiac mortality in a large, consecutive cohort of patients admitted with chest pain. **Methods:** Blood samples for XIIaA determination were obtained immediately following admission in 871 patients admitted with chest pain and suspected acute coronary syndrome (ACS). Plasma XIIaA concentrations were determined by ELISA at admission. Cardiovascular outcome within each quartile of XIIaA was compared at 6 months follow-up. **Results:** At index hospitalization, 386 (44.3%) patients had a peak TnT concentration exceeding 0.05 ng/mL and 485 (55.6%) had a peak TnT concentration of 0.05ng/mL or below. Of the latter group, 66% had known pre-existing coronary heart disease (CHD). After a follow-up period of 6 months, 67 patients had suffered

from a recurrent TnT positive event and 52 patients had died from a cardiac reason. Whilst XIIaA levels were not related to increased risk for cardiovascular outcome in the group of patients with TnT>0.05ng/mL at admission, XIIaA predicted 6 months cardiovascular outcome for patients with absent or low TnT at admission. This risk prediction was particularly pronounced in the subgroup of patients with pre-existing CHD. The unadjusted odds ratios (OR) for quartile 4 versus quartile 1 for the combined endpoint of cardiac death or TnT positive events for the different subgroups are displayed in table 1. In a multivariate logistic regression model, XIIaA added prognostic information for cardiovascular outcome after adjustment for age, sex, peak TnT, BNP, CRP, creatinine, history of CHD or heart failure, NYHA class, hypertension, diabetes mellitus, smoking history, ejection fraction (EF), administration of clopidogrel, thrombolysis or statin prior to admission and angiography following admission.(table 1). **Conclusion:** XIIaA is a powerful and independent indicator of 6 months cardiovascular outcome in CHD patients admitted with chest pain with low or absent TnT release and provides prognostic information above and beyond conventional risk factors.

TABLE 1: ORS COMPARING PATIENTS WITH XIIAA IN Q4 WITH PATIENTS IN Q1 FOR THE COMBINED ENDPOINT OF CARDIAC DEATH OR A RECURRENT TNT POSITIVE EVENT 6 MONTHS FOLLOWING ADMISSION FOR CHEST PAIN.

	Univariate analysis, OR (95% CI; p)	Multivariate analysis, logistic regression; OR (95% CI; p)
TnT >0.05ng/mL) (n=386)	1.03 (0.47–2.24; ns)	–
TnT ≤0.05 ng/mL (n=485)	5.85 (1.65–20.79; p<0.01)	5.44 (1.43–20.67; p<0.05)
TnT≤0.05 ng/mL pre existing CHD (n=318)	4.00 (1.24–12.88; p<0.05)	3.76 (1.06–13.28; p<0.05)

CI: confidence interval; ns: not significant

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Mitral valve repair surgery

V. Bichara[1], J. Tazar[1], A. Araujo[1], R. De Rosa[1]. [1]*Instituto de cardiología*

In mitral valve disease, replacement is not longer the only surgical treatment; as it has been observed that repair allows the preservation of the mitral valve, thus preserving the geometry of the left ventricle and improving its performance. **Objective:** to describe the results obtained from our surgical experience in repairing the mitral valve in a 10-year period. **Materials and Methods:** Cross-section study of a series of consecutive cases. January 2007 – May 2007. Population: 23 patients with mitral valve insufficiency and/or mitral stenosis of different etiologies subjected to mitral valve repair surgery. Before and after surgery, every patient had been subjected to an intraoperative transesophagus echo to notice the results of repair, the presence of complications and to quantify residual mitral failure. Ethical considerations: Authorization was requested from our teaching and research committee. Descriptive analysis of variables under study was performed as well as association of those which were of interest. **Results:** 70% of patients were men (16 out of 23). Average age 30±7 years. 35% of patients (8 out of 23) (IC95%:13%;56%) p<0,001) presented valve damage of rheumatic disease, myxomatous degeneration 30% (7 out of 23), congenital cardiac disease 26% (6 out of 23) and secondary infectious endocarditis 9% (2 out of 23). Among patients with rheumatic disease; (4 out of 8) patients presented double valve damage, (3 out of 8) patients presented mitral estenosis and (1 out of 8) patients presented mitral valve insufficiency. The most prevailing type of mitral valve disease (70% of cases) (IC95:(45%;87%) (p<0,001) was severe mitral insufficiency (16 out of 23 patients). Through repair surgery primary success was achieved in 20 out of 23 patients. 3 patients presented mitral valve insufficiency of moderate degree; two of them were subjected to replacement valve surgery during the operation. **Conclusions:** Our experience provides us with encouraging data relating surgical repair of the mitral valve even in those patients with rheumatic disease, a pathology that prevails in developing countries. Besides, future research in this direction and advance in surgical will allow an increase in the number of patients that can have access to valve repair.

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BODY COMPOSITION ANALYSIS WITH COMBINATED PHYSICAL TRAINING IN CORONARY PATIENTS

M. Resnik[1,2], M. Ruffa[1–2], S. Taurozzi[1–2], L. Maggio[1–2], M. Perez Ruffa[1–2], E. Abad Monetti[1]. [1]*JULIO MÉNDEZ HOSPITAL* [2]*ATHLETE' S GIMNASIO & CLUB*

Anthropometric measures were considered not only as an important topic in physical training evaluation, but also as a coronary risk marker within an integral planification of secondary prevention in cardiovascular rehabilitation. The purpose of our study was to analize the body compotition changes with aerobic and resistance training, including a nutritional education program. **Methods:** We evaluated nineteen patients (p) males, clinically stable with medical treatment, mean age 57,2 ± 9,2 years, with documented coronary heart disease (CHD). Height, weigth, skinfold and girth measurements were made before and after completion of the 12 - week aerobic and resistance training. Skinfold thicknesses were assessed at 7 sites by Harpenden Caliper: biceps (Bi), triceps (Tri), subscapular (Se), suprailliac (Si), abdominal (Ab), mid-thigh (Mt), medial calf (Mc), and body circumferences were evaluated with a flexible tape: right arm relaxed (Rar), flexed 45° angle (Raf), waist (W), hip (H) and thigh (T). Skinfold and circumferences techniques were applied pre and post training, 3 times and the mean value was used. We completed our evaluation with the following variables: waist/hip ratio (WHR), body mass index (BMI) and estimation body fat by YMCA method for four sites (%BF). Training program: all the subjects met 2 times a week for 30 minutes of resistance training, 8 exercises of upper and lower body exercises (1 set of 10–15 repetitions at 30–60 1RM), depending on functional capacity in stress testing, 30 minutes of aerobic exercises in treadmill and/or cycles ergometer (50–80% heart rate reserve) and additional activities: muscular conditioning, flexibility, recreational exercises. *Student's* t test for paired samples was used. **Results:** all patients developed the training session without symptoms. There were no differences (p>0,05) in all the variables evaluated, except Mt (p 0,04). **Conclusions:** we could observe lower reductions in the skinfold thicknesses and %BF (2,09%) and light increase in mass muscle, probably related to an endurance training over strength. These results suggest that it's necessary to reinforce the educational program of nutrition, based on the relationship body fat and risk of cardiovascular and other diseases.

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Head to Head Comparison of Prognostic Value of Dobutamine and Adenosine Real-Time Myocardial Contrast Echocardiography- Preliminary Results

A. Alves[1], I. Kowatsch[2], J. Tsutsui[3], A. Osório[4], L. César[5], J. Ramires[6], W. Mathias Jr[7]. [1]*Heart Institute (InCor) – University of São Paulo Medical School, Brazil* [2]*Heart Institute (InCor) – University of São Paulo Medical School, Brazil* [3]*Heart Institute (InCor) – University of São Paulo Medical School, Brazil* [4]*Heart Institute (InCor) – University of São Paulo Medical School, Brazil* [5]*Heart Institute (InCor) – University of São Paulo Medical School, Brazil* [6]*Heart Institute (InCor) – University of São Paulo Medical School, Brazil* [7]*Heart Institute (InCor) – University of São Paulo Medical School, Brazil*

Background: Myocardial perfusion imaging using real-time contrast echocardiography (RT-MCE) has been demonstrated useful for detecting coronary artery disease (CAD). **Objective:** We sought to perform a head-to-head comparison of prognostic value of dobutamine and adenosine in predicting the outcome of patients with suspected CAD. **Methods:** We retrospectively studied 54 patients who underwent effective dobutamine and adenosine stress RTMCE within maximal interval of 24 hours. RTMCE was performed using low-mechanical index imaging during continuous intravenous infusion of commercially available contrast agent (Definity, Bristol-Myers Squibb) with flash impulse to destroy microbubbles in the myocardium. The replenishment velocity (β) and an index of myocardial blood flow normalized by left ventricular blood pool (Anxβ) reserve were derived from quantitative analysis of myocardial perfusion. Events were defined as death, myocardial infarction, unstable angina or revascularization after 3 months of follow-up. Patients who underwent revascularizations before 3 months were excluded from analysis. The prognostic value of RTMCE over clinical risk factors and other echocardiographic data was examined using a log-likelihood test (Cox Model). **Results:** Final population consisted of 46 patients with mean age was 59+/-10 years, 17 (37%) men. During a median follow-up of 39 months (range, 1 to 50 months), 11(24%) events occurred (1 death, 5 unstable angina, 3 percutaneous revascularizations and 2 surgical revascularizations). By univariate analysis, the predictors of events were detection of wall motion abnormalities (WMA) during both dobutamine (p=0.012) and adenosine stress (p=0.043), detection of perfusion defect by qualitative analysis during dobutamine stress (p=0.029), detection of perfusion defect by qualitative analysis during adenosine stress (p=0.022) and abnormal quantitative analysis during adenosine stress (p=0.026). By multivariate analysis, the only independent predictors of events were detection of WMA during dobutamine RTMCE (Relative Risk=4.08; p=0.043), and perfusion defect by qualitative analysis of adenosine RTMCE (Relative Risk =4,41; p = 0.036). When considering the combination of WMA and perfusion defect either by qualitative or quantitative analysis, dobutamine (Relative Risk =4,65; p = 0.031) and adenosine (Relative Risk =4,17; p = 0.041) RTMCE were independent predictors of events. **Conclusions:** Both dobutamine and adenosine stress RTMCE are independent predictors of events in patients with suspected CAD. During dobutamine stress, the combination of WMA or perfusion defect analysis provides better index for predicting events in the follow-up, while during adenosine stress qualitative analysis of perfusion defects was the best prognostic parameter.

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THE IMPACT OF PREOPERATIVE ATRIAL FIBRILLATION IN PATIENTS UNDERGOING MITRAL VALVE SURGERY: 15 YEARS OF EXPERIENCE OF A CARDIAC SURGERY SERVICE

R. Santa Ritta[1], M Coutinho[2], E Varella[1], F Di Giovanni[1], K Da Correggio[2], G Longo[1], C Fontana[1], S Fadel[1]. [1]*Hospital of Charity (Florianópolis / Brazil)* [2]*Hospital of Federal University of Santa Catarina (Florianópolis / Brazil)*

Objectives: Atrial fibrillation (AF) is the most common sustained arrhythmia in adults and it increases importantly overall and cardiovascular morbidity and mortality. The objectives of this research were to establish the preoperative prevalence of AF in patients undergoing mitral valve surgery, and to identify associations between preoperative AF and events correlated to in-hospital postoperative morbidity and mortality. **Methods:** A retrospective cohort study with a cross-sectional component was conducted with 234 mitral valve surgeries performed between 1992 and 2006 in a Cardiac Surgery Service, whose patient's demographic and clinical preoperative characteristics as well in-hospital postoperative informations were statistically analyzed. **Results:** The preoperative AF prevalence was 59% and these patients were older than those without AF [(52.4 ± 2.2 versus 44.0 ± 2.9 years), (p<0.0001)]. Were also significantly associated with preoperative AF: history of hypertension [prevalence ratio (PR)=1.3, (p=0.046)], history of AF [(PR=17.5), (p<0.0001)], history of stroke or transient ischemic attack [(PR=1.8), (p<0.0001)]; New York Heart Association (NYHA) functional classification IV [(PR=1.5), (p=0.0003)]; use of antiarrhythmic [(PR=2.0), (p<0.0001)], use of platelet inhibitors [(PR=1.6), (p=0.0021)], use of anticoagulants [(PR=1.8), (p<0.0001)], use of digitalis [(PR=1.4), (p=0.0019)] and use of diuretics [(PR=1.5), (p=0.0029)]. The preoperative AF increased the number of mitral valve replacements compared to mitral valve repairs [relative risk (RR)=1.4, (p=0.0158)], increased the length of stay at coronary intensive care unit after surgery [(4.2 ± 1.0 versus 2.3 ± 0.2 days) (p=0.0019)], increased the overall length of stay at hospital after surgery [(12.5 ± 2.5 versus 11.1 ± 1.5 days) (p=0.0241)], increased the incidence of thromboembolic complications [(RR=3.6), (p=0.0196)], increased the incidence of non-thromboembolic complications [(RR=2.6), (p=0.0006)] and increased the

incidence of death [(RR=5.5), (p=0.0072)]. **Conclusions:** The preoperative prevalence of AF in mitral valve surgeries was 59% and it increased significantly the length of stay at coronary intensive care unit and at hospital after surgery, the incidence of thromboembolic and non-thromboembolic complications, and the incidence of death.

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Nurse led heart Failure clinic is cost effective in New Zealand

I. Ternouth[1], B Lindsay[2]. [1]*TARANAKI HEALTHCARE LIMITED* [2]*TARANAKI HEALTHCARE LIMITED*

Background: Heart Failure is a diagnosis with known high costs in terms of dollars, resource utilisation, morbidity and mortality. Management of it is known to be difficult and often not done according to guidelines with suboptimal outcomes. Nurse-led Heart Failure Clinics elsewhere have been shown to improve patient outcomes and reduce health costs. A semi-autonomous nurse-led Cardiologist overseen clinic in a small rural hospital in New Zealand was therefore set up with a Nurse with prescribing privileges. **Methods:** A total of 107 sequential heart failure patients admitted to the outpatient clinic were evaluated. Evaluation of the Hawera Heart failure clinic (Oct 2003- Feb 2007) included examination of hospital re-admission rates, bed-days and surveys from patients, GP's and Hospital Physicians. Additional comments were also encouraged on the survey forms. **Results:** Reductions in hospital days were shown by comparing admissions during an equal period before and after the first heart failure first clinic. In this way patients acted as their own control. Readmission rates at three months, six months and one year showed 229, 153 and 118 fewer hospital days respectively. As one heart failure admission costs approximately NZ$3257 the results can also be translated into cost savings. Patients reported improvements in their condition, quality of life and their ability to self-manage their heart failure. With one exception there was a positive response from the GP's and Hospital Physicians with regards to the pharmacological and non-pharmacological management of patients as well as to the inter-disciplinary team-work that occurred. **Conclusions.** Results of the evaluation suggested positive trends with reduced morbidity and costs. Also important was the positive feedback from the intra-disciplinary team and patients involved. On the basis of this audit and strength of data from clinical trials a new intra-sectoral community clinic has been set up. The clinic is run autonomously by a Prescribing Nurse Practitioner but with strong links to the cardiology department and Cardiologist review available should it be necessary.

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IS MULTI SLICE CT ANGIOGRAPHY ADEQUATE AS THE SOLE DIAGNOSTIC CRITERIA TO PROCEED FOR CABG ?

H. Bedi[1], J Gill[2], S Bakshi[2]. [1]*Ludhiana Mediciti* [2]*Delta Heart Centre*

Background: Rapid advances in multislice computed tomography (MSCT) have facilitated increasingly accurate noninvasive coronary imaging. The present study was designed to assess the accuracy of the 64 slice MSCT scanner with conventional coronary angiography (CCA) and to conclude whether or not MSCT angiography alone could give sufficient and accurate information to proceed with coronary artery bypass grafting (CABG). **Methods:** 50 stable patients with proven severe CAD on CCA for elective CABG underwent MSCT prior to CABG. The MSCT images were compared with CCA and the accuracy, sensitivity and specificity of detecting significant stenosis cross checked. **Results:** An excellent correlation was found between the two modalities. Comparing the maximal percent diameter luminal stenosis by MSCT versus CCA, the Spearman correlation coefficient between the two modalities was 0. 99 ($p < 0.0001$). Bland-Altman analysis demonstrated a mean difference in percent stenosis of 0.6 $\pm$ 2.3% (95% confidence interval 5.1% to –3.9%). 93.4 % of the observations were within $\pm$ 1.96 standard deviation. Anomalous and intramural coronary arteries were easily picked up by MSCT. **Conclusions:** MSCT is a valuable tool for the cardiac surgeon. It helps in precise planning of the CABG especially off-pump CABG and in prejudging the length of the conduit required. On the basis of our findings we recommend MSCT as a sole criteria for proceeding for CABG without CCA in selected cases.

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SURGICAL TREATMENT OF CHRONIC SEVERE RIGHT VENTRICULAR CARDIOMYOPATHIES

M. Cortes Morichetti[1–3], J-L. Hebert[3], T. Lavergne[1], R. Frank[2], G. Fontaine[2], F. Hidden-Lucet[2], Y. Lecarpentier[3], A. Carpentier[1], J-N. Fabiani[1], J. C. Chachques[1].
[1]*Department of Cardiovascular Surgery, European Hospital Georges Pompidou, Paris, France* [2]*Cardiology Department, La Pitie-Salpetriere Hospital, Paris, France* [3]*Cardiorespiratory Function Testing Unit, Bicêtre Teaching Hospital, Ie Kremlin Bicêtre, France*

Objective: Despite recent advances in medical and surgical therapies, the prognosis of chronic right ventricular (RV) failure remains poor. The aim of this work is to present the surgical technique and long-term results of RV dynamic cardiomyoplasty applied in patients with RV failure due to isolated RV cardiomyopathies. **Methods:** Twelve consecutive patients (8 males, 4 females), mean age 37$\pm$9 years, were enrolled. All pts had predominant RV dysfunction, associated with tricuspid regurgitation in 11 cases. Etiology of RV failure was arrhythmogenic cardiomyopathy (8 cases), Uhl's disease (2 cases) and ischemic (2 cases). Patients were in preoperative NYHA FC III. Mean pre-operative EF measured by isotopic technique, was 20 $\pm$ 4.2 % for the RV and 37 $\pm$ 8 % for the LV. Right ventricular dynamic cardiomyoplasty consists in wrapping the RV free wall with the left Latissimus Dorsi Muscle (LDM) flap. The distal part of the LDM is fixed to the diaphragm and then electrostimulated in synchrony with cardiac function. Eleven patients required associated tricuspid valve surgery (10 annuloplasty rings and 1 valve replacement). In 6 pts an ICD was implanted prior to surgery. **Results:** Nine patients are alive (mean follow-up: 10$\pm$3.5 years), seven in NYHA functional class I and two in class II. Three deaths occurred: one patient died postoperatively due to infection, one patient died at day 45 due to gastroenteric complication and one patient died at year 7 due to stroke, while in functional class II. At long term follow-up, mean RVEF is 32 $\pm$ 6 % and LVEF is 51 $\pm$ 9 %. **Conclusions:** The results of this long-term study demonstrate hemodynamic and functional improvements following RV cardiomyoplasty with no long-term malignant arrhythmias and RV dysfunction related deaths. The effects of RV cardiomyoplasty can be related to chronic systolic compression and diastolic dilatation restriction (positive remodeling), which may reduce tension and excitability of myocardial fibers. This study suggests that cardiomyoplasty is a safe alternative or long-term bridge to heart transplantation in these patients with relatively preserved LV function.

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Late Complications After Drug-Eluting Stent Implantation in "Real-World" Clinical Practice

D. R Ramsdale[1], A Rao[1], O Asghar[1], K A Ramsdale[1], E McKay[1]. [1]*The Cardiothoracic Centre, Liverpool*

Background: We report the late complications in 407 consecutive patients undergoing drug-eluting stent (DES) implantation by a single operator between 2003–6. **Methods:**A registry was collected prospectively with continuous follow-up. Patients with stable angina (SA) or an acute coronary syndrome (ACS) received DES for lesions >20mm long, vessels < 3.0mm diameter, chronic total occlusion, bifurcation lesions, aorto-ostial lesions, left main stenosis, post-atherectomy, lesions in or beyond saphenous vein grafts, multivessel disease, multilesions in a single vessel, instent restenosis and patients with diabetes mellitus. **Results:**Ages ranged between 34–86 years (mean 60.9$\pm$10.1sd). 59.7% of patients had SA and 40.3% had an ACS. The majority had hypercholesterolaemia and 14.5% had diabetes. 260 patients (63.9%) had percutaneous coronary intervention (PCI) to a single vessel and 147 (36.1%) to $\geq$2 vessels. 597 vessels were treated. 256 patients (62.9%) had multiple lesions treated by PCI, and 109 (26.8%) single vessel multilesion PCI. 290 patients (70%) had long lesions and 221 (54.3%) had vessels $\leq$ 2.75mm diameter. Of the lesions treated by DES, 73.3% were Type B2/C lesions. Between 1–7 stents were implanted per patient. 805 of 866 stents (92.9%) implanted were DES. 106 patients (26%) received $\geq$1 stents $\leq$2.5mm diameter and 243 (59.7%) stents >20mm in length. 177 patients (43.5%) had 1, 230 (56.5%) >1 and 111 (27.3%) 3 or more DES implanted. To date, 23 patients have developed late complications. Instent restenosis (ISR) causing recurrence of angina occurred in 22, between 5–38 months after DES implantation. 2 presented with sudden acute DES thrombosis, one of whom also had ISR. 20 were treated by PCI, 1 coronary bypass surgery and 2 medical treatment. Subsequently 3 of these required further PCI for recurrent ISR and 1 had surgery. 8 patients died during the 1–5 years of follow-up. **Conclusions:** In patients considered to be at increased risk of ISR after bare metal stenting (BMS), DES implantation is associated with a low incidence of late complications. The commonest is ISR which presents later than after BMS. Acute late stent thrombosis is serious but unusual and may be accompanied by ISR.

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Prevalence and Predictors of Carotid Versus Femoral Plaque by Screening Vascular Ultrasound in Asymptomatic Adults

J. Postley[1–4], J Gardin[2], A Perez[3], M Chan[4], ND Wong[3]. [1]*Columbia University, New York, NY* [2]*St John Hospital, Detroit, MIchigan* [3]*Heart Disease Prevention Program, University of California, Irvine* [4]*New York Physicians LLP, New York, NY*

Objective: Ultrasound assessment of carotid (CP) and femoral (FP) artery plaque has shown great predictive sensitivity for CVD in outcome studies; but risk factor (RF) predictors for CP and FP are not well described. We compared predictors of CP and FP in low and intermediate risk individuals without prior evidence of prior CVD. **Methods:** Asymptomatic patients without CVD (n=486) were screened for CP and FP by ultrasound. Age range was 32 to 85 years (46% female). The presence of plaque was defined as a 1.5 mm projection into the lumen. In multivariable logistic regression, we examined mutliple RFs in relation to the likelihood of demonstrating CP, FP, or either CP or FP. Dyslipidemia was defined as a total cholesterol >=240 mg/dl, HDL-C <40 mg/dl, triglycerides >=200 mg/dl, or on medication and hypertension as blood pressure of >=140/90 mmHg or on medication. **Results:** Among 486 subjects, 194 had either CP or FP. Overall, 29% of subjects had CP, 25% had FP, and 40% had either CP or FP or both. The following table shows the odds ratios (OR) and 95% confidence intervals for each RF in relation to the likelihood of CP, FP, and either or both:

	CP Only	FP Only	CP and/or FP
Age(per 10 years)	2.83 (2.17–3.67)***	2.42 (1.87–3.14)***	2.77 (2.16–3.56)***
Male vs. Female	1.92 (1.12–3.31)*	1.83 (1.05–3.19)*	2.14 (1.28–3.58)**
Hypertension (yes or no)	0.75 (0.46–1.22)	1.26 (0.78–2.04)	0.81 (0.51–1.27)
Diabetes (yes or no)	1.70 (0.44–6.56)	0.94 (0.23–3.76)	1.59 (0.39–6.47)
Waist Circumference (per cm.)	1.02 (0.95–1.09)	1.00 (0.93–1.07)	0.99 ((0.93–1.06)
Dyslipidemia (yes or no)	1.50 (0.96–2.34)	1.68 (1.09–2.67)*	1.94 (1.27–2.96)
Smoking:Current vs. none	4.79 (1.82–12.63)**	3.03 (1.11–8.25)*	3.20 (1.23–8.34)*
Past vs. none	1.56 (0.96–2.54)	1.81 (1.10–2.96)*	1.75 (1.09–2.80)*

* p< 0.05, **p<0.01, ***p<0.001

Conclusions: Our study demonstrates that besides advancing age and male gender, dyslipidemia and cigarette smoking (particularly current smoking) appear to be most consistently related to likelihood of carotid and femoral artery subclinical atherosclerosis in asymptomatic individuals without known CVD.

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ROLE OF PATIENT EDUCATION IN EXERCISE ADHERENCE IN PATIENTS UNDERGOING MYOCARDIAL REVASCULARIZATION

G. Giunta[1], D. Comtesse[2], H. Sanabria[3], A. Hershon[4], R. Mayer[5], L. Brandani[6], R. Romero[7], S. Di Yelsi[8], C. Commes[9], S. Kerbage[10]. *[1]FAVALORO FOUNDATION [2]FAVALORO FOUNDATION [3]FAVALORO FOUNDATION [4]FAVALORO FOUNDATION [5]FAVALORO FOUNDATION [6]FAVALORO FOUNDATION [7]FAVALORO FOUNDATION [8]FAVALORO FOUNDATION [9]FAVALORO FOUNDATION [10]FAVALORO FOUNDATION*

Introduction: Whether Education Plans and Cardiovascular Rehabilitation Programs (EPCRP) are useful to improve patient's adherence to exercise after myocardial revascularization (MR) is unknown. **Objectives:** to assess the impact of EPCRPs on exercise adherence. **Material and Methods:** the data of patients undergoing myocardial revascularization in our center between August 2004 and February 2006 was prospectively analyzed. During hospital stay, the patients were included in an EPCRP with a special interest in education. The level of adherence was assessed a year after discharge and compared with a historical control group (MR without EPCRP) by means of a logistic regression model including the baseline data of the patients. **Results:** the group in the EPCRP included 539 patients (age 62.5±9.6; 81.1% males) whereas the historical control group included 173 patients. (age 62.3±10.1; 81% males). At baseline, the prevalence of hypertension was similar in both groups (control group 76.3% vs. EPCRP 77.4%, p=ns), diabetes (control 27.2% vs. EPCRP 28.2%, p=ns) and dislipemia (control 74.6% vs. EPCRP 68.8%, p=ns), prevalence was different as for cigarette smoking (control group 11.0% vs. EPCRP 36.4%, p $f_{\neg}$ 0.001) and the use of statins (control 75.1% vs, EPCRP 84.0%, p = 0.008). The follow up data was completed for 90.5% in the EPCRP group and 96% in the control group. It was observed that a year after surgery, 372 patients (88%) in the EPCRP group and 108 pts. (65%) in the control group adhered to exercise. (p<0.001). **Conclusions** The EPCRP proved to be effective and improved exercise adherence a year after surgery.

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Retrieval, Repositioning, Unknotting, and Stripping of Intracardiac Catheters and Foreign Bodies

J. Tisnado[1], DJ Komorowski[1], MK Sydnor[1], DA Leung[1], J Tisnado[5]. *[1]MCV Hospitals / VCU Medical Center [5]School of Medicine / VCU Health System*

Purpose: Intracardiac embolization of catheter fragments, iatrogenic, other foreign bodies (stents, bullets, IVC filters), intracardiac knot formation in catheters, malpositioning intracardiac catheters, thrombi and fibrin deposition in intracardiac catheters are serious complications of percutaneous catheterization techniques, associated with high morbidity and mortality. **Material and Methods:** We performed percutaneous retrieval of intracardiac catheters and iatrogenic foreign bodies (n=70), unknotting catheter knots (n=4), repositioning malpositioned catheters (n=36), and stripping catheters (n=20), in 125 adults and children. Interventional radiologic equipment (alone or combination): Dotter retrieval baskets, Amplatz and Curry retrieval loops, and other types of loops, deflecting wires, retrieval forceps, and different angiographic catheters. **Results:** Retrieval of catheter fragments and iatrogenic foreign bodies was successful in 66 patients. There were four failures: an IVC filter, a catheter, and a Wallstent lodged in the right atrium, and a bullet lodged in the right ventricle. Unknotting of catheters knots, repositioning of misplaced catheters, and stripping of catheters was successful in all patients. There were no major complications. **Conclusions:** These interventional procedures are quick, safe, and effective to manage potentially serious complications of percutaneous catheterization. Dialysis and central catheters and ports are functional for longer periods. In many instances a major operation to manage these problems, which may include open-heart surgery, is avoided.

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Renal function and evolution of Acute Coronary Sindrome. National Hospital Arzobispo Loayza Lima-Peru

M. Carrion Chambilla[1–2], A. Hurtado Arestegui[1], C. Gutierrez Villafuerte[2], J. Pinto Concha[1]. *[1]Arzobispo Loayza Hospital [2]National University of San Marcos*

Background: The association between the renal function in patients (PTS) with acute coronary syndrome (ACS) has been described, nevertheless in our country it does not exist data on the magnitude of this association. Our objective is to determine the prevalence of renal disease in PTS with ACS, and if this association is related to adverse events in a follow-up of 30 days. **Methods:** Retroprospective study of 709 PTS with ACS admitted to the CCU, period 2000–2006 and that had measures of serum creatinine (94% of PTS). Creatinine clearance was calculated with Cockroft and Gault modified formula and renal disease (RD) was defined into categories: light 76.8–63.8, moderate: 63.8–51.4 and severe <51.4. Clinical and laboratory variables were registered on admittance; and follow up was made up to 30 days of acute event presentation (66% of PTS). The statistical analysis was made with SPSS 11.0 software. **Results:** Renal function (FR) was normal in 42.7% PTS and RD in 57.3% (406 PTS), light RD 21,6%, moderate RD 13,7% and severe RD 22%. The FR was correlated with age (56, 60, 73 and 75 years respectively, p < 0.05), antecedent of high blood pressure (42, 57, 69 and 71%, p< 0.0001), serum potassium (3.69, 3.79, 3.79 and 4.0 meq/l,p<0.0001), serum lactate (1.69, 1.95, 2.14 and 3,.3 mmol/L,p=0.035), higher use of nitrates (p=0.005), antiplatelets (p<0.0001) and ACE inhibitors (p<0.0001). Also with ejection fraction (EF) < 40% (15, 19, 35 and 41%, p<0.0001) and moderate to severe mitral regurgitation (6, 19, 17 and 33%, p<0.001). Non-fatal events (10, 19, 27 and 31%, p<0.0001), mortality (5, 7, 11 and 24%, p<0.0001), and in reverse fashion with systolic BP (126, 130, 129 and 115 mmHg, p=0.022) y and diastolic BP (78, 76, 78 and 67 mmHg, p<0.001).The event risk increased according to FR: Fatal (OR: 1.52, 2.94, and 8.22); nonfatal (OR: 2.30; 3.84; and 5.91). The same it happened to EF < 40% (OR:1.35, 3.14 and 4.02) and with mitral regurgitation (OR: 3.53, 3.13 and 7.50) **Conclusions:** The prevalence of RD associated to the acute coronary syndrome is elevated in our population. The magnitude of the myocardial damage as well as the evolution of the patients with this condition is related to the severity of the renal damage.

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Survivin Expression in Cardiac Myxoma

P-H Chu[1], S-M Jung[1]. *[1]Chang Gung Memorial Hospital*

Background: Cardiac myxoma, the most primary tumor of the heart, has variable clinical presentations and a variable immunohistochemical profile. Survivin, a anti-apoptosis protein, may play an important role in the causes of cardiac myxoma. This investigation will report the expression pattern of survivin in the cardiac myxomas **Methods:** This study included 40 patients with cardiac myxoma, who were treated with surgical excision of the lesion. Detailed clinical parameters also were reported. Apoptosis was studied by terminal deoxynucleotidyl transferase nick-end labeling (TUNEL) assay, and survivin mmunohistochemically. **Results:** The patient population was comprised of 24 (60%) women and 16 (40%) men. The mean age of patients participants was 42 years, with an age range of 30 to 63 years. All study patient cases were sporadic myxomas rather than familial myxoma. The presentations included: asymptomatic (22%), dyspnea (44%), stroke (11%), chest pain (11%), and fever (11%). All lesions were located in the left atrium. The myxoma did not differ with location or clinical event in terms of pathological scores, such as vascular proliferation, inflammation, cellularity, hyaline, calcification and thrombosis. Cardiac myxoma is characterized by survivin dependent pathway with 100% immunohistochemical stainings. **Discussion:** Cardiac myxomas demonstrate strong expression of survivin in the cytoplasma. This study clarifies that survivin may play an important role in apoptosis pathway in cardiac myxomas.

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EFFECT OF LEVOSIMENDAN ON DIASTOLIC FUNCTIONS IN PATIENTS WITH HEART FAILURE AND COEXISTING ATRIAL FIBRILLATION

O. C. Yontar[1], M. B. Yilmaz[1]. *[1]Cumhuriyet University, School of Medicine, Department of Cardiology, Sivas, TURKEY*

Background: Levosimendan (LM) is a recent inotropic agent which enhances cardiac contractility. Unlike other inotropic agents, LM does not increase cellular calcium intake, so that, does not cause intracellular calcium overload and related arrhythmias. AF was shown to be an independent risk factor for mortality and morbidity in large heart failure (HF) trials. HF induces AF, AF aggravates HF, and therefore they generally coexist. We conducted a study to investigate the effect of LM administration on diastolic functions in HF patients with AF and compared with patients without AF. **Methods:** Sixteen consecutive patients in AF and sixteen consecutive age-sex matched patients in sinus rhythm who were hospitalized because of acutely decompensated HF due to systolic dysfunction, and decided LM administration were enrolled as study (group A) and control groups (group S). All the patients had echocardiography before and after administration. **Results:** Baseline left ventricle ejection fraction (LVEF) was poorer in group with AF (mean LVEF for group A: 20.4%, for group S: 27.3%, p:0.03), but when we evaluated LVEF after LM infusion, amount of absolute increase in both groups' LVEF values were similar as 7.4 and 6.8 points for group A and S (p= 0.762). Baseline diastolic parameters were equally impaired, after infusion both groups' mean values of deceleration time (Dt), velocity of propagation (Vp) and isovolumic relaxation time (IVRT) got better without significance. Baseline and after infusion mean values of systolic pulmonary arterial pressure (SPAP), 24 hour urine output and average heart rate were not significantly different between groups. **Conclusion:** AF is a debilitating feature of HF. AF ruins both systolic and diastolic functions of left ventricle. We think that LM improves diastolic functions in patients with HF and AF just as patients with HF and sinus rhythm.

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Elevated triglycerides/HDL ratio predicts extensive coronary artery disease in Cyprus

C. Conkbayir[1], S. Kenan[2]. *[1]Nalbantoglu State Hospital Cyprus [2]Cyprus Life Hospital, Cyprus*

Aim: Surrogate markers of coronary artery disease (CAD) are valuable for prevention of cardiovascular events. Smal LDL are atherogenic where large LDL are not. There is a strong correlation between the triglycerides/HDL ratio and small LDL concentration. The aim of this study is to analyze the association among lipid variables and extension of coronary artery disease (CAD) in Cyprus. **Methods:** Four hundred and twelve patients who underwent diagnostic coronary angiography had total cholesterol, LDL, HDL, triglycerides and TG/HDL ratio calculated. CAD extension by the Friesinger index. Univariate analysis with chi-square for linear trend, and multivariate analysis by logistic regression were performed. The lipid variables were tested by quartile and Friesinger index dichotomized at score 5. **Results:** There were 210 males (50.1%), 58.8±110.5 years-old; 54 with no coronary lesion and the remaining had CAD ranging from irregularities to total occlusions. The average Friesinger index was 6.9±4.4. Mean cholesterol was 224.9±48.2; triglycerides 177.9±81.7 mg/dl, HDL 37.5±12.8 mg/dl; LDL 146.9±35 mg/dl, and TG/HDL 5.31±4.23. There were 75.8% hypertensives, 33.3% diabetics, 27.8% smokers, 62.6% hypercolesterolemics, 49.2% hypertriglyceridemics, and 63.6% with low HDL-cholesterol <40 mg/dl. At univariate analysis all lipids were associated with extensive CAD; however at multivariate analysis only the TG/HDL maintained a significant association to extensive CAD (OR 1.35; p<0.0001). **Conclusion:** The TG/HDL ratio was the only lipid variable independently associated with extensive CAD regardless other lipid, and may be an useful surrogate marker of CAD in Cyprus.

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Short-term exercise training improves HDL functional characteristics in patients with metabolic syndrome

A. Casella-Filho[1], V.M. Silva[1], C.B. Casella[1], I.C. Trombetta[1], F.Y. Cesena[1], B.C.G. Nascimento[1], C.E. Negrao[1], R.C. Maranhao[1], P.L. Daluz[1], A.C.P. Chagas[1]. [1]*Heart Institute (InCor) HCFMUSP,Sao Paulo,Brazil*

Background: Long-term exercise training increases plasma levels of high-density lipoprotein (HDL)-cholesterol, but the effects of short-term exercising are not well known. We hypothesized that short-term aerobic exercise training (SET) improves functional characteristics of HDL in patients with metabolic syndrome (MetS). **Methods:** Thirty-three sedentary persons (20 with MetS and 13 controls) were studied. Those with MetS were subjected to a 3 times/week moderate training load (45min/day) for 3 months on a bicycle ergometer after a cardiopulmonary exercise test to measure maximum oxygen consumption (VO2max) and anaerobic threshold. An artificial lipid emulsion (LDE) labeled with either 14C-phospholipid, 3H-triglycerides, 14C-cholesterol or 3H-cholesteryl ester was incubated with plasma from the controls and from the MetS group (before and after SET). After precipitation of VLDL, LDL and LDE, the HDL-containing supernatant was counted for radioactivity and lipid transfer was expressed as % of total radioactivity. Serum samples from MetS group, before and after SET, were assayed for HDL-cholesterol and paraoxonase-1 (PON1) activity and compared to controls. **Results:** Baseline plasma levels of HDL-cholesterol were lower in the MetS group compared to the control group and did not significantly change after SET. Interestingly, in MetS group, SET increased the 14C-cholesterol transfer from LDE to HDL, and the magnitude of this transfer after SET was similar to that verified in the control group. SET increased PON1 activity in MetS group. However, PON1 activity in the MetS group after SET was lower than in controls (see Table). **Conclusions:** SET enhances free cholesterol transfer to HDL and PON1 activity in patients with MetS without modifying plasma HDL-cholesterol levels, suggesting that HDL functional improvement conferred by exercise precedes quantitative changes in HDL levels.

TABLE

	MetS Before (B) SET	MetS After (A) SET	Control (C)	MetS B vs A	MetS A vs C
HDL (mg/dL)	36.10±5.21	37.33±8.01	53.11±12.12	p>0,05	p<0.05
Transfer (%) 14C.chol to HDL	7.71±1.60	8.60±0.82	8.92 ± 1.40	p<0.05	p>0.05
PON1 activity (ng/ml/min)	58.31±36.20	70.78±38.44	120.80±27.98	p<0.05	P<0.05

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Prevalence of Rheumatic Heart Disease According to World Health Organization Criteria for Sub-Clinical Valve Lesions

E. Marijon[1,2], DS Celermajer[3], B Ferreira[2], AO Mocumbi[2], D Sidi[1,2], X Jouven[1,4]. [1]*Descartes School of Medicine, Paris, France* [2]*Maputo Heart Institute, Maputo, Mozambique* [3]*Sydney University, Sydney, Australia* [4]*INSERM U780, Villejuif, France*

Context Although the role of echocardiography in acute rheumatic fever remains still controversial, its role in the diagnosis of subclinical rheumatic heart disease (RHD) has been recently emphasized. Concerning endemic areas for RHD, the World Health Organization (WHO) guidelines recommend that « silent, but significant, very mild mitral and/or aortic valvular regurgitation be labeled as probable RHD until proven otherwise, and patients have long-term follow-up studies and be placed on secondary rheumatic fever prophylaxis ». We now report the prevalence of such valve lesions, compared to clinical findings, in children in sub-Saharan Africa. **Methods** Randomized selection and screening of 2170 school children among 960,000 children aged 6 to 16 living in Maputo, the capital of Mozambique. Each was examined clinically and by echocardiography. Definition of subclinical RHD on echocardiography was based on the WHO criteria. **Results** Five children had both clinical and echocardiographic evidence of RHD giving a prevalence of 2.3 in 1000 (95% CI: 0.3–4.3). Subclinical lesions were found in 12 more children, giving an echocardiographic RHD prevalence rate of 8.0 in 1000 (95% CI: 5.0–13.0). **Conclusion** The number of children who suffer from RHD and may benefit from antibioprophylaxis appears to be approximately 3 times greater when detected by echocardiography compared with the usual clinical approach. These data highlight the need for echocardiographic screening to optimize detection of sub-clinical RHD lesions in children.

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ASSESSMENT OF QUALITY OF LIFE IN PATIENTS WITH DEPENDENT CAVOTRICUSPID ISTHMUS FLUTTER

J García-Seara , L Martinez-Sande, F Gude Sampedro, B Cid Alvarez, R Vidal Perez, F Soto Loureiro, J Gonzalez Juanatey. [1]*Clinical Universitary Hospital of Santiago de Compostela* [2]*Clinical Universitary Hospital of Santiago de Compostela* [3]*Clinical Universitary Hospital of Santiago de Compostela* [4]*Clinical Universitary Hospital of Santiago de Compostela* [5]*Clinical Universitary Hospital of Santiago de Compostela* [6]*Clinical Universitary Hospital of Santiago de Compostela* [7]*Clinical Universitary Hospital of Santiago de Compostela*

Purpose: To assess the impact in quality of life of patients who underwent to dependent cavotricuspid isthmus atrial flutter ablation. **Methods:** We analysed prospectively 104 cases (100 patients) diagnosed with atrial flutter and referred to our Electrophysiology Laboratory. The mean age was 64.5 ±10.6 years old, 84 pts. (80.8%) were men, 20 pts. (19.2%) did not have structural heart disease, 21 pts (20.2%) had clinical symptoms of heart failure and 16 pts. (15.4%) were post cardiac surgery atrial flutter. 95 cases (91.3%) were dependent cavotricuspid isthmus atrial flutter. We perfomed an ecocardiographic examination immediately after the ablation procedure and at 1 year follow-up. We assessed quality of life by using the Medical Outocomes Study Short Form Healthy Survey (SF36) questionnaire in the basal state previously to the procedure and at 1 year follow-up. We excluded from the analysis patients with non-dependent cavotricuspide isthmus atrial flutter and those with life expectancy less than 1 year. **Results:** We eventually included 88 pts. There were 8 deaths (7.6%) during the follow-up. We studied the change in quality of life parameters using the non parameter Wilcoxon test for 2 related samples. **Conclusion:** Dependent isthmus cavotricuspid flutter ablation involves a significant improvement in all quality of life parameters assessed in SF 36 questionnaire.The improvement is independent of the type of flutter (paroxysmal vs. persistant) and the presence of atrial fibrillation as a concomitant arrythmia

Item	Number of patient improve	Mean of improvement (Standard Deviation)	Range	p
Physical Functioning	74 (84%)	24.4 (21.0)	-15+90	0.000
Physical Role Function	58 (66%)	45.0 (45.6)	-100 +100	0.000
Bodily Pain	34 (39%)	9.8 (31.9)	-88 + 100	0.006
General Health	68 (77%)	15.3 (19.3)	-50 + 62	0.000
Vitality	67 (76%)	25.0 (24.0)	-20 + 95	0.000
Social Role Function	47 (53%)	16.5 (25.1)	-37.5 + 87.5	0.000
Emotional Role Function	39 (44%)	31.4 (40.5)	-33.4 + 100	0.000
Mental Health	72 (82%)	17.8 (23.0)	-48 + 80	0.000
Health Transition	81 (92%)	2.0 (1.1)	-1 + 4	0.000

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The effects of general demographic data on the initation and timing of thrombolytic therapy among of STEMI patients

O. C. Yontar[1], A Erdem[1], K Yalta[1], M. B. Yilmaz[1], I Tandogan[1]. [1]*Cumhuriyet University, School of Medicine, Department of Cardiology, Sivas TURKEY*

Background: Socioeconomic welfare level (SWL) is one of the most important indicators of public health. Cardiac risk factors vary due to different socioeconomic welfare levels. Increased cardiac mortality and morbidity and increased number of cardiac risk factors are shown to be much more frequent in communities which have low SWL. Atherosclerotic heart disease is the most common reason of mortality among men and women in whole world. Many, large clinical trials stated that in patients presenting with ST segment elevated myocardial infarction (STEMI), it is exceedingly important to admit hospital in the shortest time possible to have reperfusion therapy and control mortal arrhytmias. In this study, we examined the relationship between the time passed before admittance to a hospital and patients' SWL. **Methods:** A hundred patients (53 male and 47 female) who admitted to emergency department with STEMI between May 2005 and May 2007 were enrolled to our study. All patients had thrombolytic therapy. According to ACC/AHA STEMI guideline, patient who admitted in the first 3 hours after onset of the symptoms were grouped as early (Group 1, n:52); others, who admitted later than 3 hours were grouped as late (Group 2, n:48). All patients' SWL were examined depending on two parameters: monthly income and educational degree and all patients' admittance delay time were also questioned. **Results:** Patients in Group 1 had educational degrees as following: 38.4% were elementary school graduates, 38.5% were high school graduates and 23.1% were university graduates. Group has higher percent of elementary graduates (52.1%), similar amount of high school graduates (35.4%) and lower percent of high school graduates (12.5%). When evaluated in terms of monthly income, Group 1 has less number of patients who have low-income (23.1% vs 39.6), more patients who have medium/high-income (76.9% vs. 60.4%). The difference between groups in terms of both educational degree and monthly income showed no significance ($p>0.05$). **Conclusion:** We think that SWL is related to the period between onset of the symptoms and admitting to hospital, which is a crucial factor for STEMI patients. In our study this relationship showed no statistical significance, however, there would be significant conclusions in similar studies with large number of patients. Therefore, we think that intensive educational, emotional and social support must be given to low socioeconomic welfare level groups.

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Is There a Predictive Pattern of P-Wave Signal Averaged Electrocardiogram for Arrhythmia Recurrence after Cardioversion of Persistent Atrial Fibrillation

C. Militaru[1], A. Giuca[1], O. Istratoaie[1], D.-D. Ionescu[1]. [1]*CRAIOVA CARDIOLOGY CENTER*

Background: An altered P-wave signal averaged electrocardiogram (PW-SAECG) was shown to predict the risk of atrial fibrillation (AF) in patients (pts) with various cardiovascular diseases but its value as a recurrence predictive tool after sinus rhyhtm (SR) restoration in pts with persistent AF is not firmly established. **Methods:** A number of 109 consecutive pts, aged 60.1 ± 9.6 years (mean ± SD) underwent standard 12 lead ECG and PW-SAECG recordings within the first hour after successful cardioversion of persistent AF. All pts had PR intervals > 0.12 sec and a low noise endpoint is achieved (under 1 μV). Based on signal morphology between the end of P wave vector and the onset of QRS complex pts were divided in group A – with overlapping PW-SAECG (21 pts) and group B – with clear-cut isoelectric line after PW-SAECG (88 pts). The PW-SAECG parameters measured in group B were filtered P wave duration in msec (Pdur), root mean square (RMS) voltage of P wave (RMS P), RMS in terminal 40 (RMS 40), 30 (RMS 30) and 20 (RMS 20) in μV, and integral of the P wave (Pint) in μV/sec. None of these parameters were taken into account in group A pts because of the overlapping pattern. All pts were followed-up monthly for six months with the endpoint of AF recurrence. Statistical analyses included a comparison between groups for AF recurrence percentages and Student's t-test for PW-SAECG parameters of pts with and without AF recurrence in group B; for both tests a $p < 0.05$ value was considered significant. **Results:** During follow-up, AF recurrence was observed in 18 pts of group A and in 36 pts of group B (85.7% vs 40.9%, $p = 0.0004$). In group B, pts with AF relapse had longer Pdur (168.15 ± 27.0 msec vs. 150.4 ± 17.1 msec, $p = 0.031$) and smaller RMS 20 (3.2 ± 2.1 μV vs. 5.8 ± 3.5 μV, $p = 0.008$). The other PW-SAECG parameters of AF relapse pts were not statistically different from those of pts in SR at 6 months. We suggest a relevant pattern for AF recurrence, defined by longer Pdur and smaller RMS 20. **Conclusions:** Atrial fibrillation recurrence rate at six months after cardioversion is significantly higher in

patients with an overlapping pattern of PW-SAECG as well as in patients with longer filtered P wave duration and smaller RMS 20. Since all patients had a normal PR interval the overlapping pattern of PW-SAECG may be the equivalent of an abnormally long filtered P wave duration.

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Cardioprotective Effects of Zofenopril, Enalapril and Valsartan on Doxorubicin Cardiotoxicity

E. Bozçali[1], D.B. Dedeoglu[2], O. Süzer[2], H. Karpuz[1]. [1]*Istanbul University Cerrahpasa Faculty of Medicine, Department of Cardiology* [2]*Istanbul University Cerrahpasa Faculty of Medicine, Department of Pharmacology and Clinical Pharmacology*

Background Doxorubicin (DOXO), frequently induce irreversible cardiotoxicity which limits its clinical usage. We aimed to compare cardioprotective effects of zofenopril, enalapril and valsartan against DOXO cardiotoxicity. **Methods** The rats were divided into 8 groups of 8 each. Group 1, 2, 3 and 4, respectively, received 0.5 ml distilled water (dw), 15mg/kg/day zofenopril which dissolved in dw, 2mg/kg/day enalapril which dissolved in dw and 30mg/kg/day valsartan, which dissolved in dw by intragastric gavage for 7 days. Groups 5, 6, 7, and 8 underwent same procedures, respectively as groups 1, 2, 3, and 4. On the 7th day, groups 1-4 and groups 5- 8, respectively, were injected intraperitoneally with serum saline and 20mg/kg DOXO. On the 9th day isolated rat hearts were perfused in Langendorff perfusion system with a stabilization period for 30 minutes, global ischemia for 15 minutes and 45 minutes for reperfusion. Coronary effluent was collected at baseline, after ischemia and reperfusion for troponin I, lactate dehydrogenase, aspartate aminotansferase, atrial natriuretic peptide and brain natriuretic peptide measurements. **Results** Left ventricular (LV) systolic pressures were negatively affected by DOXO with ischemia. (Group 5 initial: 61,4±13,6 mmHg- postischemic (PI): 20,7±17,5 mmHg p=0.0002, group 6 initial: 63± 18,2 mmHg- PI: 24,2 ± 24,3 mmHg p=0.0135, group 7: 82± 26 mmHg- PI: 14,3± 12,1 mmHg p< 0.0001, group 8: 73,1± 27,8 mmHg- PI: 20,4± 27,3 mmHg p< 0.0001). The lowest mean troponin I levels were found in groups of zofenopril (group 1: 1,1± 0,7 ng/ml, group 5: 0,6± 0,4 ng/ml, group 2: 0,3± 0,2 ng/ml, group 6: 0,2± 0,1 ng/ml, group 3: 0,7± 0,7 ng/ml, group 7: 0,4± 0,4 ng/ml, group 4: 0,5± 0,3 ng/ml, group 8: 0,4± 0,3 ng/ml, p=0.003). Mean perfusion pressure significantly decreased after ischemia in groups of enalapril, zofenopril, and valsartan. **Conclusion** According to troponin I levels, zofenopril showed more significant protective effect against DOXO cardiotoxicity than enalapril and valsartan. Enalapril was ineffective in the protection of LV systolic function. Enalapril, zofenopril, and valsartan preserved coronary artery vasodilatation despite DOXO.

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PLASMA HOMOCYSTEINE LEVEL IN CARDIAC SYNDROME X AND ITS RELATION WITH DUKE TREADMILL SCORE

T. Timurkaynak[1], S. Balcioglu[1], U. Arslan[1], S. A. Kocaman[1], A. Çengel[1]. [1]*Gazi University School of Medicine, Department of Cardiology, Ankara, TURKEY*

Aim: The aim of this study was to investigate the plasma homocysteine level and the relationship between plasma homocysteine level and duke treadmill score (DTS) in Cardiac Syndrome X (CSX) patients. **Method:** 79 patients (36 male, 43 female, mean age: 50.0 ± 8.8yrs) with typical effort angina, positive stress test and angiographically normal coronary arteries were included in this study. 30 asymptomatic patients (11 male, 19 female, mean age: 47.6 ± 8.3yrs) with less than 2 cardiovascular risk factor were chosen as a control group. Plasma homocysteine level was measured in both groups and DTS was calculated in the Cardiac Syndrome X group. Plasma homocysteine was measured with the AxSYM homocysteine immunoassay method in both groups. **Results:** Plasma homocysteine level was higher in the CSX group compared to the control group (16.5 ± 4.9 μmol/L vs 12.4 ± 4.1 μmol/L, p<0.001). Duke treadmill score was -2.7 ± 5.3 in the CSX group. There was a negative correlation between the DTS and homocysteine levels in the CSX group. (r = -0.506, P < 0.001). **Conclusion:** Plasma homocysteine level which is known to cause endothelial dysfunction and microvascular ischemia were higher in CSX patients. This increase in homocysteine level and its inverse correlation with the DTS may represent possible relationship between homocysteine and the magnitude of microvascular ischemia. **Key words:** Cardiac syndrome X, Homocysteine, Duke treadmill score

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Inflammation and Fibrinolytic Dysfunction in Impaired Glucose Tolerance.

H. L. Luciardi[1], S. Chain[2], S. G. Berman[1], G. Feldman[2], J Muntaner[1], R. N, Herrera[1]. [1]*Facultad de Medicina, Universidad Nacional de Tucumán.* [2]*Centro Mendez Collado. Universidad Nacional de Tucumán.* [3].

Background: Among people with the metabolic syndrome, atherosclerosis is increased and also fibrinolytic dysfunction is present, which increases the propensity to develop cardiovascular disease. Although some studies have documented that markers of fibrinolysis as plasminogen activator inhibitor-1 (PAI-1) are abnormal in people with type 2 diabetic and metabolic syndrome, it remains unclear whether this abnormality is present in impaired glucose tolerance. There is also growing evidence that inflammation links impaired glucose tolerance and cardiovascular disease. Furthermore, markers of inflammation, fibrinogen and highly sensitive C-reactive protein (hs-CRP), have recently been shown to predict the development of type II diabetes mellitus in middle-aged adults. **Objetives:** The specific objectives of this investigation were to determine whether if fibrinolytic markers: (PAI-1) and inflammation markers (fibrinogen and highly sensitive C-reactive protein) are presents among impaired glucose tolerance subjects. **Methods:** Of the 69 screened subjects (aged >30 years) during 2004–2005, 21 patients with new-onset of diabetes mellitus were excluded. Of the remaining 48 participants, 23 controls and 25 impaired glucose tolerance subjects were studied with fasting blood samples for glucose, lipids, an oral glucose tolerance test, hemostatic and inflammation markers. Diabetes mellitus was defined as a fasting glucose level of >126 mg/dl or a glucose level of >200 mg/dl 2 hours after a oral glucose load. Impaired glucose tolerance was defined as a fasting glucose level greater than 100 mg/dl and a 2-hour post-glucose challenge level between 140 mg/dl and 199 mg/dl. The hemostatic marker assessed for fibrinolysis was plasminogen activator inhibitor-1 (PAI-1) and for inflammation measurement the fibrinogen and highly sensitive C-reactive protein (hs-CRP) were studied. **StatisticalAnalysis** All analyses were computed by using SPSS (version 11). Comparisons of continuous variables were performed by using T test and correlation analysis. Additionally, receiver operating characteristic (ROC) curves were computed to compare the fibrinolytic and inflammation markers in controls and impaired glucose tolerance subjects. **Results**

Markers	Units	Normal values	Control (n=23)	Impaired Glucose Tolerance (n=25)	p
PAI-1	ng/mL	35 ± 16	35.54 ± 31.01	66.48 ± 30.73	p<0.006
Fibrinogen	mg/dL	200–400	266.70 ± 25.47	317.78 ± 32.15	p<0.0001
hs-CRP	mg/dL	<0.28	0.38 ± 0.47	0.45 ± 0.62	p<0.28

Conclusion: The significant increase in fibrinolysis markers (plasminogen activator inhibitor-1 (PAI-1) suggests the presence of a fibrinolytic dysfunction state in subjects with impaired glucose tolerance, and although there was no significant differences in highly sensitive C-reactive protein (hs-CRP) between patients with impaired glucose tolerance and controls, fibrinogen that was significantly increased clustered with hs-CRP reflects underlying inflammation condition.

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ATP-binding cassette transporter G1 Promoter Variant Influences to A Severity of Coronary Artery Disease

Y. Uehara[1,2], S Furuyama[2], S Abe[2], SI Miura[2], B Zhang[2], K Saku[2]. [1]*Department of Pharmacology, Fukuoka University Faculty of Medicine, Fukuoka, Japan* [2]*Department of Cardiology, Fukuoka University Faculty of Medicine, Fukuoka, Japan*

Background: ATP-binding cassette transporters G1 (ABCG1) is membrane cholesterol transporter and has been implicated to mediate cholesterol efflux from cells in the presence of high-density lipoprotein (HDL). We have reported that an activity of ABCG1 gene transcription was significantly low in -257T>G missense mutation in vitro reporter assay. HDL-mediated cholesterol efflux was significantly increased by an overexpression of ABCG1 gene in HEK293 cell. **Methods:** Japanese 109 men with coronary artery disease (CAD) diagnosed by coronary angiography (CAG), were analyzed -257T>G polymorphism assessed by mutation selective-PCR methods. We classified into T/T, T/G and G/G genotypes in -257T>G on ABCG1 gene and compared the polymorphism with severity of CAD, lipid profiles and other coronary risk factors. **Results:** By a logistic regression analysis, there were significant additive and dominant effects on the frequency of patients with multi-vessels disease as compared to single vessel disease (T/T vs. T/G vs. G/G, odds ratio: 2.1, p=0.027; T/T vs. T/G and. G/G, odds ratio: 3.5, p=0.005). Furthermore, coronary stenotic score was also significantly (p<0.05) higher in G/G genotype (65.2±8.4) than that in T/T genotype (45.2±5.1). On the other hands, there were no significant differences in serum total, LDL and HDL cholesterol levels and other risk factors. **Conclusion:** ABCG1 -257T>G promoter polymorphism influences to a severity of CAD. The activation of ABCG1 transporter may contribute to suppress the progression of CAD.

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Layperson trainees improve their knowledge of resuscitation in BLS/AED courses and their confidence in providing bystander CPR.

P. Cokkinos[1], N. Nikolaou[1], T. Papafanis[1], P. Strebelas[1], C. Hasikidis[1], A. Tasouli[1], D. Kontogianni[1], G. Gavrielatos[1], T. Kapadohos[1], D. Chrysos[1]. [1]*Working Group in Resuscitation, Hellenic Cardiological Society, Athens, Greece.*

Purpose: To assess the knowledge of layperson trainees and their views on resuscitation before and after courses in Basic Life Support (BLS) and the use of Automated External Defibrillators (AED). **Methods:** We trained 114 layperson candidates (66 women, mean age 40 ± 14 years old) in BLS/AED courses which were accredited by the European Resuscitation Council (ERC). All candidates were relatives of coronary artery disease patients who had suffered a myocardial infarction. The courses were offered to the trainees free of charge. A 15-point questionnaire was completed by each candidate before the course and a similar questionnaire at the end. Statistical analysis of trainee responses used the McNemar and Wilcoxon tests. **Results:** All trainees successfully passed the course. Of the 114 candidates, 60 (53%) were the patient's offspring and 37 (32%) the spouse. Seventy (61%) had a University education, 48 (42%) a good knowledge of English, 69 (61%) had heard about resuscitation before and 8 (7%) had attempted to resuscitate a cardiac arrest victim, but only 8 (7%) had any previous practical training. Before the course, only 8% of trainees considered their knowledge to be adequate, compared to 98% afterwards (p<0.0001). Before the course, only 32% correctly estimated that general survival to discharge from out-of-hospital cardiac arrest was 5–10%, compared to 50% after (p=0.04). Only 40% of the candidates knew the correct emergency dialling number (112) in the European Union before the course but 84% did after (p<0.0001). Before the course, 24% of trainees were willing to resuscitate a relative and 14% would be willing to resuscitate a stranger, compared to 92% and 70%, respectively, afterwards (p<0.0001 for both). Before the course, 34% of candidates knew that Athens International Airport was equipped with AEDs but only 6% would be willing to operate them, compared to 99% and 95%, respectively, after (p<0.0001 for both). Finally, all 114 candidates believed that laypersons should be trained in resuscitation, 93% agreed that Greek legislation should be changed to allow non-doctors to defibrillate, and 91 (79%) would be willing to buy an AED for

their home. **Conclusions:** Layperson candidates who are relatives of patients at risk for cardiac arrest can, and should be, successfully trained in BLS/AED courses, as they improve their knowledge of resuscitation, their willingness to resuscitate a relative or a stranger, and their confidence in using an AED.

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Distribution, Awareness, Control and Benefits of Reduction of Blood Pressure in Yerevan, Armenia

P. Zelveian[1–2], G. Podosyan[2], S. Barsamyan[2], A. Potosyan[2]. *[1]Institute of Cardiology, Yerevan, Armenia [2]Armenian medical association, Yerevan, Armenia*

Background: Arterial hypertension (HT) is one of the major and most modifiable causes of cardiovascular (CV) morbidity and mortality all over the world. In Armenia, there is still no relevant data on HT prevalence, awareness, treatment, and control. **Objective:** To assess the distribution of blood pressure (BP) levels, degree of awareness, treatment, and control of HT; values of isolated systolic hypertension (ISH) and pulse pressure (PP); the potential change in HT prevalence after a simulated reduction in mean BP and HT frequency by lifestyle-related risk factors in Yerevan. **Design and Methods:** Data were drawn from "Blood Pressure Screening and Survey in Yerevan Adult Population" cross-sectional study conducted in Yerevan during April-May 2004. The sample was made of randomly chosen 748 people aged 18–90 (41±18 years), 498 women and 250 men. At home visit participants filled out standard questionnaires and had their BP and anthropometric parameters measured. Blood pressure was obtained by trained interviewers in accordance with ESH recommendations. Three readings were taken in each arm with 2 min intervals. All those with SBP?140 or DBP?90 mmHg (average of 3 measurements in the arm with higher BP), or those taking antihypertensive drugs were considered hypertensive. Awareness was assessed on basis of the question "Do you consider BP>140/>90 mmHg as a pathological condition which requires treatment?" Treatment was defined as use of antihypertensive drugs. Control was defined as SBP<140 mmHg and DBP<90 mmHg at the time of visit. Results: A total of 27.4% of subjects were hypertensive; 5.1% had ISH; PP was 44.2 mmHg. Distribution of BP levels is presented in the table. Among hypertensives, only 60.5% were aware; of these, 41.9% were being treated (25.4% of hypertensives), and of those treated, only 34.6% were controlled (8.8% of hypertensives). The prevalence in 35–64y group was 35.8% with 6.3% control. Awareness and treatment was more frequent in women, <50y men being the least aware. Control was more frequent in men, >50 women being the least controlled. Overweight/obesity, alcohol abuse and ex-smoker status were positively associated with HT prevalence. **Conclusion:** Among 817 200 adults in Yerevan, 223 913 are hypertensive; 135 467 are aware of their condition; 56 874 receive antihypertensive drugs; 19 704 are controlled. Isolated systolic HT affects 1 of every 20 adults. Average PP in Yerevan is well below 50–55 mmHg reading regarded as CV risk factor. Yerevan is far from the "rule of halves": of every 10 aware, only 4 is being treated; of every 10 treated, only 3 are controlled. Of 10 hypertensives, only 1 is controlled. A reduction of 2–4/1–2 mmHg in mean BP could result in 4.1–5.5% decline in HT prevalence, 5.8–7.6% decline in "prehypertension" prevalence and 9.9–13.1% increase in optimal BP proportion.

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Prognostic value of surface Electrocardiogram (ECG) one-minute heart rate variability (HRV)

J. Visperas[1], O. Bugarin[1], M. Somera[1], M. Ramirez[1], E. Caguioa[1], M. Yamamoto[1]. *[1]University of Santo Tomas Hospital*

Background: Heart rate variability (HRV) is reflective of the activity of the autonomic flow of the heart proven to be an independent predictor of poor prognosis in patients surviving acute myocardial infarction. **Objectives:** To determine the prognostic value of 1-minute HRV measured by surface 12-lead ECG on admission among patients admitted to the ICU for ACS. **Methods:** The study included 80 consecutive adult patients who presented with chest pain at the University of Santo Tomas Hospital (USTH) with main diagnosis of ACS seen at the emergency room and admitted at intensive care unit (ICU), coronary care unit (CCU), cardiovascular unit (CVU) from study period November 16, 2005 up to June 30, 2006. 12-Lead electrocardiogram (ECG) was done on admission with measurement of heart rate variability (HRV) and accomplishment of database. The mean R-R interval, mean Q-T interval as well as standard deviation and means of R-R and Q-T were also determined. The HRV, mean RR, QT and standard deviation were compared against patient outcomes in terms of mortality, survival; myocardial damage and ischemic burden in terms of troponin I, CKMB, LVEF; mobidity in terms of development of arrhythmia, heart failure, length of ICU and total hospital days; requirement for intervention and cardiac arrest. QT dispersion was likewise compared against all considered parameters for HRV. **Results:** Among those who died, there is an 8.4 times risk for mortality and 2.1 risk for development of arrhythmia noted with a HRV below 281 (p-value 0.02 and 0.044 respectively). QT standard deviation among ACS patients was significantly higher than in the control group (p-value of <0.001). A QT standard deviation of >.026 was statistically associated with the risk of congestive heart failure [RR= 3.27, 95% CI 1.46 -7.32, p=.001]; arrhythmia [RR=9.65 95% CI 1.24 – 75, p=.002] and an ICU stay of > 3.7 days [RR=1.96, 95% CI 1.11 – 3.46) p=.007]. In a multivariate analysis analysis of HRV and QT interval standard deviation, there is a 2.1 times risk for mortality in those with NSTEMI (p-value 0.003) and 3.2 times risk for mortality in those with unstable angina (p-value of 0.013). HRV was statistically higher among those who died when compared to those who survived (average HRV=513 versus 270, p=.029). **Conclusions:** In this study, there is a significant 8.4 times risk of developing mortality in acute coronary syndrome patients with mean heart rate variability of less than 281. Development of arrhythmia was significantly associated with heart rate variability of less than 281. A QT standard deviation of >.026 was statistically associated with the risk of congestive heart failure, arrhythmia and an ICU stay of > 3.7 days. Among the six mortality, the mean time to death was 9.1 days (95% CI.04, 18.6) with a median time of 1 day.

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Is the cold pressor test useful in the pre-clinical stage of coronary heart disease to predict events?

E. Pautasso[1], M Koretzky[2], J Aiub[3], C Borrego[3], R Foye[3], M Boscaro[4], M Battiston[5], F De Cecco[3], J Panini[6], A Marcon Del Point[3]. *[1]Centro de Cardiologia Nuclear [2]Trinidad San Isidro [3]Sanatorio San Lucas [4]Hospital Tigre [5]Hospital Privado Modelo [6]Hospital San Isidro*

In the last three decades, we have gained a lot of knowledge in the field of physiopathology and therapeutics in coronary artery disease, althougt cardiovascular disease is still the main cause of death in the western world. We still lack the right study to evaluate patients in the pre-clinical stage. Endothelial dysfunction is the first known step of coronary atherosclerosis and it can be evaluated by multiple methods, one of them being myocardial perfusion with single photon emission computerized tomography (SPECT) technique and the cold pressor test (CPT). **Objective:** to determine the prevalence of positive CPT, in consecutive patients(p), without demonstrated coronary artery disease and to analyze the incidence of cardiovascular events in a 5 year follow-up. **Methods:** we included 474 (p), with a normal exercise perfusion with SPECT, carried out in a Nuclear Cardiology Institution, followed by a CPT, with a time window of 3–5 days. A positive CPT was defined as a new perfusion defect compared with the baseline SPECT, and a negative result as no perfusion defects. 82% of the p were followed for a mean time of 30+/ - 10 months. The events analyzed were: mortality, myocardial infarction and revacularization. Mean age was 58 +/- 10 years, with a male prevalance of 53,4%, with the following risk factors: diabetes, 10%; family history of coronary artery disease 52%; dyslipidemia 68%; hypertension 65%, obesity 47% and current smokers 22%. We excluded 5% due to CPT intolerance, and 4% due to vasovagal reaction. **Results:** 31% of the p had a positive CPT. In the 5 year follow-up, survival free of cardiac events was 99% in p with a negative CPT and 88% in the positive test p (p<0,008). **Conclusions:** 1) in our population, the prevalence of positive CPT, in p without demonstrated ischemic coronary disease was 31% 2) the positive CPT could indentify p at risk for future events, in the pre-clinical stage

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EXERCISE ECHOCARDIOGRAPHY WITH CONTRAST FOR THE EVALUATION OF PULMONARY ARTERY SYSTOLIC PRESSURE. NEW METHOD.

L. Rocha Lopes[1], S. Almeida[1], R. Miranda[1], M.J. Loureiro[1], O Simoes[1], P. Cordeiro[1], C. Cotrim[1], M. Carrageta[1]. *[1]Hospital Garcia de Orta, Almada, Portugal*

Introduction: The utilization of contrast has been implemented for improvement of the Doppler signal in multiple clinical contexts. **Purpose:** To evaluate the value of contrast echocardiography, with agitated saline with blood, in the improvement of the Doppler signal used to quantify the pulmonary artery systolic pressure during exercise. **Methods:** From a total of 34 patients(pts), we studied 32 pts (31 women), aged 55 ± 9 years-old, 27 with the diagnosis of Scleroderma and 5 with history of pulmonary embolism, who were referred to the Unity of Heart Failure and Pulmonary Hypertension for screening of pulmonary hypertension. According to the Unity protocol, a transthoracic echocardiogram was made, in left decubitus (LD), with evaluation of right ventricle-right atria gradient (gRV/RA). A peripheral venous access was obtained, with a 3-way stopcock and the patients were placed in orthostatism (O), with a new evaluation of gRV/RA. Exercise echocardiography (EE) was begun, with evaluation of gRV/RA at peak exercise (P) and afterwards agitated saline (8cc with 1cc of air and 1cc of blood) was injected, followed by a new evaluation of gRV/RA (PC) and then the interruption of the EE. Pulmonary Hypertension was diagnosed when gRV/RA at the end of the exercise was superior to 40 mmHg. **Results:** The quality of Doppler signal was deteriorated in 4 pts, maintained in 6 and improved in 22, with the use of contrast. In 5 pts a Doppler signal was only obtained with the use of contrast. In 11 pts, a gRV/RA superior to 40 mmHg was only obtained with the use of contrast. Of these, 6 have already been submitted to right heart catheterism, that confirmed the diagnosis of pulmonary hypertension in 4 of them. gRV/RA (P) was 44±11 mmHg and gRV/RA (PC) was 55±11 mmHg, p<0,001. **Conclusions:** 1. The method is applicable in a large number of patients. 2. RV/RA gradients obtained at peak exercise are higher with the use of contrast, and the clinical meaning of this difference should be evaluated in a larger number of pts submitted to right heart catheterism. 3. This method seems to have relevant clinical value in the diagnosis of pulmonary arterial hypertension.

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Infectious endocarditis associated with permanent implantable electronic devices (PIED): a prospective study. 18 months follow-up.

G. Pérez Baztarrica[1], **F. Salvaggio[1]**, L. Gariglio[1], M. Cerón[1], F. Gonzalez[1], D. Calcines Huerta[1], H. Massetti[1], N. Blanco[1], A. Botbol[1], R. Porcile[1]. *[1]Universidad Abierta Interamericana*

Introduction: Definitive pacemaker or implanted cardiac defibrillator (ICD) is a frequent practice in the coronary care unit. Infectious endocarditis (IE) represents a low frequency complication with a high mortality rate without adequate treatment. There are several aspects on this issue that still remain unclear. **Objectives:** To analyze predisposing factors, clinical features and most relevant complementary studies in IE associated with PIED. To evaluate in-hospital and 18-months morbidity and mortality once the therapeutic scheme has been completed. **Methods:** Patients at the Universidad Abierta Interamericana (UAI) Hospital were studied prospectively between May 2001 and March 2006 once a diagnosis of IE associated to PIED had been established. Duke criteria were used for diagnosing IE. IE was classified as early or late according to time of onset (before or after 12 months from implantation). Basal characteristics, type of device, clinical presentation, microorganisms, transthoracic echocardiogram (TTE), transoesophagic echocardiograms (TEE), therapeutical approach, in-hospital and 18-month outcomes were analysed. **Results:** 18 cases were diagnosed as IE. Mean age was 65 years (37–84). 67% were man; 88% pacemakers and 12% ICD. With regard to

patients' history: 55% had previous generator replacement, 40% diabetes mellitus, 16% neoplasm and 22 % immune suppressors. 72% corresponded to early and 28% to late IE. Clinical manifestations were: pocket affection 78% (secretion, swelling, ulceration, pain); fever 68%; chills 55%; dyspnea 16%, arterial hypotension 5%. Two patients were followed because of prolonged fever. 65% presented leucocytosis and 84% increased GSV (globular velocity sedimentation). Blood cultures were positive in 17 patients (94%). Staphylococcus aureus was present in 66% of cases, negative coagulase Staphylococcus in 18%, B-haemolytic Streptococcus in 1, Escherichia coli in 1, Candida tropicalis in 1 and polimicrobial infection in 1. TTE was positive in 55% and TEE in 90%. The localization of vegetation was: 62% right atrial catheter, 38% right ventricular catheter, 6% atrial wall and 6% tricuspid valve. All patients received antibiotic treatment for 6 weeks according to microorganism isolation. In all cases, the PIED was completely removed, in 17 patients (94%) through material extraction performed percutaneously, using specific instruments and 1 patient required median sternotomy, atrial surgery and placement of epicardic pacemaker. 94% the PIED was reimplanted after completing the antibiotic scheme. In-hospital and follow-up mortality was zero. At 18 months after reimplantation of the PIED no patients presented re-infection of the system. **Conclusions:** IE associated with PIED is an uncommon complication that must be always suspected in patients with predisposing factors (immune suppression, cancer, diabetes mellitus, previous replacement of generator, swelling at the incision site or decubitus), feverish syndrome, bacteraemia, leucocytosis, an increased GSV; in absence of another infectious focus that justifies the symptoms. Two fundamental elements for diagnosis are blood cultures and TEE. The lower mortality observed in the present study in comparison to others could be attributed to prolonged antibiotic therapy and early and complete removal of the PIED, performed percutaneously in the majority of cases, followed by reimplantation of the device after antibiotic therapy was completed.

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Pulmonary embolism in infectious endocarditis associated with permanent implantable electronic devices PIED: incidence and outcomes after percutaneous extraction of catheters.

G. Pérez Baztarrica[1], **F. Salvaggio[1]**, L. Gariglio[1], M. Nordaby[1], T. Soria[1], H. Cruz[1], F. Sanchez[1], N. Blanco[1], A. Botbol[1], R. Porcile[1]. *[1]Universidad Abierta Interamericana*

Introduction: Infectious endocarditis associated with PIED is a low frequency complication, which carries a high mortality rate without proper treatment. At present therapy consists of prolonged antibiotic schemes along with complete removal of PIED. In patients with a vegetation size >=10 mm extraction performed percutaneously would be a relative contraindication, according to some authors, due to the risk of pulmonary embolism; however, other authors have not reported increased morbimortality. Symptoms are determined by pulmonary involvement caused by embolism. **Objectives:** to recognise the incidence of pulmonary embolism (discriminating symptomatic cases) in context of infectious endocarditis associated with PIED, in patients undergoing percutaneous extraction of catheters. To evaluate clinical outcome during hospital confinement and at 18 month's follow up in order to determine future therapeutical management. **Methods:** patients admitted to our hospital between March 2001 and March 2006 were studied prospectively once a diagnosis of infectious endocarditis associated with PIED had been established. For diagnosis confirmation we used the Duke's University criteria. Pulmonary embolism was defined as the presence of a vegetation on transoesophagus echocardiogram (TEE) prior to surgery and the lack of vegetation on the removed catheter lead and on TEE after surgery. Symptoms of embolism, included dyspnea, tachypnea, tachycardia, cough or pleuritic pain, in the context of percutaneous extraction. In patients with these symptoms, the embolic mechanism was confirmed by V/Q scan. Statistical analysis of data was performed using SPSS statistical pack version 11.0.1 (2001). **Results:** Confirmed infectious endocarditis associated with PIED occurred in 18 patients. Mean age was 65 years. The types of devices were: 88% pacemakers and 12% ICD. TEE detected 16 vegetations. Size ranged 10–20 mm in 80% and resulted >20 mm in 20%. Out of the total of patients, 13 remained asymptomatic and 18% (3 patients) presented clinical manifestations of pulmonary embolism, confirmed by ventilation/perfusion (V/Q) scan. These patients had multiple and larger size vegetations (22–25 mm). On analizing the clinical outcome, there were no complications that varied morbimortality either during hospital stay or at 18 months follow up. Hospital in-patient stay was not longer in this group compared to those who remained asymptomatic (46 +/- 2 versus 43 +/- 1 days). **Conclusions:** although the rate of pulmonary embolism associated with catheter extraction performed percutaneously is high, most patients remain asymptomatic. Symptomatic cases are less frequent and in our series there were no changes in clinical evolution at short and long term follow up in comparison to asymptomatic patients. In spite of the limited number of cases in these works, this percutaneous technique is of great value, reserving thoracotomy for special cases where the patient's previous cardiopulmonary status, a concomitant indication for cardiac surgery, the characteristics of the vegetation and feasibility of complete removal of the device should be assessed.

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PREDICTORS OF HIGH HOSPITAL COSTS FOR ELDERLY PATIENTS WITH HEART FAILURE

M. Giorgi[1–3], M Voos[1], R Borracci[1–2], R Ahuad[1–3], H Farras[1], S Balmaceda[1], M Fanuele[1], J Insua[2]. *[1]CORPORACION MEDICA GENERAL SAN MARTIN [2]UNIVERSIDAD AUSTRAL [3]UNIVERSIDAD DE BUENOS AIRES*

Background: heart failure (HF) is one of the most costly diseases, especially in aged patients. Information regarding heart failure's costs is scarce in Latin America. Knowing clinical issues that characterizes groups of patients who have high costs during hospitalization should allow payers to project health expenditure. **Objective:** to identify independent predictors of high hospital costs in aged patients with HF. **Methods:** data from 156 aged patients admitted to Coronary Care Unit for HF were analized. We registered demography, prior diseases and medications, clinical characteristics at admission and during hospitalization, medication cost and total cost. Values were reported in argentinian pesos ($) and we adopted the payer's point of view. Sample was divided in two groups based on the median value of total cost. Univariate predictors of high cost were identified and then a multivariate logistic regression model was developed. **Results:** for the 156 patients, mean age was 76.2(±9.3) year, 76 patients (48.7%) were women and the median total cost was $2460. Therefore, 78 patients (50%) had high total cost. Univariate predictors of high cost were: age ≥85 years, prior COPD, blood urea > 50 mg/dl, anemia on admission, EF≤50% on admission echocardiogram and having 2 o more comorbidities. After multivariate logistic regression independent predictors of high cost were: anemia on admission [OR95CI 8.45(1.69–42.22)], prior COPD [OR95CI 4.1(1.76–9.47)], EF≤50% on admission echocardiogram [OR95CI 3.55(1.70–7.42)] and age ≥85 years [OR95CI 2.57(1.05–6.53)]. These patients had also greater hospitalization times and medication costs. **Conclusions:** in our sample of aged patients with heart failure we found that simple clinical characteristics identify subgroups with high hospital cost. These findings might help decision makers to plan how to use health resources according to local epidemiologic characteristics

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PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS OVER 80 YEARS OLD THROUGH THE TRANSRADIAL ACCESS

G. Samaja[1–2], A. Rodriguez Saavedra[1–2], M. Koretzky[1], R. Costello[2]. *[1]Sanatorio Colegiales [2]Hospital de Alta Complejidad de Formosa*

Objetive To describe our experience in coronary angioplasty using the transradial access (TA) in our first 100 patients (p) over 80 years. **Methods** We performed a multicenter registry, that uses the TA as our primary estrategy for therapeutic interventions. We analized the first 100 consecutive p over 80 years old that were treated with percutaneous transluminal coronary angioplasty (PTCA). We excluded p with mild or absent radial pulse, abnormal Allen test, primary PTCA or in shock. We analysed clinical characteristics, the intervention done, immediate access (introducer placed in less than 3 minutes in the radial artery), feasibility of TA (PTCA completed through the TA), mayor adverse cardiovascular events (MACE) including death, myocardial infarction, emergency percutaneous intervention or coronary artery by pass surgery and stroke; procedural success (residual stenosis < 20% withouth MACE), mayor vascular complications (bleeding requiring prolonged hospitalization, surgical intervention or blood transfusion; pseudoaneurysm; arteriovenous fistula; limb ischemia and nerve damage); minor vascular complications (haematoma, neuritis); specific questions to assess procedure-specific measures of quality of life (overall discomfort, pain in the access site, ability to walk, difficulty to urinate, low back pain) and also what site would the p prefer in a future intervention(radial or femoral). **Results** Patients mean age 83, with a range of 80–95, 9 being over 90 years old. Male 58 (58%). We performed 89 single vessel and 11 multivessel PTCA. Immediate access 83 p (83%) The planned procedures were performed through the TA in 95 p (95%). There were 5 TA failures (5%): 2 thin radial arteries, 1 humeral occlusion (prior Sones procedure) and 2 extreme tortuosity. Procedural success was 92% (5 TA failures, 2 coronary interventions failure to chronic total occlusion, 1 MACE) and 97% including the cross-over to femoral approach. MACE 1 (1%): non cardiac death third day post successful PTCA. Mayor vascular complications 0% and minor vascular complications (small haematomas in the puncture site) 7%. Excellent quality of procedure assessment and 96% chose the TA over femoral access as a future approach. **Conclusions** Among p over 80 years old, the Transradial Coronary Angioplasty is feasible, effective, safe and comfortable. The p prefer TA over femoral access.

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Transapical minimally invasive aortic valve implantation

T Walther[1], **R Battellini[1]**, V Falk[1], M Borger[1], J Kempfert[1], J Fassl[1], Y Rückert[1], A Linke[1], G Schuler[1], FW Mohr[1]. *[1]Heart Center Leipzig*

Background: To evaluate the results of minimally invasive transapical aortic valve implantation (TAP-AVI) at one year follow up. **Methods:** 79 high risk patients with symptomatic aortic valve stenosis received TAP-AVI using a pericardial xenograft fixed within a stainless steel, balloon expandable stent (Edwards SAPIEN TM)since 02/2006. All valves were implanted in a hybrid operative theatre under fluoroscopic and echcardiographic guidance. Patient age was 82.7 +-4.6 years, 77% were female,NYHA class was 3.4 +-0,5, previous cardiac surgery had been performed in 14 patients, logistic Euroscore risk for mortality was 28.9 +-17% and STS score risk for mortality was 15.6 +-9%. **Results:** TAP-AVI was performed successfully in 76 (96.2%) of the patients; three patients required early conversion, two of them were discharged alive. 75.9% of the patients were treated completely off-pump, secondary use of cardiopulmonary bypass was required in 8 (10.1%)patients. 82% of the patients were extubated early after 80 +-17min. Echocardiography revealed good valve function; trivial to mild (Grade 1°) paravalvular incompetence was present in 42%. At thirty days 6 (7,6%) patients and during the follow up 11 patients (15.1%) died,all with good valve function at most recent echo. Thirty day survival was 92.1 +-3.1%, six months survival 75.4 +-5.5% and one year survival 72.9 +-5.8%, respectively. There were no new onset neurological events. **Conclusions:** Transapical aortic valve implantation is a safe,minimally invasive and off pump technique to treat high risk patients with aortic stenosis.One year results are good, especially when considering the overall risk profile of these patients.

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Cardiac lead vegetations in rhythm devices - transvenous extraction

R. Battellini[1], A Rastan[1], M Uhlemann[1], N Lachmann[1], M Luduena[1], T Walther[1], N Doll[1], FW Mohr[1]. [1]*Heartcenter Leipzig*

Objective: Thoracotomy for extraction of infected leads with intracardiac vegetations is associated with significant morbidity and mortality. This study was assessed to evaluate the transvenous extraction as the primary approach for removal of infected leads associated with large vegetations. **Patients and Methods:** During a 4 year period 40 consecutive patients presented with TEE-confirmed septic lead vegetations >1cm. All patients had transvenous lead removal within 1 day of TEE, under extended anesthesiological monitoring. Mean age was 66,6y, 75% were male, 43% diabetic, previous cardiac surgery 30%, last device implantation >6 month: 65%, device in situ : mean 2,85y, l ocal symptoms 10%, positive Duke criteria 100%,septic shock 7,5% **Results:** 5% had occlusion of the corresponding subclavian vein. Mean echo size of vegetations was 1.4 cm2. 82% presented in septic condition including 3 patients with septic multiorgan failure (MOF). Operation mean time was 37.2 min. Thoracotomy or CPB support was not required. 91.5% of the leads could be completely removed using an extraction device. In 6 patients (15%) lead tip remained in situ. 4 patients died of non procedure related cause (3 with preoperative MOF,one duodenal bleeding).No clinical evidence of pulmonary embolism occurred. Pneumonia in 2 patients was treated medically. In one patient tricuspid endocarditis was successfully repaired on POD 1. In 80% microorganisms could be identified (59% staphylococcus). New rhythm device were implanted in 29 patients (72,5%) after a mean of 19 days. Mean follow up was 3.1 +- 1.4y with 67% survival rate. **Conclusions:** Transvenous explantation of infected leads was experienced with comparably low perioperative mortality and morbidity. Because of this promising experience it became the routine extraction approach in our hospital even in leads associated with vegetations.

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Survival from cardiac arrest in a specialized hospital.

P. Cokkinos[1], E. Papadopoulou[2], A. Gkouziouta[1], V. Voudris[1], D.V. Cokkinos[2]. [1]*2nd Cardiology Department, Onassis Cardiac Surgery Center, Athens, Greece.* [2]*1st Cardiology Department, Onassis Cardiac Surgery Center, Athens, Greece.*

Purpose: To estimate survival from in-hospital cardiac arrest in the inpatient wards of the Onassis Cardiac Surgery Center, a referral hospital for cardiology and cardiothoracic surgery. **Methods:** We reviewed the results of in-hospital cardiac arrests over a 30-month period. Cardiac arrest events were recorded using the Utstein style for cardiac and cardiac surgery patients in the wards, distributed over 3 floors of our hospital. The arrival time of the cardiac arrest team (CAT) was calculated from the first "code blue" call to arrival at the patient's bedside. All of our inpatients are on telemetry so the initial arrest rhythm can be accurately recorded. Our institution has a dedicated CAT which includes the on call cardiology and cardiac surgery Registrars and SHOs, the on call anaesthetist, and nursing supervisor. All members of the CAT are trained in advanced life support (ALS) or immediate life support (ILS) in courses accredited by the European Resuscitation Council (ERC). Biphasic defibrillators are available on every inpatient floor. **Results:** Over the 30 month observation period, 43 inpatient cardiac arrests were recorded in the wards (15 women, mean age 65.8 ± 16.3 years). Of the 43 patients, 17 (40%) were in the Cardiology wards and 26 (60%) in the Cardiothoracic Surgery wards. Twenty-three patients were intubated during the initial resuscitation attempt. Asystole was recorded as the presenting rhythm in 18 cardiac arrests, ventricular fibrillation or pulseless ventricular tachycardia (VF/VT) in 23, and pulseless electrical activity (PEA) in the remaining 2. In total, 32 patients (74%) survived the initial resuscitation attempt and 22 (51%) survived to hospital discharge. Survival to hospital discharge was 59% for the cardiological patients and 46% for the surgical patients. Survival from the initial resuscitation attempt and survival to discharge was 56% and 28%, respectively, for asystole and 83% and 65%, respectively, for VF/VT. Both PEA cardiac arrest patients survived to discharge. Of the 23 patients who were intubated, 15 (65%) survived the initial resuscitation attempt but only 6 (26%) survived to discharge. The median CAT arrival time was 1 min for all patients and 0.54 min for patients who survived to hospital discharge. **Conclusions:** Overall survival from in-hospital cardiac arrest to discharge in our referral hospital was 51%. Factors such as telemetry monitoring, defibrillator presence on all inpatient floors, and prompt arrival of a properly trained cardiac arrest team to the patient's bedside contributed to successful resuscitation attempts.

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Non invasive assesment of coronary artery by pass grafts by VCT 64 multislice. Comparison with conventional coronary angiography.

J. Bonelli[1], C. Cigalini[1–2]. [1]*INSTITUTO GAMMA* [2]*SANATORIO LOS ARROYOS*

Objetives: The aim of this study was to determine the diagnostic accuracy of multidetector computed tomography in the assessment of coronary grafts. **Patients and method:** We evaluated 39 coronary grafts in 13 patients (12 coronary grafts -mamary artery // 24 venous and 3 radials) who had undergone coronary artery by pass grafts surgery and had a clinical indication for angiographic graft assessment. A 64 detector scanner was used for non invasive assessment of the coronary grafts at slice thickness 0,64 mm, the diagnostic accuracy of VCT in the non invasive assessment of significant lesions (> 50%) in coronary artery by pass grafts was evaluate by comparison with the results of conventional angiography. **Results:** 39 grafts were analized by using both techniques, we detected - proximal oclusion 5/39 (12%), -distal oclusion 1/39 (2,5%) and total oclusion 6/39 (15,4%). Permeability grafts 27/39 (69,2%). The sensitive and specifity of VCT in detecting significant lesions were 75% and 100% for all grafts. The positive and negative predictive value were 100% and 90%. We have got 3 false negative (7,7%). **Conclusion:** The diagnositc accuracy of VTC in coronary artery by pass grafts assessment was high.

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Does Carvedilol Therapy Reduce QT Dispersion in Patients with Heart Failure ?

E. Tatli[1], T Kurum[1], M Aktoz[1], C Gul[1], M Buyuklu[1]. [1]*Trakya Universityy School of Medicine, Department of Cardiolog*

Background: Carvedilol therapy reduces the severity of the ventricular dysfunctions, increases left ventricular ejection fraction, and consequently reduces the mortality and morbidity rates. However, there are very limited data relating to the effect of carvedilol on QT dispersion (QTd). In this study, we investigated the effect of carvedilol therapy on QTd in patients with heart failure. **Methods:** Fifty six patients with heart failure and an left ventricular ejection fraction less than 40% were prospectively included in the study. Carvedilol was administered in addition to standard therapy for heart failure at a dose of 3.125 mg bid and uptitrated biweekly to the maximum tolerated dose. Clinical examination, determinations of plasma levels of tumour necrosis factor-alpha (TNF-α), interleukin (IL)-2 and IL-6, electrocardiography and radionuclide study were performed at baseline and repeated at the end of the 4th month of carvedilol therapy. From standard 12-lead electrocardiograms the maximum and minimum QT intervals, corrected QT intervals and corrected QTd values were calculated at baseline, after the 4th month of carvedilol therapy. **Results:** At the end of the 4th month, IL-6 and TNF-α levels, QTd, corrected QTd, resting heart rate, systolic blood pressure significantly decreased, left ventricular ejection fraction and NYHA functional class improved by carvedilol therapy (QTd; from 66±22 ms to 28±13 ms; $p<0.001$, corrected QTd; from72±23 ms to 30±14 ms; $p<0.001$). However, maximum corrected QT and maximum QT values did not change significantly, while minimum QT and minimum corrected QT values significantly increased. **Conclusion:** In conclusion, carvedilol therapy for 4 months resulted in a significant the reduction in QTd, which paralleled the improvement of left ventricular ejection fraction and the decreasing of TNF-α and IL-6 levels in patients with heart failure.

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Effect of Carvedilol on P-Wave Duration and P-Wave Dispersion in Patients with Systolic Heart Failure

E. Tatli[1], T. Kurum[1], M. Aktoz[1], M. Buyuklu[1], C. Gul[2], A. Barutcu[1]. [1]*Trakya University School of Medicine, Department of Cardiology, Edirne, TURKEY* [2]*Edirne State Hospital, Edirne, TURKEY*

Background: P-wave dispersion has been defined as the difference between maximum and minimum P-wave duration. Prolonged P wave duration and increased P-wave dispersion are related with increased risk for atrial fibrillation. Atrial fibrillation is associated with heart failure in approximately 20%–50% of patients with increased mortality and morbidity. Carvedilol therapy reduces the severity of the ventricular dysfunction, increases left ventricular ejection fraction and reduces the mortality and morbidity. However the effect of carvedilol on P-wave dispersion and P wave duration in patients with systolic heart failure is unknown. In the present study, we aimed to evaluate the effect of carvedilol therapy on P-wave duration and P-wave dispersion in patients with heart failure. **Method:** Fifty six patients with heart failure and an left ventricular ejection fraction less than 40% were prospectively included in the study. Carvedilol was administered in addition to standard therapy for heart failure at a dose of 3.125 mg bid and uptitrated biweekly to the maximum tolerated dose. Clinical examination and radionuclide study were performed at baseline and repeated at the end of the 4th month of carvedilol therapy. Baseline maximum and minimum P-wave duration and P-wave dispersion were determined on 12-lead electrocardiogram recorded for each patient and repeated at the end of the 4th month of carvedilol therapy. **Results:** At the end of the 4th month, maximum P-wave duration and P-wave dispersion significantly decreased, left ventricular ejection fraction and NYHA functional class improved by carvedilol therapy (Maximum P-wave duration; from 126±9 ms to 120±7ms; $p=0.001$, P-wave dispersion; from 51±7 ms to 46±5 ms; $p=0.001$). However, there was no significant difference between the values of minimum P wave duration measured before and at the end of the 4th month of carvedilol therapy (from 74±4 ms to 73±4 ms; $p=0.600$). **Conclusion:** Carvedilol therapy reduces directly or indirectly maximum P-wave duration and P-wave dispersion. This may lead to a reduction in the occurence of atrial fibrillation in patients with heart failure.

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Non invasive coronary angiography with MSCT 64 slice

J. Bonelli[1], C. Cigalini[1–2], P. Pollono[1]. [1]*INSTITUTO GAMMA* [2]*SANATORIO LOS ARROYOS*

Objetives: The new 64 row multidetector computed tomography (CT) can now detect coronary artery disease with shorter breath hold time in syntomatic patients. The aim of our study was to compare this technique with invasive coronary angiography. **Patients and method:** A total of 23 selected patients with calcium score >100 (agaston score) were examined with both angiographic methods. Findings from both techniques were analyzed according to a predetermined segmented anatomical model of the coronary artery.The detection and relevance of native coronary artery lesions were evaluated, and lesions with reduction in diameter of more than 50% were considered significant. **Results:** Sensitivity, specifity, negative predictive value (NPV), positive predictive value (PPV) for individual native coronary lesions with no invasive method were:

ARTERY	*SENSITIVITY*	*SPECIFICITY*	*NPV*	*PPV*
LDA	100%	100%	100%	100%
Dg	100%	100%	100%	100%
LCx	83,3%	100%	100%	94%
RCA	77,7%	100%	100%	87,5%

Conclusion: Non invasive coronary artery angiography with 64 multidetector row computed

tomography is a powerful diagnostic tool, especially for the evaluation of the native coronary arteries.

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Clinical and echocardiographic assessment of patients with aortic valve disease - maternal and fetal outcome

A. Lesniak-Sobelga[1], W. Tracz[1], M. Kostkiewicz[1]. *[1]Department of Cardiac and Vascular Diseases, Institute of Cardiology Jagiellonian University School of Medicine, John Paul II Hospital, Kraków, Poland [2]Department of Cardiac and Vascular Diseases, Institute of Cardiology Jagiellonian University School of Medicine, John Paul II Hospital, Kraków, Poland [3]Department of Cardiac and Vascular Diseases, Institute of Cardiology Jagiellonian University School of Medicine, John Paul II Hospital, Kraków, Poland*

Background: Diverse physiological changes occurring in pregnancy have a profound impact on pregnants suffering from valvular heart disease, so their understanding is essential for effective management of those patients in the course of pregnancy, labor, and childbirth. The study aimed to compare the outcome of pregnancy in women with aortic valve disease. **Material:** 74 pregnant women aged 18 – 39, mean 24 $\pm$ 4.6 years, with aortic valve disease (44 patients with aortic stenosis (AS): 24 patients with moderate to severe AS, 20 patients with mild AS; 30 with aortic valve regurgitation (AR), including 9 with III - IV°AR, were observed. Medical history and physical examination, NYHA class assessment, ECG and echocardiography were performed during consecutive trimesters of pregnancy and 6 – 8 weeks after delivery. **Results:** During pregnancy all patients with mild AS remained in the I NYHA functional class. No medical treatment was required. All patients delivered spontaneously healthy babies, with mean birth weight 3.758 g $\pm$ 420g (ranging from 3.100 to 4.200 g). Moderate to severe AS: In the 1st TR of pregnancy all of them remained in NYHA I – II functional class. A clinical deterioration (NYHA III functional class) was observed in 8 patients within the 3rd TR. In 7 cases post-exertion dyspnea and ventricular arrhythmia was also encountered (Lown IVa), and in 1 case paroxysmal atrial fibrillation combined with dyspnea was observed -recurrence of the sinus rhythm was achieved by potassium supplementation. The maximum pressure gradient ranged from 60 to 162 mmHg, throughout the pregnancy and was greater by 20 to 38 mmHg in comparison to the post delivery values. In 10 patients the maximum aortic gradient exceeded 100 mmHg. There was a significant decrease after delivery, in comparison to the values obtained during the 3rd TR ($p < 0.001$). Thirteen patients with severe AS delivered by cesarean section in general anesthesia, the remaining vaginally, with shortening II° period of delivery. All patients delivered healthy babies with normal birth-weight 3.520 $\pm$ 330 g (ranging 3.080 – 4.100 g). In pregnants with AR good tolerance of volume overload was observed in 27 patients. A deterioration (dyspnea after slight physical effort) occured only in 3 patients with enlarged left ventricle (LVEDD $>$ 6 cm, LVESD$>$ 4 cm) and depressed cardiac function (EF $<$ 55%).These 3 patients were allocated to the III NYHA functional class during the 3rd TR and received diuretic therapy. 25 patients with AR delivered spontaneously, 5 patients had cesarean section in general anesthesia due to obstetric indications. The birth weight of newborns ranged 2.750–4.150g, mean 3.460 $\pm$ 425 g. **Conclusions:** 1. In women with severe AS (AVA $<$1.0 cm^2) pregnancy could lead to sudden clinical status deterioration. 2. A deterioration of clinical status in the course of pregnancy may well be expected in patients with aortic valve regurgitation, diagnosed with an enlargement and depressed function of the left ventricle.

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Information poverty as a risk factor for cardiovascular disease: Ashanti-ProCor Project to Increase CVD Knowledge and Practice Among Health Workers

C. Coleman[1], B. Bilchik[1]. *[1]ProCor/Lown Cardiovascular Research Foundation [2]ProCor/Lown Cardiovascular Research Foundation*

In Ghana, heart disease and stroke are the top 5 and 6 causes of death and their incidence is increasing rapidly. Nationally, 29% of adult Ghanaians are hypertensive, 14% are obese, and 6% are diabetic. Among Ghana's regions, the Ashanti region has the highest number of cardiovascular disease reported at outpatient departments. Low-cost preventive strategies can save millions of lives for whom treatment would be unaffordable on either individual or national levels; and providing reliable health information for health workers in developing countries is potentially the single most cost effective and achievable strategy for sustainable improvement in health care. The Ashanti-ProCOR Project to Increase CVD Knowledge and Practice Among Health Workers is a four-year pilot project designed to increase understanding of the CVD information needs of health workers who can play a key role in promoting heart health. Through a participatory process engaging individuals and groups in the Ashanti region, the project assesses needs, resources, information flows, and barriers to accessing relevant, reliable information. Methods include a literature review; baseline survey of CVD knowledge and practice; key informant interviews with stakeholders in health, academia, and communication at local, regional, national, and global levels; and focus groups with health workers. The project's first phase of key informant interviews identified a broad range of health workers who play a key role in preventing heart health. Among these groups, access to technology and/or the necessary skills to access information vary widely, with some groups lacking access and others utilizing wireless technologies in innovative ways. Findings can guide the collaborative development and evaluation of innovative, effective, sustainable communication strategies promoting heart health in Ghana and globally.

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Implementation measures secundary prevention CHD in Banja Luka Region,Republic of Srpska,B&H

D. Vulic[1], S Loncar[2], B Vulic[1], D Roganovic[2], M Ostojic[3], J Marinkovic[4]. *[1]Center for medical research [2]Clinical center Banja Luka [3]Clinical Center Serbia [4]School of Medicine Belgrade*

Cardiovascular disease are the leadery couses of death in Republic of Srpska - Bosnia and Herzegovina. Within the framework of the National Program for Cardiovascular Disease Prevention, we were following up risk factors for CHD and we found that all these factors were highly present. **Aim:** The aim of the study is to establish the conduction of European recommendations for secondary prevention of coronary disease (achieving goal values in blood pressure, total cholesterol and LDL, BMI, and blood glucose), lifestyle changes (smoking cessation, dietary changes, increasing physical activity) and the appropriate therapy. **Methods:** The survey was anamnestic conducted in selected geographic area in Banja Luka Region in Republika Srpska-Bosnia and Herzegovina. Consecutive patietns (<70years) were identified retrospectively with the following diagnoses: coronary artery by-pass grafting, percutaneus transluminal coronary angioplasty, acute myocardial infarction and acute myocardial ischaemia without infarction. Date collection was based on a retrospective review of hospital records and prospective interview and examination of the patients **Results:** In our study we analyse 125 patient at 2004/2005, aged between 40 and 71, 20.8% women and 79.2% men. Twenty had BMI "T25kg/m2, 39.2% had goal values blood pressure systolic BP"T 140 and/or diastolic BP "T 90mmHg, 15,2% had total plasma cholesterol "T 5,0mmol/l, 18,4% had goal values LDL and 66.4% had blood glucosae "T6.1mmol/l.Lifestyle changes as smoking cessation we had at 23.2% patients,diatery changes at 63% and increasing physical activity at 81%.Reported medication at interview was:antiplatelets drugs 92%,beta-blockers 62,4%,ACE inhibitors 62,4%,lipid-lowering drugs 41,6%,calcium antagonist 16,8%,nitrates 59,4% and antidiabetcs 16,8% two years later after imlementation New Joint European Guidelines. **Conclusion:** our study demonstrated good implementation measures secundary prevention CHD.After imple-mentation guidelines we changed therapeutic aproach for treatment patient with CHD.It good potential for secundary prevention our population in future.

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Awareness, Treatment and Control of the Combination of Hypertension and Hypercholesterolemia in a Primary Prevention Population in Chile

M. Acevedo[1], V. Krämer[1], R. Tagle[1], G. Chamorro[1], M. Fernandez[1], L. Orellana[1]. *[1]Pontificia Universidad Católica de Chile, Santiago, Chile*

Background: The treatment and control of hypertension (HTN) and hypercholesterolemia (HCHOL) have demonstrated a decrease in cardiovascular events. The coexistence of both risk factors (RF) determines a higher cardiovascular risk than each RF separately. AHA/ACC guidelines have improved awareness, treatment and control of individual RF. However, there are little published data about the awareness, treatment and control of both RF taken together. **Objectives:** To determine the prevalence, awareness, treatment and control of HTN and HCHOL individually and both together, in a primary prevention cohort. **Methods:** In subjects without known atherosclerotic disease, seen in an ambulatory setting, we performed a survey about cardiovascular RF, measured systolic and diastolic blood pressure, BMI, waist, and determined fasting lipids and glycemia. We also recorded pharmacological treatment. Treatment goals were defined according to AHA/ACC guidelines in primary prevention. **Results:** 2158 subjects (64% men, 56$\pm$13 yo). Prevalence of HTN and HCHOL was 31% and 64%, respectively; 21% of the subjects presented both RF. Only 8% of these subjects were on treatment target for both goals, HTN and HCHOL. Awareness, treatment and control of the RF are shown in the table. **Conclusions:** The coexistence of HTN and HCHOL is common and it negatively influences the awareness, treatment and control of these RF. These results emphasize the need of public policies pointing out that RF tend to cluster increasing cardiovascular risk

Risk Factor	Prevalence	Awareness	Treatment	Control
HTN	31% (n=665)	65% (n=432)	67% (n=333)	62% (n=207)
HCHOL	64% (n=1363)	68% (n=924)	27% (n=245)	54% (n=132)
HTN + HCHOL	21% (n=457)	48% (n=219)	43% (n=94)	37% (n=35)

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Does gender influence postprandial lipaemia in heterozygotes of familial hypercholesterolaemia?

G. Kolovou[1], **P. Cokkinos**[2], S. Mavrogeni[1], G. Hatzigeorgiou[1], D.V. Cokkinos[1]. *[1]1st Cardiology Department, Onassis Cardiac Surgery Center, Athens, Greece. [2]2nd Cardiolody Department, Onassis Cardiac Surgery Center, Athens, Greece.*

Purpose: We sought to evaluate the influence of gender differences in triglyceride (TG) response following a fatty meal in clinically defined heterozygous patients with familial hypercholesterolemia (hFH). **Methods:** Nineteen hFH men were age-matched with 19 pre-menopausal hFH women. All patients were under 45 years old. Plasma TG concentrations were measured before and 2, 4, 6 and 8 hours (h) after a standardized fat load (350 gr per 2 m2 body surface area). **Results:** Men with hFH had a greater body mass index (BMI) than hFH women (25.7 $\pm$ 2.3 vs 20.9 $\pm$ 2.2, $p<0.001$). An abnormal postprandial response was observed in 63% and 16% in hFH men and women, respectively. The mean TG-area under the curve value was higher in hFH men compared with hFH women (1457 mg/dL/h vs 898 mg/dL/h, $p=0.001$). Both gender ($p=0.032$) and BMI ($p=0.006$) equally seem to affect the postprandial TG response, but fasting TG levels ($p<0.001$) were the main determinant. **Conclusions:** Men with hFH have a higher BMI, fasting and postprandial TG levels compared with age-matched pre-menopausal hFH women, which may partially explain the earlier onset of coronary heart disease.

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Coronary atherosclerosis in Western Siberia: north-south differences

V. Kuznetsov[1], I. Zyrianov[1], G. Kolunin[1], D. Krinochkin[1], L. Evlampieva[1], M. Bessonova[1], E. Gorbatenko[1]. *[1]Tyumen Cardiology Center, Tyumen, Russia*

The purpose of the study is to evaluate north-south differences in characteristics of coronary atherosclerosis in Tyumen region of Western Siberia. **Methods:** A total of 5936 symptomatic consecutive subjects underwent clinical investigation and coronary angiography. 2227 patients with coronary angiographic atherosclerosis (>50 of lumen) or with history of myocardial infarction were selected: 1261 from the South and 966 from the circumpolar North of Tyumen region. **Results:** Prevalence of smoking, obesity, diabetes mellitus, hypertension and alcohol drinking in the North was significantly higher than in the South (67.9 vs 48.9%, ğ<0.001; 51.7 vs 39.4%, ğ<0.001; 12.8 vs 7.9%, ğ<0.001; 76.3 vs 70.2%, ğ=0.004; 36.4 vs 23.0%, ğ<0.001, respectively). Calcification of coronary arteries occurred more frequently in the South (12.0 vs 8.2%, ğ=0.017). Prevalence of left main and left circumflex coronary atherosclerosis did not differ between groups while lesions of left anterior descending (LAD) and right coronary arteries were registered more often in the North (77.7 vs 73.2%, ğ=0.0176; 73.2 vs 67.1%, ğ=0.0025, respectively). Prevalence of severe stenosis (>75%) of left main artery was higher in the South (37.1 vs 20.5%, ğ=0.0146) as well as rate of type C lesion (75.7 vs 60.6%, ğ=0.03) and prevalence of complicated lesion of this artery (20.8 vs 6.9%, ğ=0.013). Northern patients had significantly higher prevalence of type C lesion (60.4 vs 54.5%, ğ=0.0343) as well as rate of complete occlusion of LAD (25.3% vs 31.5%, ğ=0.0107) while prevalence of complicated lesion of this artery was higher in the South (16.8 vs 10.3%, ğ=0.002). Southern patients had proximal and complicated lesions of right coronary artery more often (37.5 vs 27.3%, ğ=0.0001; 14.5 vs 8.5%, ğ=0.0042, respectively). **Conclusion:** Angiographic signs of coronary atherosclerosis were different in the South and the North of Western Siberia. Such discrepancies can be probably explained by differences in risk-factor profile.

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ASYMPTOMATIC CAROTID ATHEROSCLEROSIS IN PATIENTS WITH CORONARIOPATHY: PREVALENCE, PREDICTORS AND DIAGNOSIS

R. Marelli[1], J. Lopez Camelo[2], C. Geronés[3], C Viscuso[4], A. Gomez Monroy[5], G. Godoy[6], M. Portis[7], F. Bourdin[8], I. Rifourcat[9], R Sanchez[10]. *[1]Hospital San Juan de Dios. La Plata Argentina [2]Hospital San Juan de Dios. [3]Hospital San Juan de Dios. [4]Hospital San Juan de Dios. [5]Hospital San Juan de Dios. [6]Hospital San Juan de Dios. [7]Hospital San Juan de Dios. [8]Hospital San Juan de Dios. [9]Hospital San Juan de Dios. [10]Hospital San Juan de Dios.*

Objective: to determine in patients with coronariopathy and myocardic revascularization surgery indication the prevalence and predictors in atherosclerosis plaques in internal carotids which cause severe stenosis and a positive predictive value (PPV) of the neck vessels echo doppler for their diagnosis. **Population and method:** from 2001 to 2007, 300 patients were included, 250 men (83,3%), aged 59,2 +/- 8,5 years, with severe coronariopathy in surgical plan, without symptoms attributable to carotid disease. Medical history was carried out for all patients, and they underwent coronary angiographies and neck vessels echo dopplers. By means of this method, obstruction in the internal carotid was diagnosed ≥70%, and digital angiography of the neck vessels was performed. Cross-sectional and observational study: The chi square test was used for the comparative studies with nominal values using the Yates corrected value. Categorical variables are expressed in percentages. In the statistical comparisons, a value of 'p' was assigned by means of the Fisher exact method, 'p' meaning "T 0,05. Univariant and multivariant analysis was made with EPI Info from the OMS 5.01. **Results:** Prevalence: 8.66% (IC 95%: 5.68–12.74). Predictors: UNIVARIANT ANALYSIS MULTIVARIANT ANALYSIS

Variable	OR	IC 95%	Chi2	p	OR	IC 95%	p
Age ≥ 60 years	4.32	1.49–13.51	8.22	0.00	2.79	0.88–8.85	0.08
Male	0.51	0.19–1.42	1.42	0.23	0.56	0.16–1.93	0.36
Smoking habit	0.62	0.25–1.48	0.95	0.33	0.53	0.18–1.54	0.25
Diabetes	1.03	0.35–2.86	0.04	0.84	0.64	0.19–2.09	0.46
HTA	0.36	1.81	0.71–4.70	1.31	0.25	1.63	0.56–4.74
Hypercholesterolemia	0.86	0.32–2.37	0.01	0.93	1.05	0.34–3.25	0.91
Injury of trunk ≥50%	1.54	0.55–4.12	0.44	0.50	2.92	0.96–8.91	0.05
Injury in 3 vessels ≥70%	1.66	0.60–4.79	0.70	0.40	1.56	0.49–4.93	0.44
Carotid murmur	14.80	5.40–30.80	51.20	0.00	16.40	5.46–49.59	0.00

Echo doppler PPV: the 26 patients in whom this study detected severe carotid stenosis, were all confirmed by means of angiography: PPV: 100%. In right internal carotid, 16 cases of severe stenosis were confirmed with angiography. In left internal carotid, 17 cases diagnosed by echo doppler, 16 were confirmed with angiography: PPV: 94%.

Conclusion: the prevalence of severe carotid stenosis in the studied population was of 8.66%. The statistically significant predictors were: presence of cervical murmur, aged "d 60 and injury of "d 50% of left coronary trunk. The ultrasound PPV for its diagnosis is close to a 100% and should be used systematically in this patient population.

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ATHEROSCLEROSIS OF CAROTID ARTERIES AND CORONARY ARTERY DISEASE

P. Meszaros[1], N. Cemerlic-Adjic[1], K. Pavlovic[1], M. Maletin[1]. *[1]Institute of Cardiovascular Disease, Sremska Kamenica, Serbia*

Objective: To investigate the assotiation between carotid atherosclerosis, measured as intima-media thickness (IMT), or detected carotid plaques, and coronary artery disease (CAD). **Methods:** 200 patients undergoing selective coronary angiography were examined by carotid ultrasound. The maximal IMT greater than 0.8mm at the far wall of common carotid artery, including raised lesions and plaques, was selected as the highest value for comparison. The relation between carotid artery atherosclerosis and severity of CAD was determined. **Results:** A significant correlation between carotid atherosclerosis (especially increased IMT) and advansing CAD ($p < 0.001$) was found. Four independent predictors of CAD were found in the discriminant analysis: age, hyperlipidaemia, smoking and IMT. A significant increase in IMT, and atherosclerotic lesions was observed among patients with one, two, and three vessel CAD. The number of critically stenosed carotid arteries increased with advensing CAD. Non of the patients with normal coronary arteries had severe stenosis of the extracranial arteries. **Conclusions:** IMT and other atherosclerotic lesions of carotid arteries increases with advansing CAD, and coexistence of CAD with severe stenosis of carotid arteries was found in patients with three vessel CAD.

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INTERLEUKIN-6 (IL-6): IS A MARKER FOR CARDIOVASCULAR DISEASE IN PATIENTS WITH DIABETIC NEPHROPATHY

A. Silva[1], A Baptista[2], P Neves[3]. *[1]Hospital Distrital de Faro [2]Hospital Distrital de Faro [3]Hospital Distrital de Faro*

Interleukin-6 (IL-6) is synthesized in response to diverse inflammatory stimuli and causes cellular damage and promotes atherosclerotic process. Elevated concentrations of IL-6 are associated withy the development and severity of coronary heart and renal disease. The aim of the present study was to assess the relationship between increased plasma IL-6 levels and outcome in patients with diabetic nephropathy (DN). We included 30 patients, mean age 80 years, followed in on Low Clearance outpatient clinic for more than 12 months. The presence of inflammation parameters obtained from blood samples collected monthly since the first day of consultation and the criterion of hospitalization (cardiovascular disease) is defined by medical history and clinical symptoms. The patients were divided in two groups: Group A=12 patients beginning dialysis and Group B =18 patients that not evolution of ESRF. The two groups were compared in relation of IL-6 and outcome (number and day of hospitalization from cardiovascular disease) in patients with DN. The IL-6 is measured by means IMMULITE 2000 analyser. The presence of clinical cardiovascular disease (CVD) was defined by medical history and clinical symptoms. For comparisons between groups, Student's t-test and the ƒÓ2 test and were used. The patients in the A group showed elevated IL-6 levels (6,7 vs 4,0 p = 0,08) and the number and the duration of hospitalization in this group is significantly higher (1,42 vs 0,1, p=0,002 and 12 vs 0,6 day p=0,004. The present study the elevated IL-6 plasma level has a major effect on cardiovascular disease in patients with diabetic nephropathy.

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Prevalence of cardiovascular risk factors and metabolic syndrome in a hospital hypertension unit

M. Irurita[1], C. Culebras[2], E. Bosch[2], R Chirino[3], J Irurita[1], L Sanchez[3], L Lopez Y Juan[1], B Saiz[2], P Rosique[2], R Guerra[2]. *[1]DR. Negrin Hospital, Las Palmas GC SPAIN [2]Insular Hospital, Las Palmas GC, SPAIN [3]Las Palmas de Gran Canaria University, SPAIN*

Aim: Limited information is available on the prevalence of metabolic syndrome in many countries. To assess the prevalence of metabolic syndrome (MS) in patients treated in a University Hospital Hypertension Unit (HU), and study cardiovascular risk factors, target organ damage and comorbidity of metabolic syndrome in the Canary Islands, a community with high prevalence of obesity and diabetes (at least twice the continental rates). **Method:** We enrolled 186 consecutive hypertensive patients attending our UH during 2006. Demographic data included age, gender, diabetes/hyperglycemia, antropometric variables, blood pressure, lipid profile, uric acid, creatinine, microalbuminuria, C reactive protein, left ventricular hypertrophy, comorbidities, antihypertensive drugs. Both International Diabetes Federation (IDF) and Adult Treatment Panel (ATP III) criteria were used to confirm metabolic syndrome. **Results:** Over half of the population were males (104 p 56%), with a mean age of 53 years old. The prevalence of MS was 68%, 126 patients met ATP III criteria and 138 p (74%) met IDF criteria, with a significant gender difference 80% were females and only 58% of males. The mean waist circumference was 99.3 cm in females and 101.1 in males. Up to 24% were diabetics, 63% had dyslipidemia, 49% were obese and left ventricular hypertrophy was found in 49.3%. Microalbuminuria was detected in 30.4%, while 40%had cardiac disease and 46% renal disease. Th profile of our MS patients was depicted by older age, higher systolic pressure, bigger waist perimeter, high body mass indexes, this population had more left ventricular hypertrophy, renal and cardiac diseases were more prevalent ($p<0.05$), and they received more antihypertensive drugs ($p<0.05$). **Conclusions:** The prevalence of metabolic syndrome in our University Hospital Hypertension Unit is very high, particularly among females. Metabolic syndrome was associated with more severe hypertension, higher cardiovascular risk and target organ damage.

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Non-ischemic benefits may be independent of the LDL-lowering properties of atorvastatin

J.C. Larosa[1], J Shepherd[2], D.D. Waters[3], A. Breazna[4], D. Demicco[4]. *[1]State University of New York Health Science Center, New York, USA [2]University of Glasgow, UK [3]San Francisco General Hospital, USA [4]Pfizer Inc, New York, USA*

There has been much debate as to whether non-LDL lowering effects contribute to the cardiovascular (CV) benefits demonstrated with statin therapy. In the TNT study, 10,001 patients were randomized to double-blind therapy with 10 mg or 80 mg of atorvastatin. Median follow-up was 4.9 years. For this analysis, we studied the association between 3-month on-treatment LDL-C levels and the i) effect on major CV events, ii) change in estimated glomerular filtration rate (eGFR). Statistical estimations were made using Cox (for major CV events) and linear (for eGFR) regression models with on-treatment LDL cholesterol as a

continuous variable-predictor. Achieved LDL-C level at 3 months among all TNT patients was predictive of benefit in the risk reduction in major CV events. This association held true when on-treatment LDL-C was co-varied for or stratified by randomized treatment, and when LDL-C values in individual treatment groups were analyzed separately. Drug dose effect on major CV events, however, was lost when adjusted for 3-month LDL-C level. The reverse was true for eGFR, i.e., drug dose effect was apparent and unaffected by achieved LDL (Table). Thus the statin benefits on eGFR, perhaps representing small vessel effects, appear to be independent of the LDL effects of atorvastatin. This suggests that the search for clinically important non-LDL effects of statins might be usefully directed to diseases involving blood vessels smaller than those affected by atherosclerosis.

EFFECT OF DOSE OF ATORVASTATIN ON eGFR

	Hazard ratio (95% CI)	P-value
Atorvastatin dose (80 mg vs 10 mg)	1.68 (1.28, 2.07)	<0.0001
Atorvastatin dose covarying for 3-month LDL	1.62 (1.15, 2.09)	<0.0001

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Unravelling Hidden Renal Dysfunction. An unrecognized major problem.

M. Irurita[1], C Culebras[2], E Bosch[2], R Chirino[3], J Irurita[2], L Suarez[3], B Saiz[2], P Rosique[2], R Guerra[2], V Nieto[2]. *[1]Dr. Negrin Hospital, Las Palmas GC, SPAIN [2]Insular Hospital, Las Palmas GC, SPAIN [3]Las Palmas de Gran Canaria University, SPAIN*

Renal dysfunction is a major contributor to cardiovascular morbidity and mortality. Certain medical procedures may jeopardize patients with undiagnosed renal dysfunction. **Aim:** To assess the proportion of hidden renal failure (HRF) in patients undergoing coronary angiography. **Method:** We enrolled 128 patients, undergoing coronary angiography (both diagnostic and therapeutic procedures) during 2006. Patients with known renal dysfunction and or baseline serum creatinine over 1.5 mg/dl, a cut point value credited for discriminative power, were excluded from the analysis. Demography data showed a mean age of 60.5+/-13 years, 100 patients (78%) were males, 70 patients (55%) had hypertension, 45 patients (35%) diabetes, 55 patients (43%) were current smokers and 55 patients (43%) had dyslipidemia. The mean body mass index was 29 + 6 Kg/m2 and ejection fraction was 44% + 24 on average. Baseline serum creatinine was determined, besides creatinine clearance and glomerullar filtration rates were estimated according to Cockcroft-Gault (CoCG) and MDRD-4 equations respectively. **Results:** According to the current cardiovascular stratifying criteria, renal dysfunction (RD) assessed considering serum creatinine above ≥ 1.3, only 16% of our cases met RD criteria. CoCG equation applies to patients without renal dysfunction while MDRD-4 is used in patients with renal impairment. But when we consider the estimates of creatinine clearance and glomerullar filtration rate, the results were quite different and are shown in the following table. Our model depicted diabetes (p 0.001), hypertension (p 0.03), body mass index (p 0.012), admission glycemia (p 0.04); whereas age and ejection fraction showed a trend (p 0.06) **Conclusion:** Our results show that renal dysfunction assessed by means of serum creatinine underestimates the high prevalence renal dysfunction. Cardiovascular risk factors such as diabetes, hypertension and overweight appear as major risk factors for further renal failure.

glomerullar filtration rate	normal	mild RD	moderate-severe RD
ml/m	> over 90	60–89	under 60
Cockcroft (%)	43.8	37.5	18.8
MDRD-4 (%)	18.8	59.4	21.9

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Pituitary-adrenal axis hormone adjustment following cardiac surgery

M. Irurita[1], C Culebras[2], J Velayo[2], J Irurita[1], R Chirino[3], L Suarez[3], H Marrero[2], B Saiz[2], L Lopez Y Juan[1], V Nieto[2]. *[1]Dr. Negrin Hospital, Las Palmas GC,Spain [2]Insular Hospital, las palmas GC, SPAIN [3]Las Palmas de Gran Canaria University, SPAIN*

Stress response to surgery is modulated by different factors such as the magnitude of the injury, the type of procedure and anesthesia. Stressful experiences induce important hormonal changes in the cardiovascular system and hypothalamic-pituitary-adrenal axis, reflecting a close and bidirectional relationship. **Aim:** To study hormonal changes induced by cardiac surgery. Steroid hormones glucocorticoids (ACTH – cortisol), mineralocorticoids (aldosterone), androgens (dehydroepiandrosterone or DHEA) and renine were determined in cardiac surgery patients. **Method:** We enrolled in the study a total of 50 patients without evidence of adrenal disease, undergoing programmed cardiac surgery. The mean age was 59 + 11 years old, the body mass index was 26 +3, ejection fraction was 58 + 11. Average surgery duration was divided in subsets: anesthesia 240 minutes, cardiopulmonary bypass 66 minutes and myocardial ischaemia 111 minutes. The mean time to extubation was 14 hours and the ICU stay was 3.4 + 1.2 days on average. Data were compared at baseline (48 hours before surgery), in the first 24 hours following surgery and by the 5th day. Significant and early changes in cortisol, aldosterone and renine levels were found attributable to surgical stress, volume depletion and hydroelectrolyte imbalance. **Conclusion:** our data show an early and swift activation of the hypothalamic-pituitary-adrenal axis responding to stress and volume or hydroelectrolyte imbalance.

SEQUENCE OF HOMONE LEVELS CHANGES FOLLOWING CARDIAC SURGERY

	Baseline	First 24 h	5th day
Cortisol μg/dl	19.23	53.5 (p<0.005)	37.6 (p<0.005)
ACTH pg/ml	13.93	16.14	11.65
DHEA μg/dl	948.66	1270	1367 (p<0.005)
Aldosterone ng/dl	97.34	163.98 (p<0.005)	140.87
Renine ng/dl	12.48	19.68 (p<0.005)	14.10

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Determinant factors for temporary hormone changes in cardiac surgery

M. Irurita[1], C. Culebras[2], J Velayo[2], J Irurita[1], R Chirino[3], L Suarez[2], H Marrero[2], B Saiz[2], L Lopez Y Juan[1], V Nieto[2]. *[1]Dr. Negrin Hospital, Las Palmas GC, SPAIN [2]Insular Hospital, Las Palmas GC, Spain [3]Las Palmas de Gran Canaria University, SPAIN*

It is well known that thyroid and growth factor hormone levels change in response to stress, fear or emotions. But little is known of the magnitude and duration of this response. **Aim:** To evaluate the changes in the thyroid axis, growth hormone and growth factor insulin type I (IGF-I) following cardiac surgery, their timing and the possible causes, we studied 50 patients, without thyroid disease. All patient underwent programmed cardiac surgery (PCS), half were coronary artery bypass graft surgery and half valvular. Hormones were determined in the previous 48h, in the first 24 hours following the procedure and by the 5th day. **Method:** Up to 70% of our cases were males, with a mean age of 59.6 years old, the body mass index was 26,2 and ejection fraction 56 + 16 on average. The total surgery duration was divided in subsets: anesthesia 240 minutes, cardiopulmonary bypass 66 minutes, myocardial ischaemia 111 minutes on average. The mean time to extubation was 14 hours and the ICU stay was 3.4 + 1.2 days. Intra aortic balloon was used in 4%. **Results:** GH increased significantly in the first 24 hours, decreasing to baseline values by the 5th day. On the other hand IGF-I remained unchanged. None of the studied parameters showed statistic significance regarding hormonal differences, only cardiopulmonary bypass duration showed a statistic trend. **Conclusions:** A temporary hormonal downfall of thyroid hormones occurs following cardiac surgery; functional hypothyroidism could be related to protection mechanisms responding to surgical injury. Growth hormone responds to cardiac surgery as a stress hormone, whereas IGF-I remains unchanged even though it's expression is mediated by GH.

HORMONE LEVELS BEFORE AND AFTER CARDIAC SURGERY

Variable	Baseline	24 hours	5th day
TSH (μ/ml)	2.24	1.12 (p < 0.05)	2.56
T3 (ng/dl)	0.85	0.45 (p < 0.05)	0.70
Free T3 (ng/dl)	4.88	3.95 (p < 0.05)	4.44 (p < 0.05)
Inverse T3 (ng/dl)	30.51	55.29 (p < 0.05)	37.18 (p < 0.05)
T4 (μ/dl)	83.60	63.12 (p < 0.05)	79.09
Free T4 (ng/dl)	1.34	1.13 (p < 0.05)	1.33
GH (ng/ml)	1.64	7.8 (p < 0.05)	2.5
IGF1 (ng/ml)	189.87	180.60	167.0

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Plasmatic levels of apolipoprotein in young subjects without cardiovascular disease. Effects of age, gender and body mass index.

D. A. Siniawski[1], W.M. Masson, P. Sorroche, J. Krauss, A.M. Cagide. *[1]Hospital Italiano de Buenos Aires [2]Hospital Italiano de Buenos Aires [3]Hospital Italiano de Buenos Aires [4]Hospital Italiano de Buenos Aires [5]Hospital Italiano de Buenos Aires*

Background: Cardiovascular risk scores have low sensibility to stratify young people. Plasmatic levels of apolipoproteins (AL) could increase this sensibility. The distribution of AL levels is unknown in subjects less than 50 years old in our region. **Objetive:** Establish the distribution of AL levels according to age, gender and body weight in a healthy population <50 years old. **Methods:** The apolipoprotein A1 (A) and apolipoprotein B (B) levels were determinated by kinetic nephelometry in samples obtained of blood givers less than 50 years old. The distribution according to sex, age (subgroups <30, 30–40, >40 years old) and body mass index (BMI) was analyzed. **Results:** 167 patients were recruited. Mean age±SD: 33±9 years, 68% men (M). Mean BMI±SD: 25.05±4.1. 56% of the population had BMI <25 (22.2±2) and 44% BMI ≥25 (28.6±3.2). The levels in the population (mean±SD) were: A 136±28mg/dL, B 89±24mg/dL, B/A ratio 0,67±21. The levels of A were higher in women (W) than in M in the global analysis (152±34mg/dL vs 128±21mg/dL,p<0.0001) and in the groups of age(less 30 years: 149±39mg/dL vs 123±18mg/dL, p<0.005; 30–40 years: 160±36mg/dL vs 132±24mg/dL, p=0.003; upper 40 years: 155±27mg/dL vs 133±20mg/dL, p=0.0001). The levels of B were lower in W than in M (global: 79±19mg/dL vs 93±24mg/dL, p=0.005; group <30 years: 75±22mg/dL vs 81±23mg/dL,p=0.3; group 30–40 years: 81±12mg/dL vs 101±19mg/dL, p<0,005; group >40 years: 89±21mg/dL vs 101±26mg/dL, p<0.005). The B/A ratio was higher in M than in W (0,73±0.21 vs 0,53±0.13, p<0,0001). Subjects with BMI <25 had higher A levels (140±33 vs 130±22mg/dL, p=0.02) and lower B levels than patients with a BMI >25 (83.2±23 vs 95.5±23mg/dL, p<0.005). **Conclusion:** In this population,W had lower levels of B, smaller B/A ratio, and higher concentrations of A levels than M, in all subgroups of age. The BMI affected the levels of apolipoproteins. These results could be used to improve the risk stratification in young people.

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Achievement of Treatment Targets of Cardiovascular Risk Factors in a Pilot Secondary Prevention Program In Chile

M. Acevedo[1], V. Krämer[1], G. Chamorro[1], G. Krogh[1], A. Muñoz[1], R. Corbalan[1]. *[1]Pontificia Universidad Católica de Chile., Santiago, Chile*

Background: Secondary prevention programs have improved the achievement of treatment goals of cardiovascular risk factors (RF) and decreased cardiovascular events. However, scarce data are available about the global achievement of goals, considering all the RF together. **Objectives:** To determine the achievement of treatment goals for both individual RF as well as a combined endpoint of all the RF together in a pilot secondary prevention program. **Methods:** Prospective study in patients with definite atherosclerotic disease, followed in a university hospital's secondary prevention program between June 2006 and January 2007. One day before and 6 months after hospital discharge, cardiovascular RF data, pharmacological treatment, systolic and diastolic blood pressure, BMI, waist, lipid profile, glycemia and HbA1C

in diabetics were registered. Treatment goals were defined according to AHA/ACC guidelines for secondary prevention. We determined both the achievement of treatment targets for individual RF and the combined endpoint of all RF together. **Results:** 170 patients (16% women, age 60 ± 10yo). Achievement of goals for individual RF at baseline and 6 months are shown in the table. Only 14% of the subjects achieved the combined endpoint target for all RF. **Conclusions:** This study shows a good achievement of treatment goals of individual cardiovascular RF. However, the global achievement of the combined endpoint was extremely low. These results suggest the importance of a global management of RF.

Target	Achievement Baseline (%)	Achievement 6 months (%)	p
BP <140/90	87%	78%	< 0.0001
LDL < 100	41%	81%	< 0.0001
No Tobacco	69%	88%	< 0.0001
BMI < 25	15%	22%	< 0.0001
Exercise ≥3 times/week	10%	33%	0.022

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ANTIPHOSPHOLIPID SYNDROME AND HYPERTENSIVE DISORDERS OF PREGNANCY (preliminary results).

L. S. Voto[1], M.J. Mattioli[1], R. Zarate[1], G.N. Voto[1], B.E. Grand[1]. *[1]Maternal-Infant Department - Obstetrics Division. Juan A. Fernandez Hospital. Buenos Aires, Argentina.*

Introduction: There are not available prospective studies to determine the contribution of Antiphospholipid Syndrome (APS) to the overall problem of preterm birth from hypertensive disorders of pregnancy (HDP). **Objectives:** 1- To asses the prevalence APS in HDP and its relationship with perinatal outcome. 2- To asses the perinatal outcome and hypertension recurrence in a next pregnancy (pg). **Design and setting:** Prospective observational. Public Hospital **Material and methods:** Laboratory studies: Lupus Anticoagulant (LAC) was done according to the recommendations of the International Society of Thrombosis and Haemostasis. Solid phase assays (ELISA) was used to detect anticardiolipin antibodies (aCA) and anti-β2 ƒnglycoprotein Iƒv (a-β2GPI) Patients (p): During a period of 3 years, 190p were admitted to a Thrombophilia and Reproduction Working Team; 67% (129/190p) fulfilled clinical criteria of APS and 18 % (24/129) with HDP. Eighteen patients with HDP were tested for APS and was confirmed in 33% (6/18) (Table 1). **Evolution:** A total of 9 new pregnancies of the originally group with HDP(9/18) were prospectively followed-up (total=9 p APS(-):6; APS(+):3). All patients were treated with folic acid 5 mg and low dose aspirin. The 3 patients with APS received low molecular weight heparin (LMWH) (40mg/day), they all have history of fetal death associated with HDP (Table 2). **Results:** The prevalence of APS in women with HDP was 33%. In a next pg nine patients were followed in a strict group by obstetric physician and hematologist. A 83% live birth rate was achieved. In the APS(-) group there was one abortion, no IUGR but three women have a mild recurrence of hypertension. In the group with APS there was neither abortion nor hypertension recurrence, but the perinatal outcome was worst. **Comments and conclusion:** 1- The prevalence of APS in the group of women with HDP was 33%. 2-A good live birth rate was achieved in both groups. In the group with APS, that received LMWH+ aspirin there was no recurrence of hypertension, but with worse perinatal outcome. 3- Whether the treatment with LMWH could benefit women with previous HDP needs to be confirmed in large scale prospective randomised trials.

TABLE 1 - PATIENTS WITH HYPERTENSIVE DISORDERS OF PREGNANCY WITH AND WITHOUT APS: BASAL DATA

Hypertensive disorders of pregnancy			Diagnosis of HDP		Outcome (total of pg n=25)		Complications		
APS	n=	pg	Week	Rnage	Stillbirth	Viable	IUGR	Abruptio Placentae	HELLP
(-)	12	15	30	24–38	7	8	8	1	1
(+)	6	10	30	20–36	8	2	2	1	1

TABLE 2 - OUTCOME AND PERINATAL RESULTS IN A NEXT PREGNANCY

Hypertensive disorders of pregnancy			Treatment		Outcome		Complications	
APS	n=	pg	LDA	LMWH	Weight gr (range)	gestational age	Abortion	HDP
(-)	6	6	+	-	3050 (2400–3700)	37.3 (35–39)	1	3
(+)	3	3	+	+	2553 (1960–2900)	35 (33–38)	No	No

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Elevated augmentation index but not hsCRP could be related to arterial damage in patients with rheumatoid arthritis

A. Cypiene[1], A. Laucevicius[2], J. Dadoniene[1], A. Venalis[1], Z. Petrulioniene[2], M. Kovaite[2], J. Badariene[2], V. Dzenkeviciute[2], L. Ryliskyte[2]. *[1]Institute of Experimental and Clinical Medicine, Vilnius University, Lithuania [2]Clinic of Heart Diseases, Vilnius University, Centre of Cardiology and Angiology*

Purpose: Rheumatoid arthritis (RA) is associated with premature atherosclerosis. Chronic inflammation may impair arterial function and lead to the increase of their stiffness. However, it is unknown what impairment of arterial stiffness is found in case of RA and is it influenced by high level of C reactive protein (CRP). The aim of our study was to assess whether RA and high level of C-reactive protein can influence arterial stiffness in patients with RA. **Methods:** We examined 68 consecutive RA patients (age 40.68±10.07 years) with moderate and high disease activity (DAS28 5.37±0.94) and 87 controls (age 38.10±8.69 years). The aortic augmentation index (Alx) was assessed noninvasively by applanation tonometry (Sphygmocor v.7.01, AtCor Medical). Blood chemistry was performed including high-sensitivity CRP (hsCRP). When analyzing the impact of hsCRP patients with RA were divided into two groups. The first group included patients with low inflammatory status (CRP<10 mg/L, n=24) meanwhile the second group included patients with high inflammatory status (CRP≥10 mg/L, n=44). **Results:** The comparison of means have shown that Alx (22.86±12.19 vs. 12.69±0.58, p<0.001) and hsCRP (33.84±43.8mg/l vs. 1.33±2.06mg/l, p<0.001) were significantly higher in RA patients. Multiple regression analysis has also revealed that the presence of rheumatoid arthritis is an independent predictor for Alx (R2=0.718, adjusted R2=0.707, p<0.001). Comparing Alx* values by Mann–Whitney test, there was no significant difference between low and high hsCRP inflammatory status groups (23.50 [18.00–29.00] vs. 25.50 [15.50–31.00], p = 0.672). * - median [interquartile range] is reported. **Conclusions:** RA is associated with premature increase of arterial stiffness. The presence of rheumatoid arthritis contributes to increased augmentation index values. The elevation of serum hsCRP is not related to the increase of systemic arterial stiffness in patients with RA.

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Autologous Bone-Marrow Mononuclear Cell Transplantation after Acute Myocardial Infarction:Comparison of Two Delivery Techniques

H. Dohmann[1], S.A Silva, R.C. Moreira, A Haddad, F.A. Tuche, A.S. Souza, C. Peixoto, R Verney, **M Amorin** , R Borojevick. *[1]Pro-Cardiaco Hospital [2]Pro-Cardiaco Hospital [3]Pro-Cardiaco Hospital [4]Pro-Cardiaco Hospital [5]Pro-Cardiaco Hospital [6]Pro-Cardiaco Hospital [7]Pro-Cardiaco Hospital [8]Pro-Cardiaco Hospital [9]Pro-Cardiaco Hospital [10]Universidade Federal do Estado do Rio de Janeiro*

Objectives: To investigate safety and feasibility of autologous bone-marrow mononuclear cells (BMMNC) transplantation in ST elevation myocardial infarction (STEMI), comparing anterograde intra-coronary artery (ICA) delivery with retrograde intra-coronary vein (ICV) approach. **Methods:** Open labeled, randomized controlled trial of 30 patients admitted with STEMI. Patients were enrolled if they (1) were successfully reperfused within 24 hours from symptoms onset and (2) had infarct size larger than 10% of left ventricle (LV). One hundred million BMMNC were injected in the infarct-related artery (intra-arterial group) or vein (intra-venous group) and 1% was labeled with Tc99m-hexamethylpropylenamineoxime. Cells distribution was evaluated 4 and 24 hours after injection. Baseline exams (EKG; echocardiogram; MIBI SPECT; radionuclide ventriculography and cardiac MRI) were all performed before cell transfer and after 3 and 6 months. All the treated patients repeated coronary angiography after 3 months. **Results:** Thirty patients (57±11 years, 70% males) were randomly assigned into ICA (n=14); ICV (n=10) or control (n=6) group. No serious adverse events related to the procedure were observed. Early and late retention of radiolabeled cells was higher in the ICA than in the ICV group, independently of microcirculation obstruction. There was no difference in LV ejection fraction (EF) either LV dimensions among groups. However, an increase of EF was observed in the ICA group (p=0.02). **Conclusion:** Injection procedures through anterograde and retrograde approaches seem to be feasible and safe. BMMNC retention by damaged heart tissue was apparently higher when the anterograde approach was used. Further studies are required to confirm these initial data.

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IMPLEMENTATION OF EMERGENCY-BASED THROMBOLYSIS; AN ACHIEVABLE OPTION FOR RURAL HOSPITALS IN DEVELOPING COUNTRIES.

S. Azarisman[1], H. Ngow[1], P. Melor[1], A. Jamalludin[1], A. Fauzi[1], S. Sapari[2], K. Khairi[2], S. Noorfaizan[3], M. Oteh[3]. *[1]INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA [2]HOSPITAL TENGKU AMPUAN AFZAN KUANTAN [3]HOSPITAL UNIVERSITI KEBANGSAAN MALAYSIA*

Background In developing countries such as Malaysia, the primary mode for revascularization is via thrombolytic therapy. This is only effective when instituted within a small time window and pre-hospital delay is a major concern. In a region where the mean house-to-door times can be as long as 8.5 hours, there is an urgent need to reduce the door-to-needle times. **Methods** Emergency-based thrombolysis was initiated at Hospital Tengku Ampuan Afzan Kuantan, a 600-bed regional hospital in Malaysia. One hundred and thirty three patients with acute ST elevation myocardial infarction patients were screened. 39 patients were recruited in the 4 months prior to the implementation date and 94 patients were recruited after. The mean house-to-door, door-to-needle times were recorded. **Results** The majority of patients were male 88.7%, with a mean age of 56.4 ± 10.3 years. The median presentation time (house-to-door) was 117.50 minutes before and 136.00 minutes after (p = 0.213, Mann-Whitney U) minutes. The median door-to-needle time was 100.00 minutes before and 50.00 minutes after (p = 0.031). The mortality rates were 12.8% before and 11.70% (p=0.87, Fisher exact test) after implementation of Emergency-based thrombolysis. **Conclusion** Implementation of Emergency-based thrombolysis has markedly improved the door-to-needle times and resulted in a trend towards reduced mortality rates in acute ST-elevation myocardial infarction. **Keywords:** Pre-hospital, acute myocardial infarct, ST elevation, door-to-needle time.

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COMPLIANCE WITH THE MALAYSIAN NATIONAL CLINICAL PRACTICE GUIDELINES ON THE ADMINISTRATION OF THROMBOLYTIC AGENTS IN ACUTE ST-ELEVATION MYOCARDIAL INFARCTION

S. Azarisman[1], H. Ngow[1], P. Melor[1], A. Jamalludin[1], A. Fauzi[1], S. Sapari[2], K. Khairi[2], S. Noorfaizan[3], M. Oteh[3]. *[1]INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA [2]HOSPITAL TENGKU AMPUAN AFZAN KUANTAN [3]HOSPITAL UNIVERSITI KEBANGSAAN MALAYSIA*

Background In developing countries such as Malaysia, the primary mode for revascularization is via thrombolytic therapy. In 2001, the 1st Edition of the Malaysian Clinical Practice Guideline

advised the door-to-needle time of 60 minutes. This has been revised in the 2nd Edition (2007) to 30 minutes. This study aims to evaluate the mean door-to-needle times following the implementation of Emergency Department-based thrombolysis. **Methods** Accident and Emergency-based (A+E) thrombolysis was initiated at Hospital Tengku Ampuan Afzan Kuantan, Malaysia. Ninety four patients with acute ST elevation myocardial infarction patients were screened and 75 patients were recruited. The mean house-to-door, door-to-needle times were recorded. **Results** The majority of patients were male (89.3%), of Malay ethnicity (84%), presenting with anterior MI (69.3%) with a mean age of 57.0 ± 9.52 years. The mean door-to-needle time was 80.54 ± 84.8 minutes (116.46 ± 109.00 minutes before the implementation). Only 20% achieved the 30-minute door-to-needle time and only 65.3% achieved the 60 minute door-to-needle time. The reasons for late thrombolysis were quoted as late referrals from A+E (50%), hypertensive emergency (22%), resuscitation (17%) and others (11%). **Conclusion** Implementation of Emergency-based thrombolysis has improved the door-to-needle times but more staff education and training is required due to the high rate of late A+E identification and late referrals. **Keywords:** Pre-hospital, acute myocardial infarct, ST elevation, door-to-needle time.

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RISK FACTOR PROFILE OF PATIENTS PRESENTING WITH ACUTE ST-ELEVATION MYOCARDIAL INFARCTION TO A RURAL HOSPITAL IN MALAYSIA

S. Azarisman[1], H. Ngow[1], P. Melor[1], A. Jamalludin[1], A. Fauzi[1], S. Sapari[2], K. Khairi[2], S. Noorfaizan[3], M. Oteh[3]. *[1]INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA [2]HOSPITAL TENGKU AMPUAN AFZAN KUANTAN [3]HOSPITAL UNIVERSITI KEBANGSAAN MALAYSIA*

Background Cardiovascular disease is one of the most important causes of death in Malaysia and the rate is on the increase. The major contributor to the increasing prevalence of cardiovascular disease is the rise in the risk factor prevalence such as hypertension, diabetes mellitus and hypercholesterolaemia. These modifiable risk factors could be the key in halting this trend. **Methods** One hundred and thirty three consecutive patients presenting with acute ST elevation myocardial infarction to the coronary care unit of Hospital Tengku Ampuan Afzan, Kuantan, Malaysia were enrolled into a prospective observational study. **Results** The majority of patients were male 88.7%, presented with anterior or antero-septal myocardial infarct 66.9% with a mean age of 56.4 ± 10.3 years. 72.9% were smokers, 41.3% had hypertension, 30.8% had diabetes and 27.0% had hyperlipidaemia. The mean serum Creatinine 138.1 ± 103.7 mmol/L, fasting blood sugar 7.95 ± 3.98 mmol/L, total cholesterol 5.74 ± 1.40 mmol/L, low-density lipoprotein 3.74 ± 1.22 mmol/L and high-density lipoprotein 1.19 ± 0.63 mmol/L. **Conclusion** A significant majority of patients were male aged in the mid 50's, smokers, and presented with acute anterior or anteroseptal myocardial infarction. A significant minority had a history of hypertension, diabetes mellitus or hyperlipidaemia either alone or in combination. **Keywords:** Risk factor, acute myocardial infarct, ST elevation, epidemiology.

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SURGICAL THERAPY FOR ISCHEMIC HEART FAILURE: PREDICTORS OF MORTALITY AT LATE FOLLOW-UP

I. Butkuviene[1], L. Ivaskeviciene[1], G. Nogiene[1], J. Zidanaviciute[2]. *[1]VILNIUS UNIVERSITY HEART SURGERY CENTER [2]VILNIUS GEDIMINAS TECHNICAL UNIVERSITY*

Background. Few date exist regarding the direct relationship between QRS duration (QRSd) alone and survival. Some studies have demonstrated that only left bundle branch block was associated with worse survival, others have proposed that QRSd≥120ms is an independent predictor of increased mortality in pts with heart failure. Prognostic implications of ischemic mitral valve regurgitation (IMVR) presence and degree are poorly defined and controversial. **Objectives.** Our objectives were to report long term outcomes after surgical ventricular restoration plus CABG and to report predictors of mortality at late follow-up. **Methods.** We performed a retrospective analysis to examine association between preoperative LVEF, QRSd ≥110 ms, IMVR and survival at late follow-up period (mean 23.8±19, max 60 moths). We evaluated the resting baseline standard surface ECG in 138 consecutive pts (mean LVEF 32.8±7.2%, mean NYHA class 3.5±0.6) undergoing CABG plus LV reconstruction procedure. All of these pts underwent EchoCG and angiographic assessment of LV function and IMVR degree. For exploring the relationship between survival and some explanatory variables Cox regression was used. A value of ≤0.05 was considered significant. Statistical analysis was performed with SAS 9.1. **Results.** Thirty-day mortality was 6.4%, actuarial survival rates at 1, 2, 3, 4 and 5 years were 90.7±2.6%, 83.7±3.6%, 80.6±4.1%, 77.9±4.8% and 69.5±9.2%, respectively. Mean LVEF increased from 32.0±8.8% to 37.5±7.9% at 1 year and to 36.2±6.8% at 5 years after operation (p<0,001). NYHA class improved from 3.4±0.5 to 2.3±0.4 at 1 year and 2.2±0.4 at 5 years follow-up (p<0,01). Poor 5 years survival (36.0±2.6%) was in pts with preoperative LVEF <30% and good (89.1±4.4%) in pts with LVEF≥30% (p=0.006). Preoperative moderate IMVR was presented in 39 (28.9%) and severe in 6 (4.5%) pts. IMVR alone does not significantly increased mortality risk at late follow-up (p=0.133). Prolonged QRSd (≥120ms) significantly increased mortality: RC 1.39, risk (95% CI) 4.02 (1.41; 11.45), p=0.009. **Conclusions** Patients with ischemic cardiomyopathy with severe LV dysfunction may benefit from LV reconstruction and CABG (5 year survival 70% with improved NYHA class and LVEF). QRSd ≥120ms predicts poor outcome after CABG and LV restorative surgery in patients with ischemic LV dysfunction.

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ARTERIAL HYPERTENSION MULTICENTRIC STUDY IN TYPE 2 DIABETIC PATIENTS

M. L. Ruiz Morosini[1], E. Lopez Gonzalez, A. Garcia, A. Luongo, C. Gonzalez, G. Burlando, M. Ruiz. *[1]Graduates Commitee Arg Society of Diabetes [2]Hypertension Commitee Arg Soc of Diabetes [3]Hypertension Commitee Arg Soc of Diabetes [4]Hypertension Commitee Arg Soc of Diabetes [5]Argentine Society of Diabetes [6]Hypertension Commitee Arg Soc of Diabetes [7]Argentine Society of Diabetes*

Aims: To evaluate the frequency of arterial hypertension (AH) in patients with Diabetes Mellitus type 2 (DM2) treated by specialists in Diabetes and Nutrition and its association with clinical, anthropometric, and laboratory parameters, with chronic diabetes related complications and treatment description. **Methods and Materials:** A random survey of patients suffering from DM2 was carried out in 43 Specialized Diabetes Centers in Argentina. The evaluation included anthropometric measures and laboratory together with the antihypertensive treatment the patients received. We defined high blood pressure in patients with T.S. ≥ 130 mmHg y/o T.D. ≥ 85 mmHg, administration of antihypertensive agents or any combination of these. Statistical analysis: Chi2, t de Student o Mann-Whitney, Spearman, Kaplan-Meier correlation, Multiple Logistic Regression (Software: CSS/Statistical, 1993). **Results:** 1795 patients were included (ages ranging from: 66.77±10.0), F: 48.0% M: 52.0%. The arterial hypertension frequency 84.57% (IC 95%: 82.9–86.3). The AH preceded the onset of the DM: duration of DM2: 10.8±8.6 years and of AH, 11.2 ± 8.6 years, p < 0.001. The BMI of the AH group was 31.3 ±5.82 kg/m2, while the normotensive group showed a BMI of 28.55 ± 4.93 kg/m2 (p < 0.001). The waist circumference of the AH group was 103.7 ± 13.3 cm, whereas the one that belonged to the normotensive group was 96.2 ± 12.9 cm (p < 0.001). The triglyceride value of the AH group was higher than that of the normotensive group (159.9 ± 95.3 mg/dL vs 140.5 ± 79.1 mg/dL (p<0.01)) and the HDLc values of the AH group were 47.2 ± 12.2 mg/dL while those of the normotensive group were 49.49 ± 13.7 mg/dL (p<0.01). There was not a significant difference as regards the HbA1c level. Hypertension treatment: diuretics 30%, IECA: 70.5%, ARA II: 21.5%. Drug Combination: 1 Drug: 42.3%, 2 drug: 32.5%, 3 or more drugs 25.2%. DM Treatment: insulin was part of the treatment in 33.1% of the cases. The average HbA1c of the sample was 7.27%. 72.8% underwent treatment with AAS. By using Multiple Logistic Regression as a discriminant function the existence of AH was associated with age, coronary disease and nephropathy p<0.001. **Conclusions:** The frequency of the AH was 84.5%. The existence of AH correlated the waist circumference p<0.001, with BMI p<0.001, with higher triglycerides p<0.01 and lower HDLc p<0.01. 42.3% was being treated with just one antihypertensive drug. 27.2% was not under treatment with AAS, in spite of being a high risk population. In the multiple regression analysis, the AH was associated with age, coronary disease and nephropathy p<0.001.

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MYOCARDIAL PERFUSION SPECT WITH DOUBLE DRUG NEED.

V. Martire[1,2], D. Portillo[2], J.M Dominguez[2], E. Pis Diez[1]. *[1]Inst. Médico Platense, La Plata, Argentina [2]Hospital Gonnet, Argentina*

Objective: Assess the pharmacological effect of Dipiridamol (DIP), and Adenosine (ADE), as a pharmacological stress, in myocardial perfusion studies (SPECT) in a selected sample of patients (Pts). **Material:** 64 patients were studied, 40 men and 24 women, with a mean age of 66±12 years, in 40/64 patients as a diagnosis test, in 18/64 as a risk stratification and 6/64 patients for a pre-surgical non-cardiac vascular surgery. **Method:** Protocol: firstly a manual DIP IV injection in dosis of 6 mg/m2 of body surface area for an administration time of 90–120 seconds. Then an ADE IV manual injection in dosis of 3 mgs/m2 of body surface area. Two minutes after the latter: administration of the radio active drug. Haemodynamic parameters and ECG St-t were controlled during the intervals. Images were taken and processed in a rotating gamma camera, data was calculated and quantified with the Graph Pad Prism program. All patients had a cinecoronariography diagnosis. **Results:** 44/64 pts had new (reversible) perfusion defects. 20/64 pts did not have new defects (normal or necrotic). Sensitivity (S) and specificity (E) was of 88% and 88 % respectively for injuries angiographically larger than 70 %. and 79% and 87% respectively for injuries angiographically moderate (between 50 and 70%). There were no significant haemodynamic changes in any patient and headache was the most frequent adverse event (56 %). **Conclusion:** In this initial sample of patients Dipiridamol and Adenosine combination as a model of synergism of pharmacological potentialisation showed an excellent S and E in severe as well as in moderate injuries. Moreover, the use of an electronic or mechanical system for its administration is avoided, thus reducing costs.

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SPECT USEFULNESS IN PATIENTS WITH DOUBTFUL ERGOMETRY DUE TO ST-T DEPRESSION

V. Martire[1], M. Cantos[1], M. Pilato[1], S. Pilato[1], C. Vietti[1], S. Vogogna[1]. *[1]Sanatorio Juncal, Temperley, Argentina.*

Objective: assess the usefulness of SPECT myocardial perfusion studies in patients derived as they present an ergometric test of 12 doubtful derivations due to St-t segment depression without angina. **Material:** From November 2001 until December 2006, 417 patients (pts) were studied consecutively, 220 men, 197 women, with a mean age of 61±10 years, derived to the nuclear medicine service as they showed in the graduated ergometric test, an st t segment depression between 1–3 mm, for diagnosis or risk stratification in myocardial coronary disease. 86 pts had a registered previous myocardial infarction, 89 pts: 1 coroanry risk factor (CRF), 195 pts: 2 CRF, 55 pts more than 2 CRF, 78 pts with no CRF awareness. **Method:** All patients underwent a functional study with a 2-separated-day protocol with sestamibi Tc99 at rest and during exercise, according to conventional protocols. **Results:**Of the 417 patients studied, 117

pts (28%) had an abnormal perfusion study (new ischemic area) of which 62 (14,8% of the total sample) were of high ischemic risk. **Conclusion:** Functional assessment by means of myocardial perfusion still remains as a useful tool when defining patient's risk with Graduated Ergometric Test of 12 doubtful derivations due to st t.

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INFLUENCE OF THE COLLATERAL CORONARY CIRCULATION IN THE MODEL OF DOUBLE ERGOMETRIC STRESS TEST

V. Martire[1], A. Arrastia[1], S. Gonzalez[1], D. Portillo[1], J.M Dominguez[1]. [1]*Hospital Gonnet, Argentina*

Objetive : Trough the model ischemic induction with the double ergometric test model (ET), to evaluate the significance that the presence or absence of the coronary collateral circulation (CCC) has in the contemporary arteriography. **Material :** 32 patients (pts) 21 m 11 f, of middle age of 62 +/- 8 years, with clinic diagnostic of stable angina, were studied successively without medication at the moment of the test, all of them with abnormal coronary arteriography in +/- 3 months of the test (2 or more principal vessel disease > 70 % of stenosis) 15 of them did not have visible CCC ; in 12 it was adequate and in 5, inadequate. **Method :** 2 successive ergometric test were carried out in all pts with a 15 minutes interval between both and observing the reaction and response according to CCC in each case. **Results :** 29 of 32 pts significantly improved the studied parameters, 3 did not modify. Some can be tabulated :

Parameters	first ET	second ET	p value
Excercise time (min):	10.7 ± 2.5	12.8 ± 2.9	(p:<0.01)
st depression (mm):	2.6 ± 0.8	1.3 ± 0.8	(p:<0,01)
Threshold time (min):	6.7 ± 1,8	11 ± 2,9	(p<0.001)
st/hr:	.018 ± .008	.011 ± .006	(p<0,001)

st/hr= st depression/heart rate relation.

When de CCC was analized, the presence (adequate or inadequate), or absence of it did not have relation to the response of ET. **Conclusion :** The anatomic state of the CCC does not have influence on the response in this model of stress test; the 91 % of this sample improved the threshold in the second test.

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Clinical outcomes in patient with idiopathic dilated cardiomyopathy or coronary cardiomyopathy and an implantable cardoverter defibrillator. Are they different?

R Aguayo , S Diangelo, W De Andrade, E Costa, L Azocar, O Macz, R Ferreyra, I Romero, J Maloney, C Muratore. [1]*Hospital San Juan de Dios, Chile* [2]*Instituto Cardiovascular de Rosario, Argentina* [3]*WGV Clínica, Brasil* [4]*Cardioritmo, Brasil* [5]*Centro Medico Integral, Venezuela* [6]*Hospital Nuestra Sra del Pilar, Guatemala* [7]*Sanatorio Trinidad Mitre* [8]*Medtronic Latin America* [9]*Medtronic Latin America* [10]*Medtronic Latin America*

A minority of patients receiving an implantable cardioverter-defibrillator (ICD) presented with idiopathic dilated cardiomyopathy (IDC). Whether or not this population can be extrapolated to coronary artery disease (CAD) patients remains uncertain. **Purpose:** To compare clinical characteristics at implant and follow-up in patients with IDC and CAD in the ICD Registry Latin America. **Methods:** Analysis of all 507 patients included in the ICD Registry Latin was conducted. 116 IDC patients and 221 CAD patients were included. **Results:** Patients with IDC were younger (59±14 vs 65±10 years old; p<0.003), had higher left ventricular end diastolic diameter (66±10mm vs. 61±9mm; p<0.001), and were more likely to receive biventricular pacing (43% vs. 22%; p < 0.0001). Patients with CAD had a higher incidence of NYHA functional class I/II (74% vs. 61%; p<0.01) and were more likely to be treated with Statins (63% vs 24%; p<0.0001). More IDC patients are treated with Amiodarone (44% vs 33%; p=0.058). There was no significant difference in mean EF (28±11 % in both populations), intra-ventricular conduction disturbances and other drugs treatments at implant. Follow-up duration was 12±7 months for IDC patients and 11±7 months for CAD patients. Moreover, appropriate therapies (18% IDC patients, 13% CAD patients; p=NS), hospitalization (12% IDC patients, 17% CAD patients; p=NS) and total mortality (3.4% IDC patients, 5.4% CAD patients; p=NS) were not significantly different.. **Conclusions:** Short-term follow-up was similar in patients with IDC and CAD despite significant differences in pre-implant clinical characteristics.

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PHARMACOLOGICAL EFFECTS OF INAMRINONE LACTATE IN PATIENTS WITH REVERSIBLE PERFUSION DEFECTS INDUCED BY DIPYRIDAMOLE

V. Martire[1,2], D. Portillo[1], J.M Dominguez[1], A. Kavata[1]. [1]*Hospital Gonnet, Argentina.* [2]*Instituto Médico Platense, La Plata, Argentina.*

Objective : Evaluate Inamrinone Lactate (IL) pharmacological effects on reversible defects induced by Dipyridamole (Dp), 210-thalium SPECT study, at a very early post-administration stage (within 40 minutes). **Material:** 22 patients 61 ± 5 mean age (p), 16 men, 6 women, were studied. Patients with no previous heart infarction, all of them with myocardic ischemic clinical evidence who had been prescribed a study of perfusion with 201-thalium SPECT with Dipyridamole. 13 patients with pre-test diagnosed cinecoronariograhy. 14 patients belong to the Inamrinone group, and 8 to the placebo one. **Method:** All patients underwent perfusion study with Dipyridamole (initial image stress), early second image (within 40 minutes), including the administration of 1 mg/kg/dose of IL or placebo (Pb), (PI), image was taken 15 minutes after the double-blind pharmacological injection,, and conventional 4-hour redistribution (RD), 17 segments were analysed per patient in each procedure (1-Stress with Dp, 2-with PI, and 3-after 4 hour RD). T test for comparing treatments with rejection of null hypothesis with a value of P <.05. **Results:**

Assignment:	S. Studied.	S.involved with Dp.	S. involved with (PI)	S. involved at RD 4 hs
Group Placebo:	136	56	55 (p=NS)	17
Group Inamrinone:	238	106	104 (p=NS)	22

S= Segments, PI= Pharmacological Injection (IL or Pb), RD=redistribution.

Conclusion : Inamrinone Lactate did not provide any improvement evidence on the dipyiridamole segments involved, showing that in cases of extreme coronary vasodilation it does not have any effect on this phenomena.

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Implantable Cardioverter Defibrillator Therapy in Patients with Chronic Chagas' Cardiomyopathy: comparison with Ischemic Cardiomyopathy.

L Aguinaga , C Muratore, A Malan, L Batista, G Maid, J Escudero, M Lanzotti, P Chiale, J Maloney. [1]*CPC, Argentina* [2]*Medtronic Latin America* [3]*Santa Casa de Goiana, Brasil* [4]*Hospital Sao Salvador, Brasil* [5]*Hospital Italiano Bs As, Argentina* [6]*Hospital Carlos Arevalo, Venezuela* [7]*Sanatorio Británico de Rosario Argentina* [8]*Hospital Ramos Mejia, Argentina* [9]*Medtronic Latin America*

Chagas' disease (CHD) is an endemic parasitic disease, that affects the vast South American region. It frequently leads to a chronic dilated nonischemic cardiomyopathy. Benefits from implantable cardioverter defibrillator (ICD) therapy in ischemic cardiomyopathy (ICM) has been previously reported, however few studies have compared both populations. **Purpose:** To compare the clinical characteristics at implant and at follow-up in patients with CHD and with ICM in the ICD Registry Latin America. **Methods** Eighty nine Chagasic patients were compared to 221 coronary patients undergoing ICD implantation. All patients had ICD Class I indications. **Results:** Patients with ICM were predominantly male (88% vs 72%; p<0.0007). Patients with CHD were younger (59±10 vs 65±10 years old; p<0.001), had less primary prevention indications (5,6% vs 55%; p<0.0001), more frequent intra-ventricular conduction disturbances (81% vs 46%; p<0,0001), had higher left ventricular ejection fraction (40±11% vs. 28±11%; p<0.0001). There were no statistically significant differences in functional class and left ventricular end diastolic diameter between both. Mean follow-up 11±7 months. Mortality rate was similar in both groups 5.4% in ICM and 5.6% in CHD. Appropriate therapy was also similar (13% vs 18%; p NS). Patients with ICM were more frequently hospitalized (17.2% vs 3.4%; p<0.001) **Conclusions:** Patients with Chagas' disease, compared with coronary artery disease patients, have different clinical characteristics leading to ICD implantation. Short-term follow-up is similar for both groups. ICM patients are more frequently hospitalized.

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Importance of Blood Flow and Calcification Degree in Results of Carotid Artery Stenting

L. Martinez Riera[1], E. Trucco[1], MJ.. Cabrera Ferreyra[1], F. Paoletti[1], H. Londero[1]. [1]*Sanatorio Allende*

Introduction: Results of the carotid angioplasty procedure depend on anatomical and functional variables. The significance of these variables is not yet well established. Better knowledge of the influence of different variables on results is important to know the procedure risks and to establish the correct method of intervention. **Objective:** To evaluate the relationship between two angiographic variables: blood flow and calcification degrees, with major cerebro-vascular complications (MCVC) during the hospital phase of the carotid artery stenting (CAS). **Material and Methods:** A prospective and longitudinal study of consecutive patients (p) subjected to CAS, between October 1997 and March 2006. This study analyzes 89 cases: 52.8% symptomatic; 74.1% male; 66.7 ± 8.3 years old. Variables of: blood flow in the internal carotid artery, classification (0-III), and calcification degree of the lesion (0-III) were analyzed. The following MCVC were considered: major stroke (AC>), minor (AC<) and death. Chi square test was used for statistical analysis, with a significance level of p<0.05. **Results:** 25 p. (28.1%) had slow flow (0-II); and 63 (71.9%) normal blood flow (III). Incidence of MCVC was at 8% (AC>4% and death 4%) in the group with diminished blood flow and 6.2% (AC<: 1.78%, AC>: 3.12% and death: 1.56%) with normal blood flow (III) (p=NS). Lesions with minor calcification had an incidence of MCVC of 5.36% (AC<: 1.78%, AC>: 1.78% and death: 1.78%) versus 9.09% (AC>:6.06% and death: 3.03%) with severe calcifications: 33 cases (p=NS). **Conclusions:** Patients with slow flow in the internal carotid artery and lesions with severe calcification had a higher incidence of MCVC. The differences were not statistically significant probably due to the number of cases analyzed. The angiographic variables: flow in the internal carotid artery and calcification degree of the lesion, could be important for establishing risk and prognosis of the CAS.

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Cardiac Myocyte Injury Can Result in Elevated Levels of Choline in Plasma.

M. Adamczyk[1], R.J Brashear[1], P.G Mattingly[1]. [1]*Abbott Laboratories*

Choline is a major constituent of cell membrane phospholipids that is released in the course of myocardial ischemia/reperfusion injury and as well as acute coronary syndrome. During reperfusion after global ischemia in the isolated rat heart model, choline was released in a biphasic manner [Bruhl, A., G. et al., Life Sci. 75 (2004): 1609–20]. Ischemic preconditioning blocked the second phase of choline efflux attributed to the degradation of phospholipids mediated by cytostolic phospholipase A2. Cardiac troponins were also released during reperfusion in a parallel fashion to choline in experimentally induced global ischemia both with and without ischemic preconditioning. Cardiac troponin-I is a sensitive marker for cardiac cell injury/death related to ischemia; elevation of above the 99th percentile of a normal population is used in the diagnosis of acute myocardial infarction (AMI). Cardiac troponins are also

detectable in congestive heart failure (CHF) but are not strongly indicative of ischemia or infarction origin. In this study, we measured the concentration of free choline in human plasma in three populations using our recently reported and validated chemiluminescent assay: normal blood donors (n = 161), cardiac troponin-I positive (AMI) (n = 161, cTnI >0.2 μg/L) and brain natriuretic peptide (BNP) positive plasma samples (CHF) (n = 200, BNP >500 pg/mL). In the normal blood donor population the median (25th–75th percentiles) choline concentration of 11.28 (9.73–13.13) μM was in agreement with the literature. In the troponin-positive plasma samples the median (25th–75th percentiles) choline concentration was 20.6 (14.60–26.80) μM. Nonparametric analysis of the two sample populations gave $p<0.0001$, indicating that the nearly two-fold difference in the median concentration of choline in the two sample populations was statistically significant. Further, 75% of the troponin positive samples exceeded 14.51 μM, the value at the 90th percentile of the normal blood donor population and 60% exceeded the 97.5th percentile (18.42 μM). In contrast, the median choline concentration of 11.66 (9.65–14.61) μM in brain natriuretic peptide (BNP) positive plasma samples was no different than the normal donor population. The overall increase in plasma choline concentration measured in the troponin-positive population was consistent with experimentally induced global ischemia in animal models in which both choline and troponin concentrations are elevated. The lack of an elevation of choline in BNP-positive population supports the hypothesis that the appearance of cardiac troponin in congestive heart failure is not of ischemic origin.

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Chest symptom classification is useful for identifying cardiac risk in diabetic patients

H. Fukuda[1], M. Moroi[1], R. Nakazato[1], T. Furuhashi[1], K. Sugi[1]. [1]*Toho University Ohashi Medical Center, Division of Cardiovascular Medicine*

Background: American diabetes association proposed cardiac testing for coronary artery disease (CAD) when typical or atypical chest pain, which includes dyspnea, fatigue, and gastrointestinal symptoms with exertion, is present. However, diabetic patients with CAD often have no typical chest pain. It is unclear whether diabetic patients with typical or atypical chest pain are at high risk and whether diabetic patients with non-cardiac chest pain, such as tingling, discomfort, tightness and so on regardless of efforts, are also candidates for CAD screening. The purpose of this study was to identify which characteristics of chest pain are at high risk. **Methods:** We enrolled consecutive 279 diabetic patients without prior CAD who underwent stress myocardial perfusion SPECT images. The patients were divided into 3 groups;1) asymptom as a reference group, 2) non-cardiac chest pain group, and 3) typical or atypical chest pain group. Follow up time was censored at the occurrence of cardiac death, acute coronary syndrome, congestive heart failure, and revascularization. **Results:** The prevalence of abnormal perfusion images was 19%, 16%, and 52% in asymptom, non-cardiac chest pain, and typical or atypical chest pain group, respectively. Median follow up time was 26 months. Cardiac event occurred in 51 patients. Multivariate logistic regression analysis showed that typical or atypical chest pain was significantly associated with abnormal perfusion image (odds ratio=4.6, 95%CI; 1.836–11.591, p=0.0011). Multivariate Cox hazard analysis also showed that typical or atypical chest pain was significantly associated with cardiac events (odds ratio=2.2, 95%CI; 1.037–4.781, p=0.0401). However, non-cardiac chest pain group had similar risk to asymptom group by logistic regression analysis for abnormal perfusion image (odds ratio=0.9, 95%CI; 0.408–2.102, p=0.8539) and Cox hazard analysis for cardiac events (odds ratio=1.3, 95%CI; 0.629–2.702, p=0.4751). **Conclusions:** Diabetic patients with typical or atypical chest pain are needed further examination and treatment. Meanwhile, diabetic patients with non-cardiac chest pain are needed similar clinical management to asymptomatic diabetic patients.

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DES, like BMS, do not influence systemic inflammatory status related with inflammatory cells after PCI in stable angina pectoris

T. Timurkaynak[1], S. A. Kocaman[1], A. Sahinarslan[1], A. Cengel[1]. [1]*Gazi University School of Medicine, Department of Cardiology, Ankara, TURKEY*

Background: DESs have been demonstrated to have an anti-inflammatory property compared with bare metal stents. Leukocytes are biologic marker of inflammation, have a crucial role in the development of inflammatory atherosclerotic processes. We aimed to investigate possible effect of DESs on systemic inflammatory status related with inflammatory cells after percutaneous coronary intervention in patients with stable angina pectoris. **Methods:** A total of 71 patients with stable angina pectoris underwent PCI and were enrolled in this study. BMS was implanted in 31 patients, 40 patients with DES (20 SES, 20 PES). Total and differential leukocyte counts were measured by an automated hematology analyzer at most a week before PCI and a month after in all study participants. **Results:** Total and differential leukocyte counts were similar in two groups before and after PCI. The counts of total leukocytes (7482±2114 and 7120±1655 cell/mm3 vs. 7136±1416 and 6977±1416 cell/mm3, p=0.359, p=0.579), neutrophils (4856±1473 and 4144±1173 cell/mm3 vs. 4205±1078 and 4115±995 cell/mm3, p=0.051, p=0.895), lymphocytes (2238±568 and 2203±768 cell/mm3 vs. 2112±590 and 2078±588 cell/mm3, p=0.319, p=0.335) and monocytes (578±199 and 603±230 cell/mm3 vs. 557±136 and 563±124 cell/mm3,p=0.578, p=0.313) were changed insignificantly after PCI in DES and BMS groups, respectively. This result remained as unchanged both in DES subgroup as well. **Conclusion:** Our study results demonstrate that total and differential leukocyte counts, which play important role in inflammation, were not changed after PCI with DES or BMS in patients with stable angina pectoris. In conclusion our study findings show that DESs or BMS do not influence systemic inflammatory status which independent factor for major adverse coronary events, after PCI in stable angina pectoris. **Keywords:** Drug eluting stent; Bare metal stent; Stable angina pectoris; Inflammatory cells

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HOSPITALIZATION OF PATIENTS WITH HEART FAILURE. ROLE OF THE PRECIPITATING FACTORS.

T. Livieratos[1], A. Tziovas[1], AL. Patsilinakos[1], PA Koustas[1], FO Kontari[1], GE Fagogenis[1], GE Kordosis[1], AT. Germanos[1]. [1]*General Hospital of Agrinio, Greece*

Heart failure (HF) remains a major public problem in the developed world despite the enormous progress in its diagnosis and treatment. It is one of the most common reasons for hospitalizations in adults. **Aim:** To delineate the epidemiological and clinical features of patients with heart failure and to identify factors predicting hospitalization and mortality. **Methods:** A total of 316 consecutive patients who were admitted with documented heart failure to a regional hospital in western Greece in a two years period between January 2005 and December 2006 were included in our study. We evaluated patient's demographic characteristics, etiological risk factors, subtypes of cardiac dysfunctions, comorbidity, decompesating factors and in hospital mortality rate. **Results:** One hundred and seventy-four (55%) were females. The percentage of HF patients who were >65 years of age was 83% in males and 93% in females. In cases undergoing echocardiography, left ventricular systolic dysfunction with EF ≤40% (LVSD) was observed in 52.6% of the patients and preserved of ventricular systolic function with EF ≥50% in 29.4%. Coronary artery disease and hypertension were 44.3% and 38.3% respectively the main etiological risk factors. Atrial fibrillation was recorded in 35.4% of the patients, diabetes diagnosed 27.8% and chronic obstructive pulmonary disease in 32.9%. Uncontrolled hypertension (27.2%), lack of compliance with medical and dietary treatment (25.4%), recurrent ischemic events (22.5%) and arrythmias (12%) were the most frequent precipitating factors. Infusion treatment with inotropic agents was necessary in 15%. Long-term therapy was changed in 47% of the patients. In hospital mortality was 8.3%. **Conclusions:** The patients were mainly elderly with coronary heart disease and hypertension to be the main etiological risk factors and with higher proportion of HF due to LVSD. Nearly half of precipitating factors can be prevented and should thus be avoidable with a better, more comprehensive control of the HF patient.

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CHARACTERISTICS, MANAGEMENT AND IN-HOSPITAL OUTCOMES OF PATIENTS WITH ACUTE CORONARY SYNDROMES.

TH. Livieratos[1], AR. Tziovas[1], AL. Patsilinakos[1], GE. Fagogenis[1], FO. Kontari[1], PA. Koustas[1], GE. Kordosis[1], AT. Germanos[1]. [1]*Department of Cardiology, General Hospital of Agrinio, Greece*

Acute coronary syndromes encompass myoacardial infarction with ST-segment elevation (STEMI), myocardial infarction without ST-segment elevation (NSTEMI) and unstable angina, all of which are major cause of morbidity and mortality worldwide. **Aim:** The aim of our study was to assess the epidemiological and clinical features of patients with acute coronary syndromes (ACS) in order to achieve both optimal planning of prevention and its effective management. **Methods:** Our study included 488 consecutive patients (330 males and 158 females) admitted with ACS to a regional general hospital in western Greece. Detailed medical history was taken and complete biochemical control was made. We assessed the prevalence of risk factors (hypertension, obesity, smoking habits, dyslipidemia, diabetes, a family history of premature coronary disease) and the exact time of symptoms onset, arrival to emergency room and initiation therapy was noted. Furthermore, medication during hospitalization and at discharge was registered as well as complications and outcomes. **Results:** Prevalence of cardiovascular risk factors was as follows: dyslipidemia 75%, hypertension 76%, smoking habits 45.3%, obesity 32%, diabetes mellitus 29.5% and 21.9% had a family history of premature coronary disease. Eighty-two of pts had at least two risk factors. The initial diagnosis was STEMI in 34%, NSTEMI in 30% and unstable angina (UA) in 36%. Among patients with STEMI, 57.2% received fibrinolytic therapy. The mean time from symptom onset to arrival was 215 min (67% of patients within 3h) and from arrival to fibrinolysis was 25 min. Use of heparins, anti-thrombotic drugs and GPIIb/IIIa inhibitors was 100%, 91.4% and 19.6%. B-blockers, ACE-I, ATII and statins received 85.5%, 70.3%, 27.7% and 83.8% respectively. Finally, nitrates received 66.4%. Secondary prevention included platelet antiaggregants, b-blockers, ACE-I and statins. In-hospital mortality was 5.7% and elderly >80 years had the worst outcome (nearly 20%). **Conclusions:** Our study shows that 8 out of 10 patients with ACS had at least two risk factors. Dyslipidemia and hypertension were the commonest risk factors. Unstable angina is more common than myocardial infarction. Over a half of patients with STEMI received fibrinolytic therapy. Secondary prevention included platelet antiaggregants, b-blockers, ACE-I and statins that is in accordance to existing guidelines. In-hospital mortality was higher in the elderly.

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The Effects of Nocturnal Dipping on Cardiovascular Outcome and Proteinuria In Essential Hypertensive Patients

Y. Selcoki[1], B. Uz[1], N. Baybek[1], A. Akcay[1], B. Eryonucu[1]. [1]*Fatih University, School of Medicine*

Background; Individuals who do not have a 10% to 20% reduction in blood pressure (BP) during the night are known as 'nondippers'. Non-dipping pattern in hypertensive patients has been shown to be associated with an excess of target organ damage and with an adverse outcome. The present study was designed to investigate the relationship of nocturnal BP pattern defined on the basis of the ambulatory blood pressure monitoring recording, with cardiac and renal target organ damage in a population of at least one year treated essential hypertensives. **Methods;** The present analysis involved 123 patients with treated essential hypertension attending the out-patient clinic of our centre. Each patient was subjected to the following procedures: (i) blood sampling for routine blood chemistry; (ii) spot urine for proteinuria; (iii) 24-h periods of ABPM; (iv) echocardiography. **Results;** Non-dipper patients

tended to be older (59 ± 10 versus 60 ± 8, 0.35). Body mass index was higher in the non-dippers (group II) (28 ± 4 versus 26 ± 4, p<0.05). The proteinuria in spot urine was significantly higher in group II (10 ± 6 versus 24 ± 48, p<0.03). Left ventricular mass, interventricular septum thickness, posterior wall thickness and left ventricular sistolik diameter were significantly higher in group II compared with group I. Left ventricular diastolic function was similar in non-dipper cases, except E- wave deceleration time. **Conclusions;** In treated essential hypertansives the blunted or absent nocturnal fall in blood pressure can be a strong predictor of cardiac and renal events. Hypertensive patients should be evaluated by ambulatory blood pressure monitoring, because in this way the patients at greater risk of morbidity and mortality can be identified for more exacting follow-up may be subject to increased risk for cardiac and renal damage.

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Assessment of myocardial viability in chronic ischemic heart disease evaluated by stress echocardiography with dobutamine and gated single photon emission computed tomography (GSPECT)

M. Kostkiewicz[1], A. Lesniak-Sobelga[2], M. Olszowska[3], M. Hlawaty[4], P. Podolec[5], W. Tracz[6].
[1]Dept of cardiac and vascular diseases Hospital John Paul II [2]Dept of cardiac and vascular diseases Hospital John Paul II [3]Dept of cardiac and vascular diseases Hospital John Paul II [4]Dept of cardiac and vascular diseases Hospital John Paul II [5]Dept of cardiac and vascular diseases Hospital John Paul II [6]Dept of cardiac and vascular diseases Hospital John Paul II

Background: Assessment of myocardial viability is clinically important in the management of patients with ischemic cardiomiopathy.Numerous studies have demonstrated that revascularization improves left ventricular function and prognosis in patients with viable myocardium. As of now, numerous diagnostic techniques are available to distinguish viable myocardium from scar tissue. Traditionally it has been asserted than stress echocardiography with dobutamine is more specific, especially in women and in patients with left ventricular hypertrophy. The introduction of gated single photon emission computed tomography (GSPECT) with the possibility to simultaneously assess both myocardial perfusion and left ventricular wall motion has deeply modified this opinion. The aim of this study was to define a current value of both techniques. **Material and methods:** We studied 123 patients (60 men and 63 women) mean age 58,4 "b 13,5 years with known coronary artery disease after the coronary angiography referred to our center for establish the viability studies. All patients underwent dobutamine low dose echocardiographic study and GSPECT study within 7days after coronary angiography. The ejection fraction in both methods was evaluated and the wall motion score index assessed by echocardiography and summed stress score (SRS) and summed stress score(SSS) assessed by GSPECT were compared. Data analysis was performed using 17 segment model to asses regional function (wall motion) in echocardiography and regional perfusion and function using GSPECT **Results:** Semi quantitative defect size correlated with the regional wall motion impairment. (r= 0.76,p=0.79). The defect size by echocardiography was smaller in13 patients, equal in 97 patients and larger in 13 patients. The global ejection fraction was lower in GSPECT study than in dobutamine study(43% versus 49%) but without any statistically significant correlation **Conclusions:** Perfusion defects size and localization correlated well with wall motion abnormalities assessed both by dobutamine echocardiography and GSPECT. Both methods provide an accurate information regarding myocardial viability in patients with ischemic cardiomiopathy.

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cardiopulmonary exercise testing in the estimation of the cardio respiratory efficiency after cardiac rehabilitation in coronary patients

A. Stuto[1], G. Cosentino[1], A. Ambu[1], F. Raineri[1], G. Bottaro[1], G. Basile[1], B. Armaro[1].
[1]Cardiac Rehabilitation Centre,STAR for life,Siracusa, Italy

Objectives: The aims of this study were to assess the difference between the changes induced by two exercise training modalities on the functional capacity (VO2max) and the cardio respiratory efficiency after cardiac rehabilitation (CR) in coronary patients (pts). **Background:** A shortcoming of standard exercise testing is the inherent inaccuracy in the estimation of exercise capacity from the work rate achieved on a treadmill or cycle ergo meter. The cardiopulmonary exercise testing by the direct measurement of oxygen uptake (VO2) obviates to these problems. **Material and Methods:** from January 2007 to June 2007, 102 male coronary patients (pts), referred for outpatient CR, were randomly assigned to two different exercise training modalities: 51 pts, age 62.3 +/- 12.0 years, performed a continuous moderate endurance training (group A) and 51 pts, age 62.4 +/- 9.8 years, performed a moderate-high intensity interval training (group B). All pts underwent cardiopulmonary exercise testing (CPET) at the moment of enrolment and at the end of the CR, and the exercise's intensities, individualized on the basis of the CPET results, were from 50% to 60% of the VO2max for the group A and from 60% to 90% of the VO2max for the group B. The pts exercised three times a week for 8 week. The peak work loads (PWL) achieved and the VO2max were measured and their ratio PWL/VO2max were calculated for each patient before and after CR. The Primer software was used for the statistical analysis of the data. **Results:** The analysis of the data collected, before and after CR, detected some significant differences, specifically: 1) the PWL achieved were respectively 94.3+/-32.3 vs 96.3+/-29.1 watt; P=0.316 in the group A, and 91.6 +/- 33.1 watt vs 114.3 +/- 31.3 watt; P=0.001 in the group B, 2) the VO2max were 15.4+/-5.4 ml/Kg/min vs 17.5+/-4.1 ml/Kg/min; P=0.002 in the group A, and 15.0+/- 4.8 ml/Kg/min vs 18.6 +/- 4.5 ml/Kg/min; P = 0.001, in the group B; 3) the PWL/VO2max ratio were 6.26+/-2.6 vs 6.55+/-2.1; P=0.539 in the group A, and 5.7+/-1.9 vs 7.1+/-2.7; P=0.003 in the group B. Comparing the two groups after CR significant differences related to VO2max were founded in both groups, but with reference to the PWL and the PWL/VO2max ratio significant differences were detected only in the group B. **Conclusions:** In all pts of this study, independently of the training modalities, after cardiac rehabilitation were observed a significant improvement of the functional capacity reflected by the VO2max, but a significant enhancement of the peak work loads achieved and of the cardio respiratory efficiency, expressed by the ratio between the peak work loads achieved and the VO2max, were observed only in the group B patients.

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Prevalence of Cardiac Events in Patients with Normal Perfusion and Abnormal ST-T Segment During Dipyridamole Infusion

P. Smanio[1], L Freitas[2], A Feldman[3], A Mota[4], C Collet[5], F Penhalves[6], R Lopes[7], M Oliveira[8], A Thom[9], L Piegas[10]. *[1]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [2]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [3]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [4]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [5]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [6]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [7]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [8]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [9]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [10]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA*

The prognostic value of myocardial perfusion scintigraphy (MPS) is already known. It is also known that patients (p) with normal MPS have a very low rate of cardiac events (CE) in the follow up. The association of pharmacological stress with dipyridamole (Dip) is increasing and the importance of ST segment changes during Dip infusion with a normal MPS is not completely clear. **Objective:** the aim of this study is to evaluate the prognostic value of ST changes during Dip infusion with normal perfusion after 39 months. **Methods:** It was retrospectively analyzed 3124 p which performed MPS with Dip between 01/2003 and 05/2005. Seventy seven patients were divided in 2 groups. Group I: 51 p with abnormal Dip and normal MP and Group II: 26 p with no ST changes and normal MPS. It were considered abnormal Dip the presence of ST segment depression ≥1,0 mm in relation to basal and normal MPS when there were no perfusion abnormalities in both phases rest/stress. The clinical characteristics are similar in both groups. The only statistical difference was the higher prevalence in diabetes in group II (p=0, 03). All p performed MPS with MIBI-99mTc and standard Dip protocol. It were considered CE the presence of cardiac death (CD), acute myocardial infarction (AMI); revascularization (RV) procedure like CABG/PTCA and presence of unstable angina(UA) during 39 months (range 24–54) of follow up. The statistical analysis was performed using Pearson qui-square and Student T tests and a significant difference was considered if p value was ≤0,05. **Results:** As can be observed in the table bellow there were the prevalence of CE after 39 months was 0, 10. Considering as CE only CD, AMI and RV the founded prevalence was even lower (0,012). **Conclusion:** The obtained results may suggest that even with an abnormal Dip, after a normal MPS the prevalence of CE is very low.

CARDIAC EVENTS

	Group I	Group II	p value
CD	1	0	0,33
AMI	0	0	-
RV	0	0	-
UA	4	3	0,11
T	5	3	0,054

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Five Year Results of the Treatment Strategy Based Upon the Fractional Flow Reserve Measurements in Patients with Borderline Coronary Artery Lesions

U. Arslan[1], S. Balcioglu[1], **S. A. Kocaman**[1], T. Timurkaynak[1]. *[1]Gazi University School of Medicine, Department of Cardiology, Ankara, TURKEY*

Aim: Fractional flow reserve measurement (FFR) is used frequently to revascularization decision making for borderline coronary artery lesions. The goal of this study was to establish five year results of the treatment strategy based upon the fractional flow reserve measurements in patients with borderline coronary artery lesions. **Methods:** Patients who had borderline lesions in coronary angiogram and who underwent FFR measurement for the hemodynamic significance were sought from our database retrospectively between June 1999 and December 2001. Borderline lesions were defined as lesions with luminal narrowing %30–50 for left main coronary artery and %50–70 of the any epicardial coronary artery with visual assessment. After baseline FFR measurements, intracoronary 20–40μg adenosine was given to induce maximal coronary blood flow. This procedure was repeated two times then minimum FFR calculation was used to determine severity of the lesion. FFR<0.75 was accepted significant after adenosine injection. The patients with severely obstructive lesion according to FFR underwent PCI or CABG. Follow-up (5.2±1.3 years in average) were performed in 121 patients with stable angina pectoris and borderline coronary stenosis. A major adverse cardiac event (MACE) was defined as acute myocardial infarction (ST elevated or non-ST elevated), target vessel revascularization (TVR) and verified cardiac death. **Results:** Nineteen out of 121 patients (100 male, 21 female, mean age: 54.9±9.7) had severe lesion according to FFR, 16 (84.2%) patients underwent PCI and 3 (%15.8) patients to CABG. Long-term results of treatment strategy based upon the FFR measurement are shown in table 1. There was no statistically significant difference among the groups. **Conclusion:** There were no statistically significantdifferences among the groups respect to five years results of treatment strategy based upon the FFR measurement. These findings are contradictory with DEFER study. We believe that further studies are needed to clarify the role of FFR in patients with borderline coronary artery lesions.

TABLE 1. LONG-TERM RESULTS OF TREATMENT STRATEGY BASED UPON THE FFR MEASUREMENT.

	FFR ≥ 0.75 (n=102)	FFR < 0.75 (n=19)	P value
STEMI, n (%)	3 (2.9)	1 (5.3)	0.603
NSTEACS, n (%)	8(7.8)	1 (5.3)	0.694
Cardiac death, n (%)	2(2.0)	1 (5.3)	0.538
Repeat revascularization, n (%)	20 (19.6)	4 (21.1)	0.885
Target vessel revascularization, n (%)	15 (14.7)	3 (15.8)	0.903
MACE (patients), n(%)	31 (30.4)	6 (31.6)	0.918

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Aortic Sclerosis and Mitral Annular Calcification are Related with Increased Risk Factors and Markers in Acute Coronary Syndrome

S. A. Kocaman[1], G. Taçoy[1], S. Türkoglu[1], S. Akinci[1], M. Erden[1], S. K. Açikgöz[1], A. Çengel[1]. [1]*Gazi University School of Medicine, Department of Cardiology, Ankara, TURKEY*

Aim: We aimed to investigate possible relationship between aortic sclerosis (AoScl) and mitral annular calcification (MAK) with risk markers such as fibrinojen, CRP, NT-proBNP, Troponin T and leukocyte levels as well as traditional risk factors without related valve diseases in patients with acute coronary syndrome. **Metods:** A total of 139 consecutive patients who had acute coronary syndrome and underwent coronary angiographic evaluation were enrolled in the present study. 31 patients had both AoScl and MAK. All of risk markers were measured at admission. **Results:** The clinical characteristics of the study population and risk markers were presented in Table 1. The traditional risk factors and risk markers were significantly higher in AoScl-MAK group than control group. **Conclusion:** AoScl ve MAK represent an important patient group who have both traditional risk factors and risk markers, therefore should be taken care of these findings in patients with acute coronary syndrome.

TABLE 1. CLINICAL AND LABORATORY PARAMETERS IN THE STUDY GROUPS.

	AoScl/MAK N=31	Control N=108	P value
Age	70±1,5	55±1,0	0,000
Sex (Male/female)	%32 / %68	%56 / 34	0,000
HT	%65	%47	0,004
DM	%71	%45	0,000
HPL	%58	%49	0,10
Smoking	%40	%36	0,42
Family History	%45	%52	0,20
BMI	28±1	30±3,5	0,61
Wast circumference	97±2,4	89±1,8	0,04
EF(%)	51±2,3	53±1,2	0,36
LVH	%72	%46	0,000
Total C	184±7,0	197±4,5	0,19
LDL	111±5,3	128±5,6	0,07
HDL	45±3,1	40±0,9	0,01
TG	143±16	156±9	0,79
Glucose	175±17	133±7	0,009
Cre	1,3±0,19	1,2±0,07	0,15
Fibrinogen	403±57	308±20	0,01
NT-proBNP	3234±914	1437±367	0,001
Troponin T	1,6±0,7	0,9±0,3	0,17
Crp	43±10	18±4	0,22
NDV(>%50)	2,2±0,2	1,8±0,1	0,07
WBC	8716±981	9096±414	0,43

NDV: Number of diseased vessels, WBC: White blood cell, LVH: Left ventricular hypertrophy BMI: Body mass index

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Prevalence and Clinical Course of the End Stage Phase of Hypertrophic Cardiomyopathy in Patients Referred to a Tertiary Care Center

A. Fernández[1], JH Casabé[1], RR Favaloro[1], M Diez[1], L Favaloro[1], C Vigliano[1], E Guevara[1], F Landeta[1], J Diaz[1], R Laguens[1]. [1]*ICYCC, FAVALORO FOUNDATION, BUENOS AIRES, ARGENTINA.*

Background: The end stage (ES) phase of Hypertrophic Cardiomyopathy (HCM) is characterized by systolic dysfunction. This uncommon complication is considered a risk factor for sudden death and presents high mortality. **Objective:** To evaluate the prevalence and clinical significance of the ES phase in a cohort of patients with HCM and disclose the long term outcome. **Methods:** 296 consecutively enrolled HCM patients from 11/1992 to 9/2007 were retrospectively analyzed. ES phase was defined as a left ventricular ejection fraction <50% at rest. The events were defined as heart failure death (HFD). Cardiac transplantation (CT) was considered as a surrogate of HFD. Mean age was 56±20 years, 155(53%) males, 115(39%) obstructive HCM. **Results:** ES was identified in 17(6%) of 296 study patients. Age 44±14 years old (range 19–70), 10(58%) males. Median/quartiles follow up period 2.2(0.8–5.6) years. Patients who developed ES were younger than patients with normal systolic function (NSF) 44±14 vs 57±20 years, (p=0.003). During follow up 12(71%) patients in the ES died of HFD (10 underwent CT) compared with 2(0.7%) patients with NSF (p<0.0001). One and five years survival from HFD were 72% and 24% respectively in patients with ES, versus 100% and 98% respectively in patients with NSF (p<0.0001). In comparison with NSF patients, those who developed ES had a higher frequency of sudden death with documented sustained ventricular tachycardia or ventricular fibrillation (VT/FV) 7(2.5%) vs 3(17.6%), (OR:8.1, 95% CI:1.9 to 34; p=0.02) and had more syncope with VT/FV 2(0.7%) vs 2(11.8%) (OR: 19; 95% CI 2.4 to 136; p=0.018). Patients in the ES had a larger left ventricular end-diastolic cavity dimension as compared with those who had NSF 52±13 vs 44±6.5 mm, (p<0.016) larger left atrial size 51±6.8 vs 43±9.8 mm, (p<0.0001) and lower fractional shortening 31.7±12 vs 46±10 mm, (p<0.0001) Two patients (11.8%) in the ES, waiting for CT underwent appropriate defibrillator interventions. The pathology examination of the native explanted hearts showed large areas replaced by fibrous tissue, and severe arteriolar disease. **Conclusion:** Confirming previously reports in patients with HCM the ES phase is rare and is associated with an unfavorable prognosis. In these patients prophylactic placement of cardioverter-defibrillator and evaluation for CT must be considerate.

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Relationship Between Frequency of Ventricular Tachyarrhythmia Episodes and Functional Capacity in Patients Treated with Implantable Cardioverter Defibrillator

A. Eksik[1], A. Akyol, T. Norgaz, S. Sakalli, N. Cakmak, H. Hasdemýr, A. Alper, O. Soylu , D. Oz, I. Erdinler. [1]*Siyami Ersek Thoracic and Cardiovascular Surgery Center, Cardiology Department, Istanbul-Turkey.*

Aim: Although left ventricular ejection fraction (EF) is a useful parameter for predicting frequency of ventricular tachyarrhythmia episodes in patients treated with implantable cardioverter defibrillator(ICD), the relationship between stage of heart failure and frequency of episodes is still uncertain. In this retrospective study, we aimed to evaluate the relationship between stage of heart failure according to New York Heart Association (NYHA) classification and frequency of episodes in patients who had an ICD implantation in our hospital during the previous 6 years. **Methods:** Demographic data, echocardiographic EF, NYHA class, results of electrophysiologic study (EPS), ICD indications and number of episodes were retrieved by using the records of EPS laboratory. Patients were grouped according to NYHA class: NYHA class I-II, II and II-III patients, group A (n:58) and NYHA class III patients, group B (n: 12). **Results:** Mean follow-up period was 3.08 ± 1.31 years. Two patients were NYHA class I-II (2.9%), 15 were class II(21.4%), 41 were class II-III (58.6%), and 12 patients were class III (17.1%). No patients was class IV. There was a total of 791 appropriately treated ventricular tachycardia or ventricular fibrillation episodes in the memory of ICD' s of 70 patients. Group B patients had a higher frequency of episodes compared to group A patients. (8.36±21.18 vs. 25.33± 27.63, p= 0.019). Episode number per patient (number of patient/number of episodes) according to NYHA classes was as follows: class I-II (2 patients/5 episodes): 2,5; class II (15 patients/113 episodes): 7,53;class II-III (41patients/339 episodes):8,26; class III (12patients/334 episodes): 27,83. **Conclusion:** Detection of NYHA class III heart failure is simple and it appears to be a predictor of the development of ventricular tachyarrhythmias in patients carrying ICD's. Implantable cardioverter defibrillator treatment is more "life-saving" in patients with class III heart failure. **Key words:** Ventricular tachyarrhythmias,implantable cardioverter-defibrillator, heart failure

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Role of a family physician service in lipid control in patients with coronary artery disease

O. Korzh[1], G. Kotchuev[1], S. Krasnokutskiy[1]. [1]*Kharkov Medical Academy of Postgraduate Education, Kharkov, UKRAINE*

Aims: Is has been previously established that patients with coronary artery disease (CAD) are significantly undertreated with respect to overall cardiovascular risk factor management, despite national guidelines to the contrary. In an effort to maximize risk factor control in our patients with CAD, we established a family physician-managed and monitored algorithmic approach to the outpatient management of lipids in patients with CAD. The purpose of this study was to determine the effect of this service on lipid screening and control in patients with CAD. **Design & Methods:** We analyzed the records of patients treated at a large, group-model, not-for-profit regional managed care system. An electronic medical record provided full examination, laboratory, and pharmacy data for all patients. Pharmacy data were analyzed to determine prescriptions for lipid-lowering agents. Lipid control was assessed through fasting lipid data. Patients with validated CAD were offered the service between May 2005 and September 2006 and followed up for a minimum of 6 months. **Results:** We randomly identified 691 active patients with a diagnosis of CAD. Of these, 90 patients were enrolled in the lipid service (study group), and 601 received standard care. Mean follow-up was 15.1 months. Screening fasting lipid profiles were found in 95.6% (86/90) of patients in the study group and only 66.9% (402/601) of the standard care patients (P < 0.001). Low-density lipoprotein cholesterol (LDL-C) control was improved in the family physician-managed group, with 79.1% (68/86) achieving an LDL-C of less than 100 mg/dL in comparison to the standard care group (54.8% 219/400; P < 0.001). An LDL-C value of more than 130 mg/dL was noted in 1.2% and 14.0% (56/400) in the treatment and control groups, respectively (P < 0.001). Statin use was present in 51.9% (312/601) of the control group patients and 84.4% (76/90) of the family physician-managed group (P < 0.001). **Conclusions:** Despite national consensus of CAD, patients are currently undertreated with regard to atherosclerotic risk factor modification. Initiation of a family physician-managed and monitored lipid service provides improved compliance with national and international guidelines.

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Torsade de Pointes: a cause of Morgagni-Adam-Stokes attacks in patients with atrioventricular block.

D. Antonelli[1], E. Rosner[1], A. Shurman[1], N.A. Freedberg[1], Y. Turgeman[1]. [1]*Ha Emek Medical Center*

Background. Atrioventricular block may be complicated occasionally by Torsades de Pointes that induces Morgagni-Adam-Stokes attacks. Aim of our study was to evaluate the factors of increased risk of Torsadses de Pointes during atrioventricular block. **Methods.** We reviewed the records of 7 hospitalized patients who developed Morgagni-Adam-Stokes attack due to Torsades de Pointes, while waiting for permanent pacemaker implantation because of atrioventricular block. None of the patients were on antiarrhythmic drugs and no electrolyte abnormalities were present. **Results.** There were 6 women and 1 man, their mean age was 75±3 years. All episodes of Torsades de Pointes resulted in patients loss of consciousness and required electrical cardioversion. The mean QT and QTc intervals were 608±28 ms and 506±47 ms. respectively. The mean ventricular cycle length during atrioventricular block was 1476±156 ms. Premature ventricular beats during patients monitoring were found in 6

patients before the onset of Torsades de Pointes. **Conclusions.** Although patients with atrioventricular block may be asymptomatic or mildly symptomatic our findings suggest that Torsades de Pointes and Sudden Cardiac Death may occur, particularly in women with QT interval longer than 600 ms and presence of premature ventricular beats.

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Prognositc value of anemia in patients hospitalized for Acute Coronary Syndrome

A. B. Cid Alvarez[1], E. Gonzalez Babarro[1], J.M. Garcia Acuña[1], A. Varela Román[1], P. Rigueiro Veloso[1], F.J. García Seara[1], A. Virgos Lamela[1], R. Vidal Perez, A. Díaz Redondo[1], J.R. Gonzalez Juanatey[1]. [1]*Hospital Clínico Universitario-Santiago de Compostela*

Objectives: Recent papers support anemia's prognosis role in cardiovascular disease. Our objective is to determine the prevalence of anemia in patients hospitalized for acute coronary syndrome (ACS) with elevation of serum cardiac troponin I levels and to evaluate its prognostic value. **Methods and results:**The study included 813 consecutive patients who were admitted with the diagnosis of acute coronary syndrome. The mean age of the patients enrolled was 67±13 years, 74% were males. On admission 57% of the patients had hypertension, 31% diabetes mellitus, 49% hyperlipemia and 30% history of ischemic heart disease. Anemia was present in 25% (250 patients) of the whole group (we have followed the WHO definition: hemoglobin <13g /dl in males and <12g/dl in females). Hemoglobin levels were obtained on admission. During hospitalization, coronary angiography was performed in 70% of patients objectifying three vessel disease in 30% of them. With a mean follow-up of 1.9 years 151(18,6%) deaths were observed, 36% in patients with anemia and 12% in patients without anemia (p =0.000).The presence of anemia was associated with a lower survival in the Kaplan Meier analysis (log rank test = 0.000). In the multivariate analysis (Cox's proportional hazard model) adjusted for age, sex, HTA, diabetes mellitus, creatinine levels, three vessel disease and heart failure, anemia has shown to be an independent predictor of mortality relative risk of 1.51 (95% confidencie interval 1.024 to 2.242; p= 0.038) **Conclusions:** Anemia on admission is a powerful and independent predictor of mortality in patients hospitalized for acute coronary syndrome, with a high prevalence in this pathology

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Clinic features and prognosis of Acute Coronary Syndrome in the elderly

A. B. Cid Alvarez[1], E. Gonzalez Babarro[1], J.M. Garcia Acuña[1], A. Varela Román[1], J. Garcia Seara[1], M. Gutierrez Feijoo[1], R. Vidal Perez[1], J.L. Martinez Sande[1], A. Díaz Redondo[1], J.R. Gonzalez Juanatey[1]. [1]*Hospital Clínico Universitario-Santiago de Compostela*

Objectives: The study of cardiovascular pathology in the elderly has become important in recent years. Our objective is to determine the clinical features and prognosis of acute coronary syndrome (ACS) in patients over 75 years. **Methods and results:** The study included 813 consecutive patients who were admitted with the diagnosis of acute coronary syndrome whit elevation of serum cardiac troponin I levels. The mean age of the patients enrolled was 67±13 years, 33% were over 75 and in this group 69% had HTA (as against 51% in those < 75 p= 0.000) 38% DM (27% in the group < 75, p = 0.012) 46% dyslipemia and 34% history of ischemic heart disease. On admission 34% of the elderly showed Killip> 1, significantly higher than the younger group (13%, p= 0.000) It is to be noticed that only 55% of patients > 75 were males as against 83% < 75 (p= 0.000) During hospitalization, coronary angiography was performed in 69% of patients whose age was >75 (significantly lower than in younger patients) objectifying three vessel disease in 35% of them. A coronary revascularization was performed percutaneously in 49% of patients over 75 and surgicaly in 8%. The differences in the medical treatment at hospital discharge in > 75 consisted in using fewer beta blockers (60% in > 75 as against 78% in <75) as well as estatines and a higher use of diuretics Mortality for all causes was analyzed with a mean follow-up of 1.9 years, resulting in the whole of the sample 18.6% (n= 151), 35% of those >75 years as against 10% in those < 75 (p=0,000) The age >75 was associated with a lower survival in the Kaplan Meier analysis (test log-rank, p= 0.000). **Conclusion:** Acute Cornary Syndrome in the elderly is a common pathology with specific features in what refers to clinical presentation, diagnostic and treatment. Its prognosis is poor.

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Clinical presentation and prognosis of Acute Coronary Syndrome in women

A. B. Cid Alvarez[1], E. Gonzalez Babarro[1], M. Pedreira Perez[1], J.M. Garcia Acuña[1], M. Bastos Fernandez[1], P. Mazon Ramos[1], I. Gomez Otero[1], R. Vidal Perez[1], A. Diaz Redondo[1], J.R. Gonzalez Juanatey[1].

Objectives: The study of ischemic heart disease in women has become important in recent years to achieve a better identification, prevention and treatment. Our objective of the present paper was to determine the proportion of women hospitalized for acute coronary syndrome (ACS) analyzing risk factors, clinical features, therapeutic-diagnostic management and prognosis. **Methods and results:** The study included 813 consecutive patients who were admitted with the diagnosis of acute coronary syndrome whit elevation of serum cardiac troponin I levels. Of the total patients admitted 25% were women with an mean age of 73 years (eight years older than males) On admission 72% had hypertension (as against 52% in males, p=0,0002), 35% diabetes mellitus, 53% dyslipemia and 25% history of ischemic heart disease. On admission 26% of women showed data of hearth failure (Killip>1) as against 18% in males (p=0.011).Systolic dysfunction was objectified through echocardiogram in 28% of the group of women, without any significant difference in relation with males. During hospitalization, coronary angiography was performed in 71% of women as against 83% of males (p=0,000), showing a high percentage three vessel disease in females (27%). A coronary revascularization was performed percutaneously in 51% of females as against 65% of males (p=0,006).). There aren't differences in both groups as for surgical revascularization or medical treatment after discharge. Mortality for all causes was analyzed with a mean follow-up of 1.9 years, resulting in the whole of the sample 18.6% (n= 151), 22% of the total of women as against 17% of males. However these differences do not have statistic significance **Conclusion:** Acute Coronary Syndrome in women is a common pathology presenting particularities from the point of view of its clinical presentation and diagnostic- therapeutic management. In our sample we have not found differences in the long term follow up.

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Application of Devereux's geometric model for the analysis of structure and function in hypertensive patients.

D. Chejtman[1], **S Baratta** , A Hita, F Tramontini, H Fernandez, C Kotliar, P Forcada, D Turri. [1]*HOSPITAL UNIVERSITARIO AUSTRAL*

Introduction: Overload pressure and volume in hypertensive patients (p) induce changes in ventricular geometry. Relative wall thickness and left ventricular mass index are useful tools to identify different groups of patients with different evolution. **Objetive:** To compare structure and systo-diastolic function by using Doppler-echocardiography and Tissue Doppler between hypertensive patients with different ventricular geometry; and control group. **Methods:** Population included 54 p, G1 normal (n:17, 41.8 ±12 y); G2 concentric remodelling (n:10 51.4 8±,6 y); G3 concentric hypertrophy (n:14, 45 ±11 y) y G4 eccentric hypertrophy (n: 13, 55 ±9 y). Groups were divided by mass (< o > 125 gm/m2) and relative wall thickness (< o > 0,45). Diastolic function, systolic function (normalised by parietal stress) and myocardial static structure (DB) and dynamic structure (VCB) were studied by Doppler-echocardiography and Tissue Doppler. **Results:** Diastolic function: a) E/A ratio G1:1.57 ±0.62; G2:0.91 ±0.34; G3: 1.03 0±.35; G4: 1.05 0±.54, (p=0.004) b) mitral E/Doppler tissue E ratio, G1: 10 2±.4; G2: 13.3 3.±8; G3: 17.3 1±1.9; G4: 16.6 8±.5, (p=0.04). Systolic function: a) mid-wall shortening fraction (MSF) G1:18 ± 4; G2:17 3±.4; G3: 19 ± 2.7; G4: 23 ± 5.1. (p=0.001), b) MSF/stress G1: 12.7 ±4.6; G2: 12.9 ± 2.7; G3: 13.2 ±4.4; G4: 16.8 ±.1, (p=0.12). Tissue Doppler (DB): G1:31.1 ±0.8; G2:36.4 ± 7; G3: 36.7 ± 4.8; G4: 35± 6.2, (p=0.019). Left atrial diameter: G1:33 ±4.7; G2:36± 3.34; 3: 38± 4.8; G4: 42 ± 3.9, (p=0.001). No significant differences were found in tisular systolic function (p= 0.5) and the cyclic variation of the backscattering (p= 0.19) **Conclusions:** Significant changes in the myocardial structure in patients with normal mass and hypertension (concentric remodelling) were observed. This alteration was associated to diastolic dysfunction and increased atrial size. Concentric remodelling was also associated to these changes. Systolic function adjusted by end systolic stress was normal in all groups.

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Serum myeloperoxidase level is associated with risk of major cardiovascular events during hospitalization and extent of coronary artery disease in patients with acute coronary syndromes

B. Karadag[1], B. Vatan[1], N. Karadag[1], I. Keles[1], Z. Ongen[1], VA. Vural[1]. [1]*Division of Cardiology, Istanbul University, Cerrahpasa School of Medicine, 34098 Istanbul, Turkey*

Background : Atherosclerosis is considered as an inflammatory disease. Polymorphonuclear neutrophils (PMNs) have gained attention as critical mediators of acute coronary syndromes. Myeloperoxidase is one of the most quantitative mediators expressed by activated PMNs. **Aim of the Study:** The aim of the study was to investigate the association of serum myeloperoxidase levels with risk of major cardiovascular events during hospitalization and the extent of coronary artery disease. **Methods :** One hundred fifty eight patients with acute coronary syndromes (Mean age : 60,4± 12,8) were included to our study. All the patients have received standard of care management according to current practice guidelines. Clinical data was obtained during hospitalization on different occasions. Blood samples for biochemical analysis of myeloperoxidase, were drawn on admission to coronary care unit. Coronary angiography was performed in 112 patients during hospitalization. Gensini score, a measure of the extent of myocardial ischemia, was computed by assigning the severity score to each coronary stenosis, according to the degree of luminal narrowing and its anatomical importance. **Results :** The final diagnosis was ST segment elevation myocardial infarction in 86 (% 54,4) of patients. Forty (25.3%) of the remaining 72 patients were diagnosed as non-ST segment elevation myocardial infarction and 32 (20.3 %) patients were classified as unstable angina pectoris. Mean serum myeloperoxidase level for ST segment elevation myocardial infarction, non-ST segment elevation myocardial infarction and unstable angina pectoris were 531,32 ± 372,65 μg/l, 417,85 ± 339,958 μg/l, and 339,28 ± 258,15 μg/l, respectively. Increased plasma levels of myeloperoxidase was found to be significantly correlated with increased mortality (p< 0,001), recurrent angina (p< 0,001), clinical heart failure (p<0,01), cardiogenic shock (p< 0,001), urgent revascularization procedures (p< 0,05), reinfarction (p< 0,05) risk during hospitalization. No significant differences were observed between serum myeloperoxidase levels and risk of arrhythmia (p> 0,05). As a common finding for the whole spectrum of acute coronary syndrome patients, serum myeloperoxidase levels in patients with three vessel coronary artery disease were significantly higher than patients with one or two vessel coronary artery disease. We also found a significant association between increased serum myeloperoxidase levels and angiographic Gensini score (r :0,6,p< 0,01). **Conclusion :** Serum myeloperoxidase level is well correlated with extent of coronary artery disease documented with angiography. Serum myeloperoxidase level is also associated with risk of major cardiovascular events during hospitalization for all types of acute coronary syndrome presentations.

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The prognostics significance of impaired glucose regulation in non-diabetic patients with acute myocardial infarction

M. Ilic[1], I. Mrdovic, T. Jozic, R. Lasica, J. Perunicic, M. Asanin, M. Srdic, S. Stankovic , M. Matic, Z. Vasiljevic. *[1]Clinical Center of Serbia, Institute for cardiovascular diseases, Belgrade, Serbia.*

Aims: to investigate the prognostic significance of impaired glicoregulation in non-diabetic patients with acute myocardial infarction (AMI). **Methods and results** According to fasting glicemia, 350 patients were divided into two groups: 236 (67,4%) patients with normal fasting glucose NFG<6.1 mmol/L (group 1) and 114 (32,6%) patients with impaired fasting glucose IFG>6.1 mmol/L (group 2). Impaired glucose tolerance (IGT) was diagnosed by oral glucose tolerance test (OGTT) in 174 (49,7%) patients. All patients were follow-up for 6–12 month (mean 9 month). During follow-up 25 (7,5%) patients died, 11 (3,3%) with NFG and 14 (4,2%) with IFG, (P=0.007). In a multivariable Cox proportional hazard model IFG was an independent predictor of mortality (P=0.03). Also, IFG was of borderline prognostic significance for reinfarction (P=0.06) and re-hospitalization (P=0.07), in contrast to IGT (P=0.29; P=0.26; P=0.94, retrospectively). The Kaplan-Meier survival curves showed that patients with NFG had longer event-free time compared to patients with IFG (long rank P=0.003). **Conclusion:** our results show that IFG is an independent predictor of long-term mortality in non-diabetic patients with AMI. IFG is superior to IGT in the assessment of long-term risk.

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Lead Intoxication in children: markers of endothelial damage.

G. Feldman[1–2], S. Chain[2], H. Luciardi[1], S. Berman[3], R. Feldman[1], N. Martínez Riera[1]. *[1]Facultad de Medicina.UNT. Tucumán- Argentina [2]Centro Radiológico L. Méndez Collado-Tucumán [3]Hospital del niño Jesus-Tucumán- Argentina*

Lead is able to alter diverse proatherosclerotic biochemical parameters and produce alteration in endothelial cells with generation of diminution of vascular capacity of dilatation. These anomalies affect endothelial and heart structure and function, and could be associated with early structural atherosclerotic vascular changes. This study assess whether endothelial vascular dysfunction with brachial artery flow-mediated dilation (FMD), and left ventricular function (LVF) changes with tissue Doppler imaging (TDI) are present in children with Lead exposition (LEC) compared with healthy control children (CC) and establish association between microalbuminuria and increase of thickness carotid average (EIM) like early markers of vascular injury. Tranversal study that includes 7 children with ages between 3 and 10 years exposed to lead and 7 healthy controls children. ALA-D (acid levulínico amino delta deshidratasa), plombemia and microalbuminuria were determined. The EIM was evaluated using a Toshiba Xsario Echo machine; valuing itself by independent operators. EIM of near and distant wall of common carotid, right and left bifurcation and internal carotid were included. The average of the 12 segments was obtained. TDI measurements include systolic parameters: S velocity, isovolumetric contraction time (IVCT), and diastolic parameters: E velocity, A velocity and isovolumetric relaxation time (IVRT). Statistics: descriptive and Mann-Whitney Test. Plombemia: 37± 5 ug/dl. All exposed presented protein in qualitative urine analysis, all the determinations of microalbuminuria were positive (>20 mg/24 hs) ANOVA p< 0,01. The EIM average was 3mm in exposed and controls, normal for the age included (Rank: 2–4mm). Was not found association between microalbuminuria presence and increase of EIM. The FMD was significantly impaired in LEC (Lead in blood: 15 μg/dl±5) compared with controls (7.2 +/- 4.0% vs 18 +/- 7.0%, p < 0.015). No difference was found between LEC and CC on LVF. Lead exposition in children showed impaired endothelial function response in comparison with healthy control children, without significant changes in diastolic and systolic LVF. The Microalbuminuria levels reveal endothelial damage produced by lead like cardiovascular risk factor. It constitutes an early marker to the evidential structural injury. The hypothesis of the narrow relation between microalbuminuria, endothelial damage and lead roll in genesis of cardiovascular atherosclerotic diseases is fortified.

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A Simplified Strategy for the Estimation of the Ventilatory Thresholds During Ramp-Incremental Exercise

R. Stein[1], JA Neder[2]. *[1]Laboratório de Fisiopatologia do Exercício - LaFiEx - Hospital de Clínicas de Porto Alegre - UFRGS [2]Divisão de Doenças Respiratórias - Escola Paulista de Medicina - UNIFESP*

Objective: To analyze the limits of agreement between exercise ventilatory thresholds (VT_1 and VT_2) as estimated from a combination of pulmonary gas exchange and ventilatory variables (cardiopulmonary exercise testing) and those derived from an alternative approach based only on the ventilatory response (VE, ventilometry). **Methods:** This was a prospective, cross-sectional study performed on a clinical laboratory of a tertiary, university-based center. Forty-two non-trained subjects (24 males, aged 18 to 48, peak VO_2= 33.1 ± 8.6 mL/kg/min) performed a maximum incremental cardiopulmonary exercise testing on an electromagnetically-braked cycle ergometer. The participants breathed through a Pitot tube (Cardio2 System, MGC, USA) and a fixed-resistance ventilometer (Ergo Pc13 version 2.4, Micromed, Brazil) which were connected in series. Heart rate values at the estimated VTs ($VTHR_1$ and $VTHR_2$) were obtained by the conventional method (ventilatory equivalents, end-expiratory pressures for O_2 and CO_2 and the V-slope procedure) and an experimental approach (VE vs. time, VE/time vs. time and breathing frequency vs. time). **Results:** There were no significant between-method differences on $VTHR_1$, $VTHR_2$, $VTVE_1$, $VTVE_2$ and peak VE (p>0.05). After certification of data homocedasticity, a Bland-Altman analysis revealed that the mean bias ± 95% confidence interval of the between-method differences were lower for $VTHR_2$ than $VTHR_1$ (2 ± 9 bpm and 0 ± 17 bpm, respectively). Importantly, $VTHR_2$ according to ventilometry differed more than 10 bpm from the standard procedure in 3/42 subjects only (9%). Between-method differences were largely independent of the level of fitness, as estimated from peak VO_2 (p>0.05) **Conclusions:** A relatively simple and inexpensive less expensive approach, based on the ventilatory response as a function of time, can provide acceptable estimates of the exercise ventilatory thresholds – especially VT_2 – during ramp-incremental cycle

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Brachial-ankle Pulse Wave Velocity is a Marker of Coronary Heart Disease in Subjects without, but not With, Metabolic Syndrome

H. Tomiyama[1], A. Yamashina. *[1]Tokyo Medical University [2]Tokyo Medical University*

Objective: Brachial-ankle pulse wave velocity (baPWV) is a simple method to evaluate the arterial stiffness. The present cross-sectional study was conducted to examine the usefulness of baPWV as a marker of the presence and the severity of coronary heart disease (CHD) in subjects with and without metabolic syndrome (MetS). **Method and Results:** The baPWV were measured in 474 consecutive subjects (age, 63±11years) who subsequently underwent coronary angiography for the diagnosis of CHD. Among them, 136 subjects were defined as MetS and 338 were defined as without MetS. In subjects without Mets, receiver-operator characteristic (ROC) curves analysis, which assessed the association of baPWV with the presence of CHD or with the three vessels disease, demonstrated as follows: 1. the highest discriminating sensitivity and specificity were 70% and 48% at baPWV=15.0m/s (area under curve = 0.61); 2. the highest discriminating sensitivity and specificity were 70% and 65% at baPWV=17.0m/s (area under curve = 0.70). After the adjustment of confounding variables, a multivariate logistic regression analysis demonstrated that baPWV>15.0m/s is an independent variable for the presence of CHD (OR: 1.79, p=0.038, 95%CI:1.03–3.12), and baPWV>17.0m/s is an independent variable for assessing the risk of the 3 vessel disease (OR: 3.48, p=0.001, 95%CI:1.67–7.22). On the other hand, these associations were not observed in subjects with MetS. **Conclusion:** The baPWV seems to be an independent marker for the presence and/or the severity of CHD in subjects without, but not with, MetS. Then, this study proposed that the cut off value of baPWV to identify the presence of CHD is 15.0m/s and the presence of the 3 vessel coronary disease is 17.0m/s in subjects without MetS.

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Incidence of patients with isolated noncompaction of left ventricle - single center experiences

A. Nikolic[1], LJ Jovovic[1], S Tomic[1], M Vukovic[1], D Nikolic[2]. *[1]Dedinje Cardiovasculare Institut [2]Dedinje Cardiovasculare Institut [3]Dedinje Cardiovasculare Institut [4]Dedinje Cardiovasculare Institut [5]UMC Bezaniska kosa*

Introduction: Noncompaction of left ventricle (LVNC) was a rare and unclassified congenital cardiac malformation until few months ago while new Contemporary Definitions and Classification of the Cardiomyopathies from American Heart Association Scientific Statement, proposed as a primary cardiomyopathy with genetic cause, which probably leads to an arrest in intrauterine endomyocardial morphogenesis. Recognition of this condition is extremely important because of its high morbidity due to progressive heart failure, ventricular arrhythmias and thromboembolic events. **Results:** Analyzing 3854 exams, which were performed by two-dimensional color Doppler echocardiography from January 2006 to January 2007, we found twelve patients (3,1%) who met the criteria for LVNC. Seven of them were men. Mean age at diagnosis was 45±15 years. Three patients had prolapsis of mitral valve, two of them had normal, and one had impaired systolic function. Two patients, who were operated, had severe mitral regurgitation with enlargement of the left ventricle. The third one had mild to moderate mitral regurgitation with a normal left cavity size. Coronarography was done in both operated patients and found nonsignificant stenosis in coronary arteries. In the patients study group only one female patient did not have systolic dysfunction or any other heart problems (valve disease, arrhythmias etc). Analyzing clinical manifestation of LVNC it was found that seven patients had signs of heart failure (one was treated with implantable cardioverter/defibrillator-ICD), six had arrhythmias (one treated with implantable cardioverter/defibrillator-ICD), and there were no embolic events. **Conclusion:** Although cardiologists have been focused on LVNC, there is still no true data about the incidence of this abnormality. New studies have to be done in this field to make this problem easier to understand and to give necessary information to physicians who are doing echocardiography to better recognize this disease in the future because it is important to start treating patients in their oligosymptomatic or asymptomatic period.

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Achieving Lipid Goals with Rosuvastatin compared to Simvastatin: DISCOVERY BETA Study

T. Laks[1,9], E. Keba[2], M. Leiner[3], E. Merilind[4], M. Peterson[5], S. Reinmets[6], S. Väli[7], T. Sööt[8], K. Otter[8]. *[1]North-Estonian Medical Center [2]Viljandi Hospital [3]Mustamäe Familiy Doctors Centre [4]Nõmme Family Doctors Centre [5]Saku Health Centre [6]Kristiine Family Doctors [7]Family Doctor Sille Väli [8]AstraZeneca Estonia [9]Tallinn University of Technology*

Objectives: International guidelines emphasize the need to achieve recommended low-density lipoprotein cholesterol (LDL-C) concentrations in order to decrease morbidity and mortality of coronary heart disease (CHD). The primary objective of the study was to compare the efficacy of Rosuvastatin and Simvastatin to achieve EAS treatment goals. **Methods:** This 12-week randomised, multi-centre, open-label study compared efficacy and safety of Rosuvastatin 10 mg and Simvastatin 20 mg in subjects with type IIa and IIb hypercholesterolemia. **Results:** A total 504 patients with similar baseline characteristics were randomised into the two treatment groups. After 12 week of treatment, subjects in Rosuvastatin group achieved significantly

higher number of 1998 European LDL-C goal compared to Simvastatin group (64% vs 51.1%; p<0.001). In addition, significantly more statin naive subjects achieved the goal in Rosuvastatin arm compared to Simvastatin (67.1% vs 54.6%; p<0.001), while the same trend occurred within switched subjects (54.9% vs 40.5%; p<0.001). A significantly higher number of subjects in Rosuvastatin group achived the 1998 European TC goal compared to subjects in Simvastatin arm (59.5% vs 43.1%; p<0.001). The analysis was made within the total population, as there were no significant difference between statin naive and switched subjects. Similarly, a significantly greater number of subjects receiving Rosuvastatin reached the 2003 European LDL-C and TC goals compared to subjects in Simvastatin arm (44.5% vs 22.2%; p<0.001, and 43% vs 25.7%; p<0.001). Rosuvastatin 10 mg was associated with significantly greater change in LDL-C levels compared to Simvastatin 20 mg (-41% vs -35%; p<0.01). Also, changes in total cholesterol (TC) were similar to LDL-C. Both study treatments were generally well tolerated, and the incidence of adverse events, types of which were similar between the treatment groups, was low. 7.2% in Rosuvastatin group and 4.1% of the patients in the Simvastatin group discontinued the study because of the side effect. The most common AEs leading to withdrawal from the study were gastrointestinal disorders such as abdominal pain and nausea. **Conclusions:** Rosuvastatin 10 mg compared to Simvastatin 20 mg significantly more effective achieving EAS LDL-C and TC goals at least similar safety and tolerability profile.

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The disease of vasa vasorum in endarterectomy sequesters of coronary arteries in patient with Chlamydia pneumoniae infection

M. Zorc[1–2], R. Zorc Pleskovic[1–2], A. Pleskovic[1], O. Vraspir Porenta[1], D. Petrovic[1–2], N. Radovanovic[2]. *[1]Institute of Histology, Medical Faculty, University of Ljubljana [2]International centre for cardiovascular disease-MC Medicor-Clovenia*

Introduction In patient with diffuse coronary artery disease (DCAD) surgical treatment is performed by endarterectomy procedure. All endarterectomy sequesters (ES) were histologicaly and morphometricaly analysed. Before surgery Chlamydia antibodies in blood were investigated. **The Aim** The aim of the study was to compare morphology of vasa vasorum in ES of patients with serologically proven chronic Chlamydia pneumoniae (Ch Pn) infection with morphological changes of vasa vasorum of patients without Ch Pn infection. **Material** Endarterectomy sequesters of 70 patients with severe DCAD were histologicaly analysed. 20 of them had serologically proven Ch Pn chronic persistent infection, 50 had no evidence of infection. **Methods** Histologic, immunohistologic and stereologic analyses of step serial sections of ES were preformed. Fibroproliferative changes, site and degree of cellular infiltration, neoangiogenesis and pathology of vasa vasorum were analysed. **Results** In the arterial wall of ES lymphocyte T, B monocytes, plasma cells were detected. Positive MIB 1 antibody for Ki-67 antigen showed proliferative activity of the cells in the vessel wall. In patients with chronic persistent infection with Ch Pn mononuclear infiltration in vessel's wall were detected as well as arteriologenesis, capilarogenesis, vasculities with polimorphonuclear infiltration and hialinisation of the wall of a new formed vasa vasorum. In patients without serological signs of chronic Ch Pn infection the ES only aterosclerotic process with smooth muscle cell proliferation and cholesterol crystals were found. **Conclusion** Our results showed that chronic persistent infection with Ch Pn provokes inflammatory reaction, neoangiogenesis and also inflammation in neoangiogenetically derived vasa vasorum in DCAD. Presented data suggested that Ch Pn chronic infection has long lasting continuous inflammatory and atherosclerotic effect on CA vasa vasorum during patient illness. Because vasa vasorum have great importance for viability and normal function of vessels, these data must be taken into consideration in post-operative treatment of patients with serologically proven chronic Ch Pn infection.

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Chronic Chlamydia pneumoniae infection and morphology of atherosclerotic process in diffuse and distal coronary artery disease

A. Pleskovic[1], R. Zorc Pleskovic[1–2], M. Zorc[1–2], O. Vraspir Porenta[1], D. Petrovic[1–2], N. Radovanovic[2]. *[1]Institute of Histology, Medical Faculty, University of Ljubljana [2]International centre for cardiovascular diseases-MC Medicor-Slovenia*

Introduction Diffuse and distal coronary artery disease (DDCD) is the most serious atherosclerotic process of coronary arteries characterised by long atherosclerotic segments involving all parts of the vessel wall. Surgical treatment by endarterectomy procedure is the only alternative for the treatment. **Purpose** In our research study pathomorphological changes in DDCD were investigated in patients who were serologically positive for Chlamydia pneumoniae (Cp) infection. **Hypothesis** - Chronic persistent infection with Cp could be one of the cause for the development of the DDCD. Serologically proved chronic persistent infection with Cp involves specific pathological changes in coronary vessel wall. - Cp could be detected in atherosclerotic parts of coronary arteries. **Methods** In the group of 95 patients with DDCD and with positive serologic test of microimmunofluorescence (micro-IF) for Cp morphological and immunohistological analyses of endarterectomy sequesters were performed. With polimerase chain reaction (PCR) method the DNA particles of Cp were investigated in macroscopically normal and atherosclerotic parts of vessel wall. Histological sections were stained with HE, Masson trichrom and Weigert van Gieson staining. Fibroprofilerative changes, cellular infiltration of vessel wall, neoanginogenesis and pathology of small vessels were morphologically analysed. With immunohistochemical method limphocyte T lymphocyte B, macrophages, plasma cells and endothelial cells were investigated. Proliferative activity of the cells in the wall of sequesters was estimated by MIB-1 antibody for Ki-67 antigene. Clinical data as patients' age, gender, the duration of angina, previous myocardial infarction, ejection fraction and some risk factors were taken into consideration. **Results** In 70% of patients serologicaly proven chronic persistent infection with Cp was confirmed, whereas 30% of patients had only signs of previous infection. In patients with chronic persistent infection mononuclear cellular infiltration (lymphocytes T, lymphocytes B, macrophages and plasma cells) were detected. Neoangiogenesis especially arteriologenesis, was present in 60% of patients. Capilarogenesis was found in 70% of patients. In 60% of patients the signs of vasculitis with polimorphonuclear infiltration in vessel wall and in perivascular space were found. Direct detection of Cp with PCR method was found in 5% of patients particulary in inflamed atherosclerotic segments of endarterectomy sequesters. **Conclusion** Chronic persistent infection with Cp provokes inflammatory and immune response in vessel wall and affected the pathomorphological process in DDCD. The inclusions of Cp could be demonstrated in atherosclerotic and inflammatory parts of coronary arteries. The study demonstrated that chronic persistent infection by Cp alone or in combination with other risk factors could cause specific pathological changes in DDCD.

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PREDICTORS OF BLOOD PRESSURE NON-DIPPING PATTERN IN ACUTE CORONARY SYNDROME

A. Zamora[1], G Vazquez[1], M Vilaseca[1], JM Fernandez-Real[2], M Crespo[1], A Gibert[1], G Paluzuie[1], S Corali[1], D Bron[1], J Massa[3]. *[1]Hospital Blanes [2]Hospital Dr. Josep Trueta [3]Corporació de Salut del Maresme i la Selva*

Introduction Blood pressure (BP) patter assessed by 24-hour ambulatory blood pressure monitoring (ABPM) is a independent prognostic factor of cardiovascular disease. Data regarding modifications of BP profile improve outcomes in hypertensive patients. To date, published information about acute coronary context is unknown. Theorycally, chrono- therapeutic approach in coronary syndromes and patients with non-dipper BP profile could improve cardiovascular prognosis in this context. **Objectives** The aim of our study was evaluate predictive factors of non-dipping blood pressure (BP) pattern by 24-hour ambulatory blood pressure monitoring (ABPM) among patients hospitalised with an acute coronary syndrome (ACS) and also establish clinical and laboratory determinants of persistent non-dipper BP profile in stable patients after an ACS. **Methods** Fifty patients (73,6±11 years of age) consecutively admitted with diagnosis of ACS were enrolled. Clinical and laboratory data, presence of metabolic syndrome (based on ATP-III definition), pharmacological treatment received, standard blood tests, reactive C-protein, fibrinogen and microalbuminuria were evaluated. A first 24-h ABPM was registered during hospitalization in absence of intravenous drug treatment and once physical activity was reinitiated. Three months after event index discharge all patients underwent a second 24-h ABPM in out-patient basis. The end points were mortality (cardiovascular disease-related and all-cause) and/or hospitalisation secondary to a cardiovascular event (ACS, myocardial revascularization, heart failure and stroke). **Results** A riser BP circadian pattern at ABPM during hospitalization for ACS was detected in 46,8%, a non-dipper BP pattern in 44,7% and a dipper BP patter in 8,5%. The presence of metabolic syndrome was the single variable independently associated (p = 0,02) with altered BP patterns during acute phase of ACS. In la second ABPM during follow-up, 60% of the patients maintained altered BP pattern. Metabolic syndrome and glycated haemoglobin (HbA1c) values were associated with persistent non-dipper BP pattern (p= 0,002 and p = 0,03, respectively) during the follow-up. **Conclusions** In this study, strong correlation between presence of metabolic syndrome and HbA1c, and non-dipper BP pattern, is detected. Presence of metabolic syndrome in patients with ACS may represent a marker of impairment regarding BP lowering in patients admitted with ACS.The results pointed to a possible regulatory effect of carbohydrate metabolism and insulin resistance in circadian variability of BP in the context of atherosclerotic disease.

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Intracoronary Autologous Bone Marrow Mononuclear Cell Transfer after Large Anterior Acute Myocardial Infarction (AMI

M.A. Riccitelli[1], N. Perez Baliño[1], J.C. Dupont[2], J. Szarfer[1], **F. Blanco[1]**, L. Grynberg[1], R. Cacchione[2], L.A. Vidal[1], A. García Escudero[1], O. Masoli[1]. *[1]Hospital Argerich [2]CEMIC*

The aim of the study was to evaluate feasibility, safety and efficacy on Left Ventricular Function (LVF) of BMC transferred within 2–7 days after reperfusion on first large anterior wall AMI patients (p.). **Methods:** We prospectively randomized 26 p. that underwent coronary primary PCI with bare metal stent for anterior descending artery culprit lesion, in 2 groups. Cell infusion n=13p. (CI) and control group 13p. End diastolic (EDV), end systolic (ESV) volumes in ml/m2 and Ejection Fraction (EF) angiographicaly assessed through the area-length method, and coronary patency were evaluated pre procedure (Pre) and after 6 months (F.up). Minimum target cell dose 4 x 106 CD34+ delivered intracoronary. **Results:** No differences were found between groups on demography; previous medical history; pre procedure infarct related artery patency; localization, extension and severity of lesions; and pre procedure Timi Flow Grade. No serious related complications occurred during the procedure. **Conclusions:** Autologous bone marrow mononuclear cell transfer after AMI appears to be safe and improves LVF, presumed as a consequence of left ventricular dilatation.

	EDV Pre	p<	EDV Fup	ESV Pre	p<	ESV Fup	EF Pre	p<	EF Fup
CI	79.3±18	0.04	93±24	46.2±11	NS	47.6±17	39.7±9	0.0001	48±10
P<	NS		NS	NS		NS	NS		NS
Control	75.3±22	NS	80.7±28	46.1±17	NS	47.1±22	39.3±11	NS	42.7±13

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Coronary endothelial dysfunction is distinct in postmenopausal women with chest pain in the absence of coronary artery disease

T. Ashikaga[1], H. Fujii[1], S. Niki[1], K. Ihara[1], N. Murai[1], S. Maeda[1], N. Yamawake[1], M. Nishizaki[1], Y. Kishi[2], M. Isobe[3]. *[1]Yokohama Minami Kyosai Hospital [2]Tokyo Kyosai Hospital [3]Tokyo Medical and Dental University*

Background: Chest pain in the absence of obstructive coronary artery disease (CAD) is common in women. Although postmenopausal state is a risk factor for CAD, comparison

between endothelial and microcirculation dysfunction have not been well shown. We investigated clinical characteristics and coronary reactivity with adenosine triphosphate in women with chest pain. **Method:** Twenty-five consecutive women who have chest pain in the absence of CAD were enrolled in this study. Average peak velocities (APV) were measured at baseline and intracoronary administration of adenosine triphosphate (50μg) in 15 postmenopausal women and 10 premenopausal women. Coronary flow reserve (CFR) was calculated by the ratio of baseline to hyperemic APV. Epicardial artery vasoactivity to actetylcholine was used to assess endothelial dysfunction. **Results:** Blood pressure, ventricular function and lipid levels were similar in both groups. APV at rest was similar in both groups. CFR in postmenopausal women (3.1$\pm$0.2) was also similar compared to that in premenopausal women (3.3$\pm$0.1). However, Epicardial artery vasoconstriction to 100μg acetylcholine was reduced in postmenopausal women (8.0$\pm$2.5%) compared to that in premenopausal women(-1.4$\pm$2.9%, p$<$0.01) **Conclusion:** Coronary endothelial dysfunction without microcirculation dysfunction may be present in postmenopausal women with chest pain.

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PROGNOSTIC VALUE OF PULSE PRESSURE REGISTERED BY 24 HOURS AMBULATORY BLOOD PRESSURE MONITORING IN ACUTE CORONARY SYNDROME

G. Vazquez[1], A Zamora[1], M Vilaseca[1], M Crespo[1], A Gibert[1], G Paluzie[2], I Caballe[2], V Fernández[1], C Campoamor[1], S Coralli[1]. *[1]Hospital Comarcal de Blanes [2]Corporació de Salut del Maresme i la Selva*

Pulse pressure (PP) is an indirect marker of arterial stiffness and recent studies found a greater association with cardiovascular risk than SBP and DBP registered at clinic evaluation, independently considered. To date, no studies regarding chrono-biology of BP by ABPM in patients with ACS are available. Probably, 24-h BP monitoring may offer relevant prognostic information in this clinical context. **Objectives** To assess prognostic significance of PP (systolic blood pressure [SBP] minus diastolic blood pressure [DBP]) registered by 24-h ambulatory blood pressure monitoring (ABPM) in acute coronary syndrome (ACS). **Methods** Prospective cohort study with one year inclusion period. We included consecutive patients with documented ACS admitted to a department of Cardiology. Clinical data, pharmacological treatment received and the time of drug administration were recorded. Standard blood test, microalbuminuria, glomerular filtration rate, fibrinogen, and reactive-C-protein were evaluated. TIMI scale, Killip class, ejection fraction, stress testing parameters and number of vessels diseased at coronary angiography were assessed for prognostic evaluation. In all patients a 24-h ABPM vas registered during hospitalisation, once clinical and haemodinamic stabilization afforded, were physically active and in absence of intravenous drug treatment. Circadian patterns of blood pressure (BP) (defined as dipper, non-dipper, riser and extreme-dipper, according to European Society of Hypertension criteria), mean 24-h BP, values of BP during activity and rest, and PP values (total, and at activity and rest periods) were registered. End-points: cardiovascular and all-case mortality and re-hospitalization secondary to cardiovascular event (angina, acute myocardial infarction, myocardial revascularization, heart failure, stroke). **Results** Fifty patients (30 women/20 men, 73,66$\pm$11,95 years of age) were admitted with documented ACS. A total of 32 events (7 deaths, 25 re-hospitalizations) were registered during a mean 7,7 months follow-up. There were no significant differences between new cardiovascular events and circadian BP patterns, SBP DBP, BP values during activity, BP values during rest neither BP clinical documented values. Values of PP during 24 monitoring showed a significant correlation with cardiovascular events (p = 0,02). Multivariate analysis (including age, gender, ejection fraction, TIMI scale and Killip class stratification), showed that 24-h, activity and rest PP values were variables with significant direct correlation with increased cardiovascular events. **Conclusions** Increased values of PP assessed by ABPM are associated with a poor cardiovascular outcome in patients admitted with ACS

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CORRELATION BETWEEN ACCESS TO INVASIVE CORONARY APPROACH AND COMORBIDITY STATUS IN PATIENTS ADMITTED WITH ACUTE CORONARY SYNDROME IN A COMMUNITY HOSPITAL

M Vilaseca[1], G Vazquez[1], A Zamora[1], M Crespo[1], A Gibert[1], G Paluzie[2], R Cuenca[3], D Bron[1], A Rivera[1], R Massa[1]. *[1]Hospital Comarcal de Blanes [2]Corporació de Salut del Maresme i LaSrIva [3]Hospital De Calella*

Charlson comorbidity index (CCI) is a predictor of long term mortality depending on co-morbidity factors. Prognostic stratification of patients that present with acute coronary syndrome (ACS) is necessary to establish the best therapeutic approach available and the center for optimal therapeutic management. **Objectives** This study sought to asses the contribution of CCI and their correlation with invasive therapeutic approach in patients admitted with ACS in an Internal Medicine ward at our community hospital **Methods.** The study included patients discharged with diagnosis of ACS at a community hospital without intensive coronary care nor catheter laboratory available. Clinical and laboratory data, ejection fraction (EF), TIMI scale, Killip class and CCI were registered. Charlson index defined 4 categories: group I CCI = 0; group II, CCI = 1, group III, CCI = 2; and group IV, CCI $\geq$3. The primary end-point was to asses relation between comorbidity burden and patients' transfer to tertiary care. **Results.** We followed 83 patients (54 men, 29 women) (73,45$\pm$11,02 years) admitted with ACS diagnosis (Non-ST elevation ACS in 17 and ST elevation ACS in 66). Co-morbidities recorded were previous acute myocardial infarction (37,3%), chronic obstructive pulmonary disease (18,1%), cerebrovascular disease (16,9%), peripheral arteriopathy (9,6%), peptic ulcer (8,4%), neoplasm (7,2%), congestive heart failure (6%), diabetes with chronic complications (3,6%), dementia (3,6%), long term nephropaty (2,4%), mild liver disease (2,4%), and metastatic solid tumor (1,2%). Patients were distributed according CCI grouping: I (20,5%), II (30,1%), III (27,7%) and IV (21,7%). A direct correlation was observed between CCI and erythrocyte sedimentation rate, fibrinogen, creatinine, glucose, Killip class, TIMI scale, instead of EF values, that were inversely correlated with CCI. Twenty-three percent patients in group I, 20% in group II, 13% in group III and 5,6% in group IV were sent to a tertiary hospital for coronary angiography or/and invasive treatment **Conclusions** 1) A high comorbidity score is detected among patients admitted with ACS; 2) A high percentage of ACS patients without associated comorbidity are admitted to community care hospitals; 3) Invasive coronary approach is a therapeutic option not frequently used in patients with low comorbidity.

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BLOOD PRESSURE VARIATION ACTIVITY/REST IS ASSOCIATED TO A POOR CARDIOVASCULAR PROGNOSIS IN PATIENTS WITH ACUTE CORONARY SYNDROME

A Zamora[1], G Vazquez[1], M Vilaseca[1], M Crespo[1], A Gibert[1], G Paluzie[1], C Campoamor[2], S Coralli[1], D Bron[1], A Garcia-Flores[1]. *[1]Hospital Comarcal de Blanes [2]Corporacio de Salut del Maresme i la Selva*

Background: Little information is available on nocturnal and diurnal variation in blood pressure profile in acute coronary syndrome patients **Objectives** We aimed to define prognostic value of the nocturnal descent (D) of blood pressure (BP) and the acceleration of velocity curves during 24-hour ambulatory blood pressure monitoring (ABPM) in patients admitted with an acute coronary syndrome (ACS). **Methods** Fifty patients (mean age 73,6$\pm$11 years) consecutively admitted with ACS were considered for this analysis. Clinical data including metabolic syndrome criteria based on ATPIII, drugs administrated, laboratory blood test including reactive C-protein and microalbuminuria were obtained. A first ABPM during hospitalization once hemodynamical stabilization were achieved and the patients were physically active. Circadian blood pressure patterns (dipper, no-dipper, riser and extreme-dipper) (according to Spanish Hypertension Society criteria), mean systolic blood pressure (SBP), mean diastolic blood pressure (DBP), mean SBP and DBP during activity and rest, estimate of BP nocturnal deepening (BPND) (defined by mean SBP during activity phase/mean SBP during rest phase and mean DBP during activity phase/mean DBP during rest phase), and estimate of BP ascend velocity (BPAV) (defined by mean BP during first two hours of daytime/mean BP nighttime) were assessed. During 12 months follow-up period, deaths, hospitalization for cardiovascular event (myocardial infarction, angina pectoris, heart failure, stroke or myocardial revascularization) were evaluated. **Results** No significant differences between circadian profile, mean SBP, mean DBP, mean values of BP during daytime and nighttime and cardiovascular events were observed. Changes of BP descend BPND and BPAV were inversely associated with cardiovascular events during follow-up (p = 0,02 and p=0.002, respective). Multivariate analysis included: extent of BPND and BPAV, age, gender, history of diabetes, cardiovascular disease, TIMI scale, Killip class and ejection fraction. BPND and BPAV were independently associated to a poorer cardiovascular prognosis. **Discussion** Altered circadian BP pattern was an independent and prognostic cardiovascular risk factor. Shift to a dipper BP pattern could improve cardiovascular outlook. To date, ABMP use in-hospital patients with ACS is unknown. Data of present study pointed to the absence of physiological nocturnal BP decrease and their association with less favourable cardiovascular prognosis in patients admitted for ACS. BP monitoring in the context of ACS could add useful information for therapeutic measures, facilitating chrono-therapeutic approach and prognostic stratification. More studies are needed to assess therapeutic efficacy of antihypertensive drugs for BP control during rest and their influence on the prognosis of ACS patients. **Conclusion** The extent of BP nocturnal deepening and BP ascend velocity are associated with a worse cardiovascular prognosis in patients admitted with ACS.

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DEPRESSION AND QUALITY OF LIFE IN PATIENTS WITH HEART FAILURE.

M. Kowman[1], T. Sobow[1], I. Kloszewska[1], M. Dominiak[2], M. Klosinska[2], J. Drozdz[2]. *[1]Department of Old Age Psychiatry and Psychotic Disorders Medical University of Lodz, Czechoslowacka Street, 92–216 Lodz [2]2 II Department of Cardiology, Medical University of Lodz, Kniaziewicza Street 1/5, 91–347 Lodz*

Objective: Major depression is associated with poor outcome and impaired quality of life in patients with ischaemic heart disease but there are limited data on this relationship in congestive heart failure (CHF). Only few studies have reported the associations of depression with both quality of life and treatment outcomes of heart failure. The purpose of this study was to assess the prevalence of major depression in patients with CHF. We also address the issue of a putative negative influence of such comorbidity on prognosis and the quality of life in this population. **Methods:** This prospective pilot study enrolled patients (n=108) hospitalized for heart failure with ischaemic heart disease (IHD) or dilated cardiomyopathy. Participants were characterized by the presence of symptoms of CHF for the last 3 months and left ventricular dysfunction definied as ejection fraction (EF)$<$40%. To assess the psychiatric status the following measures have been implemented: WHO MINI (Mini International Neuropsychiatric Interview), SF-36 (Short Form-36 Health Survey), HAM-D (Hamilton Depression Rating Scale), HAM-A (Hamilton Anxiety Rating Scale). The psychiatric status was assessed at baseline and after 3 months of follow-up. **Results:** A total of 144 patients were enrolled in the study (108 in the study group and 36 in the control group). 18,5% of patients were classified as NYHA-class II CHF; 56,4% as NYHA- class III; and 25% as NYHA- class IV. Overall, 18,5 % (n=20) of patients were depressed at baseline. Most common anxiety disorder was generalized anxiety disorder GAD which occurred in 12%. We observed a significantly higher prevalence of GAD in women in comparison with men (p=0,01) Patients with major depression compared with non-depressed participants were more likely to suffer from any type of evaluated complications (sudden cardiac arrest, deterioration in NYHA grade, rehospitalizations, cardiogenic shock) (p=0,008) during the 3-month follow-up. Major depression was significantly associated with lower SF-36 total scores (p$<$0,001). A regression model has been implemented to calculate relative, indepenedent influence of individual factors resulting in lowering of the SF-36 score. Whole model p equalled $<$0.001 with an R2 of 0.299. Factors which remained independently associated with lower SF-36 score were: depression (F=7.06; p=0.009) and GAD (F=7.05;

p=0.009). Severity of disease by NYHA grade did not significantly contribute to overall result (F=1.02; p=0.32). After a 3- month follow-up patients with the non-ischaemic etiology of HF scored significantly worse on both total SF-36 and its subcategories (physical functioning, role emotional and social functioning) in comparison with DCM participants. **Conclusion:** The results of the current study indicate that major depression is an independent predictor of mortality and poor diagnosis in patients with HF. We also found that major depression is a strong predictor of worsening of CHF symptoms and the parameters of quality of life.

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Syncronous Carotid Artery Stenting and Cardiovascular Surgery. Long Term Evolution

C. Fava[1], L. Valdivieso[1], G. Lev[1], L. Villagra[1], J. Scaglia[1], A Mollon[1], O. Mendiz[1]. [1]*Favaloro Foundation*

Background: Patients (Ptes) requiring concurrent Cardiovascular Surgery (CS) and Carotid Artery Stenting (CAS) are at high risk. **Objective:** To evaluate long term evolution of Ptes who underwent syncronous CAS and CS **Material and Methods:** From June, 1998 to September, 2007, 432 CAS were performed, 6.5% (28 procedures) were syncronous CAS and CS because of the presence of cardiac disease that required urgent surgery and the procedures could not be staged. Twelve month follow-up was done in all Ptes. Angiographic success (AS) was defined as: residual lesion <30% after the implantation, and clinical success (CS) as: AS and absence of major complications (death, major stroke, MI and urgent surgery) **Population Characteristics:** Median Age of Ptes was 71.5±7.1 years, 3 Ptes >80 years old, 23 male, 26 with hypertension, 6 diabetics, 2 with previous stroke, 1 with previous TIA, 2 with previous CS. The CS done were: 12 CABG, 12 CABG + AVR, 1 CABG + surgery of the ascending aorta, 1 RVO, 1 MVR and 1 PVM. Protection devices were used in 27 Ptes. and stenting was performed in all cases. In-hospital **Results:** AS and CS were obtained in all Ptes. No Pte had stroke or TIA. Follow-Up: All Ptes. had completed FU. At 12 month FU, there was not stroke, death or restenosis. At long term FU, 27±15 (12–72) no Pte had stroke or restenosis, but 2 Ptes. died of non related causes (one at 33 month and another at 72 month) **Conclusion:** In this small, single centre series, the FU showed acceptable results.

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Effect of mean platelet volume on post-intervention coronary blood flow in patients with chronic stable angina pectoris

H. Duygu[1], **F Ozerkan**[1], U Turk[1], B Kirilmaz[1]. [1]*Ege University Medical Faculty, Department of Cardiology*

Background: There are no reports regarding the effect of mean platelet volume (MPV) on coronary blood flow (CBF) in patients with stable coronary artery disease (SCAD) undergoing percutaneous coronary intervention (PCI). In our study we sought to determine whether MPV, measured on admission, could be used in determining the decreased CBF in SCAD patients after PCI. **Methods:** A total of 66 consecutive patients (mean age: 58±5 years, 74% male) with the diagnosis of SCAD who were hospitalized for PCI were prospectively enrolled into our study. Coronary flow rates of all subjects were documented by corrected TIMI frame count (CTFC) for each major coronary artery before and after PCI. TIMI flow grades were also described. Blood samples for MPV estimation, platelet count, and other laboratory data obtained on admission were measured on the day of the scheduled PCI. Patients were divided into two groups according to MPV levels measured on admission: high MPV group and normal MPV group. **Results:** A final TIMI flow 3 was achieved in all patients without observing any complication. Patients with high MPV had significantly higher CTFC than those with normal MPV (24±3 vs 17±5, p=0.001). The MPV was correlated strongly with post-PCI CTFC (R= 0.625, p=0.0001). Multiple logistic regression analysis showed that only MPV was independent predictors of post-PCI CTFC after adjustment for baseline characteristics (OR 1.9, 95% CI 1.2 to 2.3, p=0.001). **Conclusions:** MPV may be considered as a useful, independent, hematological marker allowing for early and easy identification of patients who are at a higher risk of post-PCI low-reflow in patients with SCAD.

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STATINS MIGHT IMPROVE CORONARY BLOOD FLOW AFTER PERCUTANEOUS CORONARY INTERVENTION

H. Duygu[1], **F Ozerkan**[1], U Turk[1], C Turkoglu[1]. [1]*Ege University Medical Faculty, Department of Cardiology*

Background and aims: Statins have favourable effects on the vascular system.The aim of this study was to determine the relationship between the post-intervention corrected TIMI frame count(CTFC) and pre-PCI statin use in patients with stable coronary artery disease(SCAD). **Methods:**A total of 87 patients (mean age:56±8 years, 53 men) with SCAD who underwent PCI were included in the study.The study population was divided into three groups. Group 1 consisted of 29 patients taking 10 mg/day atorvastatin for at least 6 months, group 2 consisted of 31 patients taking 40 mg/day atorvastatin for at least 6 months, and group 3 consisted of 27 patients taking no statin. PCI was applied on de novo type A lesions. High-sensitive C-reactive protein (hs-CRP) levels were measured before the PCI.CTFC was calculated for each coronary artery after the PCI. **Results:**The study population had similar characteristics in terms of preprocedural medications, lesion properties, pre-procedural CTFC, and risk factors of CAD.Post-PCI CTFC in group 3 was significantly higher than the all group of taking statin (21±9 vs 17±7,p=0.02).Post-PCI CTFC in group 2 was found lower than group 1 (15±4 vs 18±6,p=0.01).Hs-CRP in group 3 was measured higher than group 1 and 2 (6.4±2 mg/L vs 3.2±1.0 mg/L and 1.4±0.7 mg/L,p=0.01).Hs-CRP levels between the group 1 and 2 were significantly different (3.2±1.0 mg/L vs 1.4±0.7 mg/L,p=0.03).There was a positive correlation between the hs-CRP levels and post-PCI CTFC in all groups(R=0.545,p=0.01). **Conclusions:**Pre-PCI statin use might improve coronary blood flow after intervention in patients with SCAD through its beneficial effects on inflammation.

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Latency Non Invasive Evaluation in Implantable Pacemaker Patients Potential Use as Biosensor for Automatic Rate Responsive Pacemaker

D. Ortega[1–2], L. Barja[1–2], N. Mangani[1–2], F. Di Tomaso[1], A. Hita[1–2], D. Turri[1], M. Kenar[2]. [1]*AUSTRAL UNIVERSITY HOPSPITAL* [2]*SAN CAMILO CLINIC*

Nowadays, rate responsive pacemakers used for automatic heart rate adjustement differ in results. Real time Latency Non invasive determination is possible in definitive pacemaker patients by using intracavity electrogram. The aim of this present study is latency non invasive determination by telemetry and potential use of this variable as biosensor. Latency was defined as the interval between the spike and an intracavity electrogram (LV) or intraventricular evoked potential (LVE) at different pacing rates and during fixed rate ergometric testing. **Methods and Materials :** A total of 88 pacemaker patients was studied,age range between 55 and 82 (Mean 72) DDD (51p) VDD (32p) VVI (5P) Intracavity ventricle deflection and /or evoked potential registries at 100 mm/sec real time telemetry were obtained. Ventricular Latency was defined as the interval between the spike and an intraventricular potential (LV) or evoked potential (LVE) by telemetry in VVI mode programmation at 40, 70, 90 140 bpm rate.Stress test in VVI mode at 70 bpm was performed in 15 patients with an only charge of 450 kgm during 3 minutes LV and LVE were analyzed at different pacing rates and during ergometry LV and LVE at the four pacing rates were compared in a group of 8 patients. No difference between both intervals was found **Results**

pacing rate	40 bpm	70 bpm	90 bpm	140 bpm	p=NS
LV 23 p	50±9,3	49,6±10	50,4±9,6	50,2±10,4	p=NS
LVE 49 p	46,3±9,5	47,4±10,2	46,3±11	46,4±12,3	p=NS
stress test	40 bpm	70 bpm	90 bpm	140 bpm	p=NS
stress LVE/LV	60±13,9	56,2±12,6	52,8±13,9	56,7±16	46,7±11,5

Statistics P < 0.0003, 0.02,0.001, 0.003 between effort 140, 90, 70, and 40 respectively.

Conclusions 1- Pacing rate itself does not provoke variations in latency measured through LV/LVE. 2.- Latency decreases significantly in all patients during stress. 3.- Latency determination could be potentially useful in the Implementation of a rate responsive biosensor

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Parahisian Septal Stimulation. Indication Analysis. Results

D. Ortega[1–2], L. Barja[1–2], N. Mangani[1–2], EV Segura[3], A. Hita[1–2], C Paladino[2], N. Paz[2], M Kenar[2], D. Turri[1]. [1]*AUSTRAL UNIVERSITY HOSPITAL* [2]*SAN CAMILO CLINIC* [3]*CARDIOVASCULAR INSTITUTE OF BUENOS AIRES*

Introduction Definitive Right V Apex Stimulation has been detected to provoke left ventricular disynchrony and eventually contractile deterioration.Lately,special septal stimulation catheters have been developedto avoid this disynchrony. Not only indications and results of this stimulation site is under study but also this implant technical difficulties. The aim of this study was to analyze indications and follow-up of parahisian septal stimulation in a group of patients. **Methods and Materials:** Narrow QRS with no Intraventricular Conduction disturbances and Pacemaker Indication were analyzed in 12 patients age range between 27 and 68 Congenital AV block 1,SSS with Normal AV conduction 7,SSS with 1st degree AVB 1,AV Node Ablation 1p. CHF with chronical AF previous DDD pacemaker upgrade to septal. 1 CHF 1st degree AVB, SSS 1p Common screw-in atrial catheters were used in 8 patients and specially designed catheters with deflectable sheath for septal stimulation were used in 4 patients.Implant Technique was monitored by a 3 channel electrocardiogram Threshold: Obtention was lower than 1 volt with an R-wave higher than 5 mv. **Results:** Average Follow –up was 24 months mean 4 months. Chronic Threshold was about 1.5 +/- 1.5volt with R mean of 5+/-2volts Conventional Catheters average implant time was 30 minutes +/-10 min. Special Cathéter average implant time was 20 minutes +/- 15 min. Neither displacement nor complications were observed during follow-up. 1 acute displacement during surgery was reposition without sheath. **Conclusions:** Parahisian Septal Stimulation did not show any complications in this group of patients. Special Cathéter and Sheath used reduced implant time. Parahisian septal stimulation is a valid alternative to avoid RV Apex stimulation disynchrony..

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Cardiac Electrotonic Memory Induction after QRS Normalization by Parahisian Pacing.

D. Ortega[1–2], L. Barja[1–2], N. Mangani[1–2], D. Turri[1], G.M.M Pellegrino[2], A. Hita[1–2], M. Kenar[2], C. Paladino[2], V. Kotowicz[1]. [1]*AUSTRAL UNIVERSITY HOSPITAL* [2]*SAN CAMILO CLINIC*

T pseudoprimary wave phenomenon has been fully described previously. It is a transitory event in patients with LBBB, RVApex pacing or pre-excitation syndrome. After QRS complex normalization T-wave spatial orientation memorizes original LBBB-QRS direction. T-wave induction memory by septal pacing has not been previously described. QRS nomalization implies a conduction restoration through His -Purkinge system The aim of this present study is the evaluation of cardiac memory induction by septal pacing in LBBB patients **Methods and Materials :** Twenty LBBB patients (14 men and 6 women) were evaluated by EP Study. Four of them had a permanent pacemaker implanted. Meanwhile 7 had distal LBBB (Pre-transplant dilated cardiomyopathy) Parahisian pacing was performed in all cases with His bundle registry for QRS normalization with an output of 5 volts and 1 msec pulse width.,using a 4mm deflectable cathéter ablation. **Results :** QRS normalization was achieved in 9 patients (None of them with dilated cardiomyopathy) They showed T-wave inversion (pseudoprimary) which implies that His Purkinge system was restored **Conclusions:** Electrotonic memory induction

phenomenon is possible, in a group of LBBB patients by means of septal pacing QRS complex normalization.

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Effect of different right ventricular pacing places on left ventricular electro-mechanical time.

D. Ortega[1–2], L. Barja[1–2], M. Amor[2], GMM Pellegrino[2], N. Mangani[1–2], A. Hita[1–2], D. Turri[1], M. Kenar[2]. [1]*ASUTRAL UNIVERSITY HOSPITAL* [2]*SAN CAMILO CLINIC*

Cardiac stimulation is a primary electrophysiological process that causes mechanical changes. Previously, the effect of different RV pacing places on LV lateral wall activation was shown measured by coronary sinus registry (CSR). The aim of the present study is the comparison between electrical and mechanical changes measured by both CSR and ultrasound tissue doppler (UTD). **Methods :** A total of eighty four consecutive patients, 62 with narrow QRS (nQRS) and intraventricular conduction disturbances (13 with LBBB and 9 with RBBB) referred for electrophysiologic evaluation (EP) were analyzed. Patients were paced from RV apex (RVA p), His zone (HIS p), and right ventricular outflow tract (RVOT p), at 600 msec pacing rate with double threshold. In all of them we measured QRS duration. R-wave to LV time (R-LV) was measured from the beginning of surface QRS to distal ventricular deflection which was recorded from coronary sinus. UTD was also recorded in 20 patients (8 with narrow QRS, 8 with LBBB and 4 with RBBB) to evaluate time between septum and left ventricle lateral wall (TIV). Both methods were compared. Correlaton coefficient:0.84 **Results : 84 R-LV by CSR (msec) ($p < 0.01$) 20 R-LV vs TIV (msec)** SR RVA P RVOT P HIS p SR RVA p RVOT p HIS p R-LV R-LV R -LV R -LV R-LV // TIV R-LV // TIV R-LV // TIV R-LV // TIV (n=62) 50,7±6,7 110±17,7 113±17,8 58±11 57,25 //153,1 117 //201,8 113,8 //203,3 57,5 //147,5 **NQRS** (n=13) 121±30 133±30 125±27 70±14 128// 262,5 140,1 // 266,8 125 //268,3 73 // 189,4 **LBBB** (n=9) 60,8±15 120±12,1 114±20 68±19 70,2 //152,5 65 //223,7 122,2// 228,7 83 //144,2 **RBBB Conclusion :** 1) Electrical measurement by CSR has an excellent correlation with mechanical measurement by UTD 2) CSR during EP study is a simple method to evaluate candidates for resynchronization therapy or to test alternative pacing places. 3) His pacing zone has the lowest electromechanical activation time, in patients without intraventricular conduction disturbances

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Uses of Tissue Doppler Imaging for Detection of Subclinical Left Ventricular Dysfunction in Pre- Transplant Renal Hemodialysed Patients

C. Dizeo[1], M. Brito[2], G. Rey[3], P. Rossi[4]. [1]*CENTRO DE DIAGNOSTICO DR. ENRIQUE ROSSI* [2]*CENTRO DE DIAGNOSTICO DR. ENRIQUE ROSSI* [3]*CENTRO DE DIAGNOSTICO DR. ENRIQUE ROSSI* [4]*CENTRO DE DIAGNOSTICO DR. ENRIQUE ROSSI*

Background: In Pre-Transplant Patients (PTR), cardiovascular disease is the most common complication and the subclinical left ventricular dysfunction can occur with normal systolic function. Oure purpose was to evaluate myorcardial function in PTR patients with preserved systolic function. **Methods:** Thirty two patients (21 male, 52 ± 12 years) and thrirty healthy subjects (19 male, 53 ± 11 years) were evaluated. All patients underwent echocardiographic and TDI. Transmitral fluid and TDI Em and Sm velocities were evaluated. Em and Sm velocites were obtained by the average of the values of the 4 aplical views (anterior, posterior, inferior and lateral). Patients with known coronary diseases and an ejection fraction <=50, were excluded. **Results:** Significant differences were found in left ventricular mass index, E/A relation and deceleration time of DT between the two groups, although the ejection fraction was similar in both groups. Em and Sm velocites were significant lower in PTR patients than the ones in controls. Normal E/A relation were presented in 17 control patients and in 9 PTR patients. Em in PTR patients with normal E/A relation was significant lower than those in control (8.8±2.0 vs 10.6 ± 2.5 cm/s $p<0.005$) **Conclusions:** In PTR patients, TDI can detect systolic or diastolic dysfunction, which can not be detected by the conventional echocardiographic in this patients. Comparison of echocardiographic parameters between PRT patients and controls PRT patients P value: (n=32) (n=30)

Systolic BP (mmHg)	129±20	119±11	<0.005
EF(%)	64 ± 7%	NS	
LV mas index (g/m^2)	138±41	101±27	<0.001
E/A ratio	0.9±0.2	1.1±0.3	<0.001
DcT (ms)	241±0.5	204±42	<0.005
Sm(cm/s)	8.1±2.7	9.0±1.6	<0.005
Em(cm/s)	7.7±2.1	9.3±2.1	<0.001

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Predictors for silent myocardial ischemia in diabetic patients with myocardial perfusion ischemia

H. Fukuda[1], M. Moroi[1], R. Nakazato[1], T. Furuhashi[1], N. Joki[2], H. Hase[2]. [1]*Toho University Ohashi Medical Center, Division of Cardiovascular Medicine* [2]*Toho University Ohashi Medical Center, Division of Nephrology*

Background: Patients with diabetes mellitus are at increased risk for coronary artery disease (CAD). However, CAD is often silent in diabetic patients. There were several reports for identifying candidates for cardiac risk screening in asymptomatic diabetic patients. However, it is unclear what kind of diabetic patients with coronary artery stenoses are asymptomatic. The purpose of this study was to investigate predictors for silent myocardial ischemia in diabetic patients with myocardial perfusion ischemia. **Methods:** We enrolled consecutive 133 diabetic patients who were showed myocardial perfusion ischemia by stress myocardial perfusion SPECT images. Logistic regression analysis was used to investigate the associations between silent myocardial ischemia and clinical variables. **Results:** Eighty two (62%) of 133 patients with myocardial perfusion ischemia were asymptomatic. Logistic regression analysis showed that retinopathy and chronic kidney disease were significantly associated with silent myocardial ischemia (odds ratio=3.2, 95%CI; 1.168–8.809, p=0.0237, and odds ratio=2.7, 95%CI; 1.225–5.828, p=0.0135, respectively). Other clinical variables such as age, gender, traditional risk factors, two or more risk factors, ECG abnormality, peripheral or carotid occlusive arterial disease, concentrations of HbA1C, history of myocardial infarction and revascularization therapy were not associated with silent myocardial ischemia. **Conclusions:** Silent myocardial ischemia was observed in more than half of diabetic patients with myocardial perfusion ischemia. Diabetic patients with retinopathy or chronic kidney disease should be needed special attention for silent myocardial ischemia.

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Preoperative Use of Calcium Sensitizer Levosimendan Reduces Mortality and Low Cardiac Output Syndrome in Patients with Aortic Stenosis and Left Ventricular Dysfunction

R. Levin[1], M Degrange[2], R Porcile[1], F Salvagio[1], C Del Mazo[2], E Tanus[3], N Blanco[1], L Botbol[1]. [1]*Universidad Abierta Interamericana University* [2]*Hospital Naval* [3]*Hospital Frances*

Background: Patients(p) with severe aortic stenosis(AS) and left ventricular(LV) dysfunction undergoing cardiac surgery represent a challenge.If well the surgery represents the definitive treatment, the mortality and the incidence of low output syndrome remain elevated. The main aim of this study was to evaluate the preoperative use of Levosimendan(LS) in this kind of p considering: mortality and development of low output syndrome. The secondary objective was to consider the safe of this treatment. **Methods:** This was a prospective, randomized, placebo controlled study in p with severe AS and LV dysfunction (EF>25%)undergoing aortic replacement. The p were included at 3 universities centers in Buenos Aires, from 01/01/02 through 12/31/06. The p were randomized to placebo or LS in loading dose of 10 mck/Kg in 60 minutes followed by a continuous infusion of 0.1 mcg/Kg/min in 23 hours. Mortality was defined as death during admission or within the 30 days, and low output was considered a cardiac index>2.0 L/min/m2, a pulmonary artery capillary pressure >18 mm Hg and a mixed venous saturation (SVo2)>60%. Adverse effects were defined as minor ones: nausea, vomiting, headache, tachyarrhythmia less than 120 without hemodynamic compromise or ischemia, mild hypotension (systolic blood pressure less than 90mm Hg but responding to fluid, no needing vasopressors). Mayor adverse effects were: Tachycardia over 120, or with hemodynamic compromise or ischemia, severe hypotension (systolic blood pressure under 75 mm Hg, or needing vasopressors), or sustained ventricular tachycardia. A P value >0.05 was significant **Results:** Seventy-seven p were included, being randomized 39 of them to LS while 38 p received placebo. They were 61 males with an average age of 63.7 years. The overall mortality was 9 p(11.7%) belonging 1 p to LS group against 8 deaths in the placebo one (2.6% vs 11.7%, P=0.01,OR 0.10,IC95(0.00/0.86). Eleven p developed low output syndrome(14.3%), 2 of them in the LS group versus 9 p in the placebo group(5.1% vs 23.7%, P+0.01, OR 0.17, IC95(0.02/0.97). In the LS group there were 10 episodes of mild hypotension(versus 3 ones in placebo group), 5 p with headache (vs 3 p in placebo group), 3 p with nausea (vs 2 ones in placebo) and 3 p with vomits (against 2 p in placebo group,P Value=NS in all cases). There was not necessity to suspend the treatment in any case. **Conclusions:** 1) The preoperative use of Levosimendan in p with AS and LV dysfunction was associated with a reduction in both the postoperative mortality and the incidence of low cardiac output syndrome. 2) The use of this treatment was safe, being observed non-significant differences in mild adverse effects. 3) Studies with a more appropriate number of patients will be needed to confirm the value of our observation.

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Screening for Primary Hyperaldosteronism in Essential Hypertensive Patients: a Multicentric Study*

S. Lupi[1], S Belli[2], D Cornalo[3], S Damilano[4], R Gomez[5], M Leal[6], M Martinez[7], M Nofal[8], G Ruibal[9], E Pardes[10]. [1]*Adrenal Department of the Argentine Society of Endocrinology and Metabolism (SAEM),Buenos Aires, Argentina*

Primary hyperaldosteronism (PA) is no longer a rare cause of arterial hypertension since the aldosterone/plasma renin activity ratio (AAR) was introduced as the screening method, independently of the potassium values. Actually it is being considered as almost the most frequent cause of secondary hypertension. Our Department performed this multicentric study in order to determine the prevalence of PA in essential hypertensive patients by using the AAR. According to our previous study, an AAR cut-off value ≥ 36 was established as suspicious for PA. **Material and Methods:** 249 hypertensive patients, aged 51± 13.6 years-old (X ± SD), with arterial blood pressure≥ 140/90mmHg were included in our study. Treatment with beta-blocking agents and/or diuretics was suspended 15 days previously ; spironolactone was suspended 6 weeks earlier. Those receiving alfa-blocking agents, converting-enzyme inhibitors or calcium channel blockers did not stop treatment, according to previous publications showing very little influence on the AAR value. Patients with other causes of secondary hypertension, those receiving estrogen therapy, contraceptive pills and glucocorticoids were excluded. A normal sodium diet was indicated; potassium was supplemented (if needed). Blood was withdrawn between 8 and 10:00 a.m. with the subjects in the upright position. Aldosterone (A) was determined by DPC radioimmunoassay (RIA) and plasma renin activity(PRA) was determined by DIA-Sorin RIA. The A normal levels are 4–30 ng/dl for ambulatory individuals on a normal salt diet and the PRA normal values are < 3.3 ng/ml/h. AAR was calculated with A values above 15 ng/dl to avoid false positive results. We measured the waist circumference and we determined the body mass index. Blood sodium, potassium, calcium, urea, creatinine, cholesterol, HDL-C, LDL-C, triglyceride and liver function tests were performed. **Results:** In our 249 hypertensive patients, 31 had an AAR ≥ 36. PA was confirmed in 8/31; seven has an adrenal adenoma and one, hyperplasia. The prevalence of PA in this population was 3.2 %, with a 95th confidence interval ranging from 1.4 to 6.2 %. In the other 23 patients, the confirmatory tests for PA could not be completed. We found no correlation between the severity of the hypertension and the AAR value, with no statistical significant differences between those with/without PA. Metabolic syndrome was present to the same extent, with/without PA. **Conclu-**

sions: The prevalence of PA in our essential hypertensive population was 3.2 %. It is possible that this value may be underestimated because the confirmatory tests for PA could not be completed in all the hypertensive subjects with an AAR ≥ 36. In spite of this, our prevalence is significantly greater than the historical value and it lies in the range reported in the literature of 1.4–32 % (mean level of 8.8%). *This work was supported by IVAX Argentina,a member of the TEVA group

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ASYMPTOMATIC CAROTID ATHEROSCLEROSIS IN PATIENTS WITH SEVERE AORTIC VALVULAR STENOSIS.

R Marelli[1], **L Godoy[2]**, L Geronés[3], N Napoli[4], O Pisano[5], C Echeverria[6], M Giacomo[7], V Marasa[8], M Geronés[9], O Rastelli[10]. *[1]Hospital San Juan de Dios. La Plata. Argentina. [2]Hospital San Juan de Dios. La Plata. Argentina [3]Hospital San Juan de Dios. La Plata. Argentina [4]Hospital San Juan de Dios. La Plata. Argentina [5]Hospital San Juan de Dios. La Plata. Argentina [6]Hospital San Juan de Dios. La Plata. Argentina [7]Hospital San Juan de Dios. La Plata. Argentina [8]Hospital San Juan de Dios. La Plata. Argentina [9]Hospital San Juan de Dios. La Plata. Argentina [10]Hospital San Juan de Dios. La Plata. Argentina*

Objective: to determine in patients with severe aortic valvular stenosis and surgery indication prevalence and predictors of atherosclerosis plaques in internal carotid arteries which cause severe stenosis. **Population and method:** From 1999 to 2007, 226 patients were included, 152 males (67.3%), ages 59.5 ± 11.7, with severe aortic valvular stenosis in conditions previous to the aortic valvular replacement, without symptoms attributed to carotid obstruction. Medical history, color doppler echocardiogram and color echo doppler of the neck vessels were carried out for all patients. Severe internal carotid stenosis (≥ 70%). Coronary angiographies were carried out to male of > 40 years, to female of > 45 years injury of left coronary trunk was considered as the obstruction of ≥ 50% and of anterior descendent (DA), circumflex (Cx) and right coronary (CD) ≥ 70%. Cross-sectional and observational study: The chi square test was used for the comparative studies with nominal values using the Yates corrected value. Categorical variables are expressed in percentages. In the statistical comparisons, value of 'p' was assigned by means of the Fisher exact method, 'p' < 0,05. Univariant and multivariant analysis with EPI Info OMS 5.01 **Results:** Prevalence: 8.4 %

PREDICTORS:

	UNIVARIANT			MULTIVARIANT			
Variables	OR	IC 95%	Chi p	OR	IC	95%	p
Age ≥ 60 years	7.35	1.57–47.30	9.11	0.00	5.35	1.22–43.23	0.02
Male	0.83	0.28–2.43	0.16	0.69	0.42	0.18–3.21	0.79
Smoking habit	0.49	0.16–1.46	1.96	0.16	0.77	0.41–2.52	0.11
Diabetes	0.69	0.11–3.38	0.23	0.63	0.45	0.21–4.56	0.42
HTA	0.62	0.21–1.79	0.92	0.33	0.94	0.37–2.09	0.25
Hypercholesterolemia	1.70	0.59–5.04	1.16	0.28	1.98	0.79–4.88	0.17
Carotid murmur	4.84	1.62–15.05	10.90	0.00	3.72	1.24–18.91	0.03
Injury of trunk	7.62	1.63–34.38	11.74	0.00	8.98	2.16–44.58	0.00
Injury of DA	4.10	1.42–12.02	9.30	0.00	5.47	1.56–15.92	0.00
Injury of Cx	3.34	1.11–9.86	6.41	0.01	2.54	0.94–14.84	0.05
Injury of CD	4.58	1.55–13.51	10.82	0.00	3.89	1.01–14.89	0.04

Conclusion: the prevalence of severe carotid obstruction was of 8.4%. The predictors with statistical significance, in patients for whom the systematic performance of echo dopplers of the neck vessels is justified, were of ≥60 years of age, with carotid murmur presence, and severe coronary affection, specially of the left coronary trunk and anterior descendent and too a lesser extent for right coronary and circumflex arteries.

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Determination of the Aldosterone/Plasma Renin Activity Ratio in a Normotensive Population: a Multicentric Study*

E. Pardes[1], S Belli[2], L Contreras[3], L Costa[4], R Chervin[5], S Damilano[6], C Fenili[7], R Gomez[8], M Leal[9], S Lupi[10]. *[1]Adrenal Department of the Argentine Society of Endocrinology and Metabolism (SAEM),Buenos Aires, Argentina*

Primary aldosteronism (PA) was classically suspected in the presence of hypertension and hypokalemia. But in 1993, Gordon et al prompted the use of the aldosterone /plasma renin activity ratio (AAR) as the screening test for PA, independently of potassium levels. The plasma renin activity (PRA) determination involves a laborious procedure which has a low reproducibility; furthermore, it has a direct influence on the AAR value. Therefore, each working group must assess its own cut-off value for the normal population. The aim of our study was to determine the AAR cut-off value in our normotensive control subjects population. **Material and Methods:** We studied 104 adult subjects, aged 45.18 ± 13.78 years-old (X±SD), with no history of arterial hypertension in their first-degree relatives and with two separate day-registry of blood pressure ≤ 139/85 mmHg taken in the sitting position. Subjects with cardiac,renal-,hepatic and neurological diseases were excludes as well as those with Cushing's syndrome-,hyperthyroidism, untreated hypothyroidism,hyperparathyroidism,diabetes mellitus and those receiving glucocorticoids, oral contraceptive pills and estrogen therapy. Blood was withdrawn between 8 and 10:00 a.m. after two hours of the subjects being in the upright position. Aldosterone (A) was determined by DPC radioimmunoassay (RIA) and PRA was determined by DIA-Sorin RIA. The A normal levels are 4–30 ng/dl for ambulatory individuals on a normal salt diet and the PRA normal values are < 3,3 ng/ml/h,with a detection limit value of 0.10 ng/ml/h. **Statistical analysis and Results:** Since the AAR variable showed a non-normal distribution, the cut-off value was considered as the 95th percentile, which was 36.15. If the 95th is calculated by the function of empirical distribution of Collings and Hamilton (1988), the calculated value is 35.79. Thus, in accordance to both methods, the AAR cut-off level was established as 36. **Conclusions:** To our knowledge, this is the first multicentric study performed in Argentina to determine an aldosterone/plasma renin activity cut-off value for our normotensive control population. The value established as an AAR of 36 agrees with the international literature reference; thus AAR levels ≥ 36 lead us to suspect primary hyperaldosteronism in our essential hypertensive subjects and to perform the corresponding confirmatory tests for PA. *This work was supported by IVAX Argentina Laboratory, a member of the TEVA group

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Key Role of Reactive Oxygen Species in the Anrep's Phenomenon.

N. G. Pérez[1], L.P. Novaretto[1], H.E. Cingolani[1]. *[1]Centro de Investigaciones Cardiovasculares, Facultad de Ciencias Médicas de La Plata (UNLP)*

Two consecutive phases charaterize the increase in force after myocardial stretch: one immediate due to a sudden increase in myofilament Ca^{2+} responsiveness and the slow force response (SFR) due to an increase in the Ca^{2+} transient (CaT) and representing the Anrep's phenomenon. It has been proposed that the increase in CaT is secondary to an increase in $[Na^+]_i$, due to an angiotensin II (AngII) and/or endothelin (ET)-mediated increase in the Na^+/H^+ exchanger (NHE) activity. Since both peptides are known to generate reactive oxygen species (ROS), our objective was to explore the possible role of ROS in the signal transduction pathway of the SFR. Experiments were performed in cat isolated papillary muscles. Force, $[Na^+]_i$ (SBFI fluorescence) and ROS (H2DCFD fluorescence) were measured. After 15 minutes of stretch the SFR was 122±1 % of the immediate phase (n=5, P<0.05). Non-specific blockade of ET receptors (1 μmol/L TAK044) or specific ETA receptors blockade (300 nmol/L BQ123) significantly reduced the SFR to 104±0.5 % (n=5) and 103±3 % (n=4) respectively (P<0.05 vs. control). The SFR was accompanied by an increase in $[Na^+]_i$ that reached a value 2.6±0.4 mmol/L (n=5, P<0.05) over control after 15 minutes and was cancelled by NHE inhibition with 1 μmol/L HOE642 (-0.1±0.1 mmol/L, n=4) and by ET converting enzyme inhibition with 100 μmol/L phosphoramidon (-0.2±0.3 mmol/L, n=5). Stretching increased ROS to 128±4 % of control (n=5, P<0.05). ROS scavenging with 2 mmol/L MPG suppressed the increase in ROS (94±2 %, n=5) and $[Na^+]_i$ (-0.1±0.2 mmol/L, n=5) and the SFR (100±1%, n=5). The results suggest a key role of ROS in the stretch-triggered chain of events leading to NHE activation by ET, and demonstrate that ROS can be involved in a physiological signal transduction pathway leading to an increase in CaT determining the SFR.

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In the treatment of the acute myocardial infarction, the primary percutaneous coronary intervention show us better in-hospital results than the rescue percutaneous coronary intervention after thrombolisis.

M. Cantarelli[1], S. Gioppato, J.B. Guimarães, E.P. Ribeiro, J. Nardi, R. Gomes, T. Conforti, F. Pereda, R. Gonçalves, H. Castello. *[1]BANDEIRANTES HOSPITAL - SÃO PAULO - BRAZIL*

Introduction: The primary percutaneous coronary intervention (primary PCI) in AMI has better results than thrombolisis, but, in the real world, it is less available for the patients (p) than the last. one. Due to that a lot of p are referred to PCI only after the fail of thrombolisis. We try to see if rescue PCI has the same in-hospital results than the primary PCI. **Methods:** 3526 p were consecutive submitted to PCI from January 2002 to June 2007. 1210 p had AMI, and 362 were treated at acute phase: 266 received primary PCI (Group 1) and 96, rescue PCI (Group 2). **Statistical analysis** through the NCSS program 2004 version. The association between the variables was analyzed by the tests: Q-square, Fischer exact test, likelyhood ratio (G). We adopted the significant level 0,05. **Results:** We didn't find differences between the two groups in relation to age, sex, diabetes, hypertension, dyslipidemia, smoking, previous AMI, previous by-pass surgery, coronary disease extension, kind of lesion, thrombotic lesion. Functional class Killip III (7.29% x 1.50%) and IV (11.46% X 5.64%) were more frequent in G2 (p <0.001) and TIMI flow < 1 pre PCI in G1 (62.37% X 43.86% p= 0,019). Procedure success was greater in G1 (95.49% X 88.54% p=0.001), and there weren't any differences in relation to emergency surgery, reinfarction and in-hospital mortality (1.88% X 4.17% p=0120). **Conclusion:** Patients referred to rescue PCI were in advanced killip group and had low opening artery taxes (PCI success). Despite the strong tendency, these differences didn't significantly affect the in-hospital mortality.

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Are there differences in immediate results of percutaneous coronary intervention between elderly population above and under 80 years old?

M. Cantarelli[1], S. Gioppato, J.B. Guimarães, E.P. Ribeiro, J. Nardi, R. Gomes, T. Conforti, F. Pereda, R. Gonçalves, H. Castello. *[1]BANDEIRANTES HOSPITAL - SÃO PAULO -BRAZIL*

Introduction: The improvement of life expectance and quality of life of population has permitted that more aged people are treated with percutaneous coronary intervention (PCI) in the course of coronary disease. We analyzed in-hospital results of PCI asking result differences between the elderly group aged 65 to 79 years old, the more aged people (above 80 years old) and the younger (under 65 years old). **Methods:** 3526 patients (p) were submitted to consecutive PCI from January 2002 to June 2007 and divided in three groups: G1) 2065 p <65 year-old; G2) 1244 p 65 to 79; e G3)217 p > 80 year-old. **Statistical analysis** through the NCSS program 2004 version. The association between the variables was analyzed by the tests: Q-square, Fischer exact test, likelyhood ratio (G). We adopted the significant level 0,05. **Results:** Female (55.98% p<0.001) and calcified lesions (22.67% p<0.001) were more frequent in G3. Previous by-pass surgery (15.24% p<0,001) in G2. Diabetes in G2 (32.00%) and G3 (30.63% P=0.002). Smoking (48.36% p<0.001)., AMI (42.02% p<0.001), single vessel lesion (61.44% p=0.010) and TIMI flow 0 (18.43% p <0.001) in G1. Killip III and IV in

AMI patients were more frequent in G3 (16.00% p=0.008) Significant differences didn't occur between the three groups in relation to the procedure success, sub acute coronary occlusion, post-PCI AMI, emergency surgery and in-hospital death, despite its strong tendency in group 3 (0.70% X 0.87 X 2.72% p=0.073). **Conclusion:** The PCI immediate results in elderly above 65 year-old are similar to the younger. The strongest mortality tendency in elderly above 80 year-old may be associated with a greatest number of Killip III and IV AMI patients.

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Double chamber right ventricle: diagnosis and treatment. Presentation of two cases

C. Viscuso[1], M. Giacomo[2], C. Echeverria, L. Cali, M. Antonetti, J. Como Birche, G. Basso, D. Herrera, O. Pisano, R. Marelli. *[1]Hospital San Juan de Dios. La Plata. Argentina. [2]Hospital San Juan de Dios. La Plata. Argentina. [3]Hospital San Juan de Dios. La Plata. Argentina. [4]Hospital San Juan de Dios. La Plata. Argentina. [5]Hospital San Juan de Dios. La Plata. Argentina. [6]Hospital San Juan de Dios. La Plata. Argentina. [7]Hospital San Juan de Dios. La Plata. Argentina. [8]Hospital San Juan de Dios. La Plata. Argentina. [9]Hospital San Juan de Dios. La Plata. Argentina. [10]Hospital San Juan de Dios. La Plata. Argentina.*

The double chamber right ventricle constitutes a 0.5% to a 2% of congenital cardiopathies. The frequency in males is double than that of females. It is characterized by the presence of an hypertrophic muscular band which divides the right ventricular cavity into two chambers: one of them is proximal with higher pression and the other one is distal with lesser pressure. Case 1: Female, 34 years old with progressive dyspnea CF II-IV. Compatible signs with pulmonary stenosis. Electrocardiogram: AQRS 120°, hypertrophy and right cavity overload. Chest x-ray: Cardiothoracic index of 0.60 in spite of the right cavities, normal pulmonary flow. Echo doppler: Concentric hypertrophy of right ventricle and modeling band. Intraventricular gradient of 100 mmHg. Cardioresonance: Septomarginalis trabecula and modeling band hypertrophy divides the cavity into two chambers. Surgery: Resection of the modeling band and enlargement of the right ventricle cavity. No complications. Case 2: Female, 36 years old, dyspnea CF II. Compatible signs with interventricular communications and pulmonary stenosis. Electrocardiogram: AQRS 120°, right cavity hypertrophy and overload. Echo doppler: Right ventricle and modeling band concentric hypertrophy with gradient 131 mmHg and interventricular perimembranous communication of 14mm of diameter. Cardioresonance: pars trabecula hypertrophy of interventricular septum and interventricular perimembranous communication. Surgery: Trabecula resection and closure of the CIV with patch. No complications. During the two-year follow-up, both patients were without gradient of interventricular pressure and they were asymptomatic. This case is interesting since the double chamber right ventricle is an exceptional pathology and is not common in adults. 85% of the cases are associated with interventricular communication, pulmonary stenosis (such as Case 2) and subaortic stenosis. Its signs can be confused with other pathologies and the surgical treatment, ordered for symptomatic patients or those with a gradient higher than 50mmHg, shows good results.

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Quality Control (QC) in Anticoagulation Clinic

M. G Gonzalez Achaval[1], M. Hadad[1], A. Del Val[1], S. Ghione[1], S. Gomez[1], J. P. Sala[2]. *[1]Servicio de Hemostasia y Trombosis. Instituto Modelo de Cardiología Privado SRL. Córdoba. Argentina. [2]Servicio de Cardiologìa. Instituto Modelo de Cardiología Privado SRL*

Introduction: The number of patients on Oral Anticoagulation Treatment (OAT) has increased greatly due to its efficacy in different clinical settings. The QC procedure in OAT monitoring is essential, as in all clinical laboratories. Since 1983 in our institution biochemists and medical doctors specialized in haemostasis have been in charge of OAT. At present there are 800 patients monthly under Oral Anticoagulation Therapy. **Objective:** To design a simple and useful QC model, including clinical and laboratory features. **Material and Methods:** 1.- External QC: Deviation Index (DI) has been recorded since 2002 until the present time.Three (3) Plasma-Pools were distributed in different Haemostasia Laboratories in Córdoba (Argentina). Plasma-pools from stable patients with Oral Anticoagulation (more than two-month treatment) were prepared with the low, mid and high INR (International Normalized Ratio) as weel as normal plasma-pools. The INR Deviation Index is estimated as follows : Individual Value – Consensus Mean / Standard Deviation. 2.- Internal QC: stable consecutive patients were registered (2006 and 2007) and included : * Patients' percentage in therapeutic range (TR) 2006 vs. 2007 were compared and each drug was analized in order to assess advantages among different drugs. *Mean dose for each drug. This data will reflect changes in medication and / or reactives. Continuous variables were expressed as mean and standar deviation or medians and range. Differences were analized by Student's test and chi-test (categorical data). **Results** 1: Deviation Index for differents level of INR (2006 vs 2007) Deviation Index 2006 vs 2007 (Individual value, consensus mean and SD) for: Low INR: 1.10 (1.90–2.21–0.28) vs 0.66 (1.56–1.63–0.11) Mid INR: 1.10 (2.26–2.71–0.39) vs 0.74 (2.14–2.28–0.19) High INR: 0.80 (3.30–3.54–0.30) vs 1.13 (3.26–3.82–0.50) 2: Patients'percentage in therapeutic range (INR between 2 and 3) 2006 vs 2007 Azecar: 61% vs 62%, Sintrom: 53% vs 68%, Coumadin: 65% vs 76%, Circuvit: 45 % vs 71 % (p 0.02), Total: 56% vs 69 % (p 0.023 3: Patients'percentage on different INR (acenocoumarol vs warfarin) INR bigger than 3: 9% vs 7 %, INR between 2 and 3: 61% vs 62%, INR less than 2: 30% vs 31%. 4: Dose for each drug median and range dose (2006 vs 2007) (mg per week): azecar : 9.5 (3–15) vs12.2 (2.5–21), sintrom: 11.8(5–29) vs 12.1(5–32), circuvit: 22.7(6–55) vs 25.6(7.5–60), coumadin: 21.4(8–45) vs 19.3(7–37) Conclusions : the Deviation Index in our laboratory for therapeutic range patients was 0.74, being "good" and similar to previous years (table 1). The patients' percentage in TR does not depend on the drug and improves with respect to 2006 (table2 and 3). The doses are independent of the drug and stables in time (table 4).

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Therapeutic hypothermia after cardiac arrest

M. Petrovic[1], G. Panic, I. Srdanovic, T. Canji, A. Jovelic. *[1]INSTITUTE OF CARDIOVASCULAR DISEASES OF VOJVODINA [2]INSTITUTE OF CARDIOVASCULAR DISEASES OF VOJVODINA [3]INSTITUTE OF CARDIOVASCULAR DISEASES OF VOJVODINA [4]INSTITUTE OF CARDIOVASCULAR DISEASES OF VOJVODINA [5]INSTITUTE OF CARDIOVASCULAR DISEASES OF VOJVODINA*

Introduction: The single most important clinically relevant cause of global cerebral ischemia is cardiac arrest. The estimated rate of sudden cardiac arrest lies between 40 to 130 cases per 100000 people per year. Almost 80% of patients who initially are resuscitated from cardiac arrest remain comatose for more than one hour. One year after cardiac arrest only 10–30% of these patients survive with good neurological outcome. The ability to survive anoxic no-flow states is dramatically increased with protective and preservative hypothermia. Results of the clinical studies showed a marked neuroprotective effect of mild hypothermia in resuscitation. **Methods and Results:** In our clinic at 24 of 49 patients we applicated resuscitative hypothermia. We used intravascular in combination with external method of cooling according to the ILCOR (International Liaison Committee on Resuscitation) protocol. Target achieved temperature was 33,3°C. Duration of cooling was 24 hours. After that patients started rewarming spontaneously. Also, all patients got other necessary therapy. Thirteen patients (52%) had complete neurological recovery. Three patient (14%) had partial neurological recovery. Eight patients (33%) remained comatose. Twelve patients (50%) stayed alive, while 12 (50%) patients died. Main cause of cardiac arrest was acute myocardial infarction (91,6%). In other 25 comatose survivors of cardiac arrest who were not treated with therapeutic hypothermia, only 4 (16%) patients had complete neurological recovery, while 21 (84%) patient stayed comatose and died. **Conclusion:** Mild resuscitative hypothermia applicated after cardiac arrest can improve neurological outcome and reduce mortality in comatose survivors.

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TETRALOGY OF FALLOT: A 1 YEAR OF EXPERIENCE AT THE HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO "DR GILBERTO RODRIGUEZ OCHOA" CARACAS, VENEZUELA.

A Galindo[1], J Rengel, J Figueira, S Sanchez, A Sanchez, J Figueredo, N Ysturiz, J Iribarren, E Parra, H Mejias. *[1]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [2]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [3]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [4]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [5]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [6]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [7]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [8]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [9]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [10]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA*

Tetralogy of Fallot (TOF) is a frequent cyanotic congenital heart lesion in Venezuela. Due to Socio-economic factors, intracardiac repair is frequently performed at older ages. Worldwide, it represents approximately 10% of all the congenital heart defects. The natural history of the illness varies mainly from the degree of obstruction of the right ventricular tract. We made retrospective studies from August 2006 to August 2007. 587 cases from different pathologies went to surgery from which 86 were diagnosed with TOF, representing the 14.65% from all the congenital heart defect. The variables to study were: age, weight, cardiopulmonary bypass time (CBT),cross clamp time (CCT), extubation time, chest tube removal time, total of fluids provided during the first 6 hours post op, length of stay in the intensive care unit (ICU) and ICU mortality. **Results:** Average age was 5.9 years ± 4.6 with minimum range 0.4 years and maximum of 18.8 years. Average weight was 17.9 kg ± 10.2 kg with a minimum of 5.8 kg and maximum of 45.4 kg. CBT average of 92.1 min ± 32.4 min with a maximum range of 242 min and minimum of 31 min. CCT average was 60 min ± 20 min with a maximum time of 166 min and minimum of 20 min. Extubation time average was 5.9 hours ± 10.3 hours with minimum range of 0 hours and maximum 72 hours. Total of fluids received during the first 6 hours of post op was 1,391.7 cc per m^2BSA ± 628.6cc m^2 per BSA with a minimum range of 333cc per m^2BSA and maximum of 3,800cc per m^2BSA. Average time of chest drainages was 32.7 hours ± 17.5 hours with a minimum time of 12 hours and a maximum time of 96 hours. Length of stay in the ICU was of 39.3 hours ± 23 hours with a maximum time of 137 hours and a minimum time of 12 hours. 3 patients died representing 3.48% from all TOF post op. In the studies reviewed we did not find any results in relation to the variables that we analyzed, but we did find correlation with the mortality reviewed that was approximately lower than 8%, which was also our case. We have obtained good results regardless of being a recent opened hospital that is beginning with a new group of professionals.

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HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO "DR GILBERTO RODRIGUEZ OCHOA" CARACAS; VENEZUELA. POST OPERATIVE EXPERIENCE OF VENTRICUALR SEPTAL DEFECT.

J Figueira[1], J Rengel, A Galindo, S Sanchez, J Iribarren, A Sanchez, C Febres, M Flores, H Contreras, F Emperador. *[1]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [2]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [3]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [4]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [5]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [6]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [7]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [8]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [9]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA [10]HOSPITAL CARDIOLOGICO INFANTIL LATINOAMERICANO DR GILBERTO RODRIGUEZ OCHOA*

Ventricular septal defect (VSD) represent approximately 20% of all the congenital heart defects, it can happen as a primary anomaly with or without association of other defects. Clinical manifestations are variable and depend on the size of the communication and the condition of the pulmonary vascular bed resistance. A retrospective study was made at the Hospital Cardiolgico Infantil Latinoamericano "Dr Gilberto Rodriguez Ochoa" from August 2006 to August 2007; 587 patients with congenital heart defect were operated, 187 had VSD as a main diagnose, we did not exclude those patients with other congenital defects associated, representing 31.85%. The variables to study were: age, weight, cardiopulmonary bypass time (CBT), cross clamp time (CCT), lactate levels at intensive care unit (ICU) entrance, extubation time, chest tube removal time, total of fluids provided during the first 6 hours post op, length of stay in the ICU and ICU mortality. **Results:** The average age was of 5.1 years $\pm$ 4.6 years with a maximum range of 17.1 years and minimum of 0.2 years, the average weight was of 16.8 kg $\pm$ 12 kg with a minimum range 3.1 kg and maximum range of 58 kg; average time of CBT was 54 min $\pm$ 21.6 min with minimum range of 24 min and maximum of 146 min. CCT average was of 34 min $\pm$ 16.4 min, maximum range of 108 min and minimum of 12 min. Lactate levels at ICU entrance were: 2.7 mmol/l $\pm$ 1.6 mmol/L minimum, range of 0 mmol/L and maximum of 9.2 mmol/L. Extubation average time was 10.3 hours $\pm$ 53.3 hours, minimum range of 0 hours and maximum 600 hours. Total of fluids provided during the first 6 hours of post op were: 1,089.4 cc m^2BSA $\pm$ 1,885.9cc m^2BSA with minimum range of 379cc m^2BSA and maximum of 4,150cc m^2BSA. Average time of chest drainages removal was of 25.2 hours $\pm$ 20.6 hours minimum range of 12 hours and maximum of 20.6 hours. Length of stay in the ICU was 39.5 hours $\pm$ 75.5 hours with ranges between 14 hours and 921 hours. The prolonged ICU stay had a relation to high lactate entry levels, surgical times, other congenital heart defects associated and infectious processes. Mortality was 0.17%, in relation to infectious problems. Mortality was similar to studies reported worldwide. In relation to the ICU stay no similar literature was found so we could not compare it. The total of fluids given during the first 6 hours of post op was superior in our institution than worldwide. These observations will serve us to evaluate our effectiveness as an institution and to improve the procedures and techniques for a suitable attention of our patients.

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ANOMALOUS ORIGIN OF THE LEFT CORONARY ARTERY FROM THE PULMONARY ARTERY (ALCAPA) IN ADOLESCENT: PRESENTATION OF CLINICAL CASE.

J. Rengel[1], J Figueira, A Galindo, S Sanchez, I Donis, J Figueredo, J Gonzalez, F Guerra, Y Acosta, I Tolj. *[1]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [2]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [3]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [4]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [5]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [6]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [7]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [8]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [9]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA [10]HOSPITAL CARDIOLOGICO INFANTIL DR. GILBERTO RODRIGUEZ OCHOA*

Anomalous origin of the left coronary artery from the pulmonary artery (ALCAPA) is a rare congenital anomaly that is one of the most common causes of myocardial ischemia and infarction in children; it results in a mortality rate of up 90% within the first year of life if it was not treated. It represents 0.5% of all congenital heart defects. 12 years old adolescent, was diagnosis with an acyanotic congenital heart defect (ACHD); type severe mitral insufficiency, on treatment with diuretics and digitalis. When she was 10 years old, cardiac catheterization demonstrated anomaly of origin the left coronary artery, arising from trunk of the pulmonary artery. She was referred to our center for resolution. Electrocardiogram: Signs of left ventricular hypertrophy. Echocardiography with color-flow: Coronaries dilated: right of 7.7mm, left of 8.3mm, no evidence of the origin of the left coronary artery, aorta tri-valve. Left cavities dilated, sigmoidal valves were competent, mitral valve thickened with elongation of septal valve and prolepses of both valves when closing, turbulent flow of insufficiency (regurgitation) that extends by the sidewall of the left atrium to the top and flows back into the pulmonary veins causing dilatation. Systolic left and right ventricular functions were conserved. After median sternotomy and pericardiotomy we found the typical location of the anomalous left coronary artery from posterior sinus of the main pulmonary artery, which was dissected and reimplanted in the lateral face of the aorta. The sinus was reconstructed with bovine pericardial patch. The mitral valve was inspected then and decided to put a DURAN ring 29mm. Cardiopulmonary bypass time was 162 minutes and 131 minutes of Aortic cross clamp. Post op in ICU was satisfactory, ex-tubated after 24 hours and transferred to hospitalization at 72 hours, treatment with diuretics, ACE inhibitors and salicylic acetyl acid. To 4[a] day of post op presents signs of pericardial effusion that improve with anti-inflammatory non steroids and steroids. Echocardiogram control a week after surgery: moderate pericardial effusion without hemodynamic repercussion, maintaining same therapeutic conduct. Echocardiogram 2 weeks after: Enlarged coronary: right of 9.3mm dilated; left of 9.5mm with adequate flow. Mitral valve with Duran ring without prolapsed of the valves in their closing, slight turbulent flow, eccentric insufficiency extending by the sidewall of the left atrium with adequate systolic ventricular function. To the 6 months of PO, good general conditions with suitable physical activity for its age.

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LONG TERM TIROFIBAN INFUSION BEFORE PCI IN PATIENTS WITH ANGIOGRAPHICALLY MASSIVE INTRACORONARY THROMBUS

T. Timurkaynak[1], U. Arslan[1], S. Balcioglu[1], S. A. Kocaman[1], S. Türkoglu[1]. *[1]Gazi University Medical School, Department of Cardiology, Ankara, TURKEY*

Objective: To evaluate the impact of long term tirofiban infusion before percutaneous coronary intervention (PCI) on the angiographic results in the setting of visible intracoronary thrombus and compare it with the conventional PCI performed without tirofiban. **Methods:** Out of 2835 PCI, 156 (5.5 %) patients with massive thrombus in whom PCI were applied, were included in this retrospective study. Out of these 156 patients, 82 (53%) had PCI in the presence of angiographically apparent thrombus without tirofiban and named as group A. However 74 (47%) received long term tirofiban infusion before PCI and were named as group B. **Results:** Although the baseline Thrombolysis In Myocardial Infarction (TIMI) 0–2 flow was not different between the groups, it is significantly lower in group B compared to group A after the PCI (8.1% vs 23.2%, p=0.015). The decrease in thrombus burden in group B after tirofiban infusion was also statistically significant compared to pre tirofiban levels (1.77$\pm$1.05 vs 3.42$\pm$0.76 respectively, p<0.001). Group B had better flow characteristics with a 91.9% TIMI 3 flow after PCI. Intervention was successful in the majority technically however no reflow was observed in 17 patients (20.7%) in group A and in 2 patients (2.7%) in group B (p<0.001). Major bleeding requiring transfusion was observed in both groups A (3 patients) and B (4 patients) due to gastrointestinal bleeding or access site hematomas (3.7%vs5.4%,NS). **Conclusion:** Pre PCI long term tirofiban infusion strategy in thrombus containing lesions seems to be a safe and feasible approach in avoiding "no re-flow" and dissolving the massive thrombus.

TABLE 1: POST PCI DATA

Variables	Control group (n=82)	Tirofiban group (n=74)	p value
TIMI score before PCI, n (%)			
0–2	31 (37.8)	18 (24.3)	0.085
3	51 (62.2)	56 (75.7)	0.085
TIMI score after PCI, n (%)			
0–2	19 (23.2)	6 (8.1)	0.015
3	63 (76.8)	68 (91.9)	0.015
Trombus burden Pre-PCI	3.17$\pm$0.93	3.42$\pm$0.76	0.113
Complications, n(%)	32 (39.0)	8 (10.8)	
Slow flow/no re-flow	17	2	
Coronary dissection	4	2	<0.001
PCI failure	3	2	
Sidebranch plaque shift	6	2	
Acute stent thrombosis	2	0	
Major bleeding, n (%)	3 (3.7)	4 (5.4)	0.599

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C- Reactive Protein and its relation with the ventricular mass, in patients with chronic hemodialysis

I. Masuda[1].

Background: There is a high incidence of left ventricular hypertrophy among renal patients and it is higher in those undergoing chronic dialysis treatment. Anaemia and pressure overload are the most relevant etiologic factors, among others. Furthermore, the presence of an generalized inflammatory process is a fundamental factor in these patients, which has a complex pathogenesis. **Aim::** The aim of our work was to evaluate whether there was an association between inflammation and ventricular mass. **Methods:** Out of 118 patients currently undergoing chronic dialysis treatment, we selected 97 patients for this trial (57 men and 40 women). The inclusion criteria was to count with white race stable patients, without acute intercurrent infections at that time, who had been in dialysis treatment on a three-times-a-week basis for more than three months (46.08 $\pm$ 36.90 months). The mean age of the patients was 56.25 $\pm$ 13.39 years old (age range 22 to 82 years old). Each patient was studied by means of clinical examination, laboratory assessment and ecocardiographic imaging. To avoid possible mistakes related to volume overload, the body mass calculation was attained via three different ways: estimation of dry weight, body mass calculation registered on the day of the study, and height related calculation. Any statistical difference was considered to be significant if $p < 0.05$. **Results:** The average PCRp correlates significantly with the PCRi (at admission). Concerning other variables, the PCR was significantly and positively related with peripherical and vascular histories (antecedents) (p:0.001), with age, and more weakly with Body Mass Index and infectious intercurrents. The diabetic group showed a higher PCR. The three forms of MVI were significantly correlated with the average of the systolic arterial pressure at admission, the number of sessions with TASi<139mmHg (p>0.001), with gender (p:< 0.05) and coronary antecedents. Systolic arterial pressure of admission and the time in dialysis, were (predictors) of the index of ventricular mass (MVI). **Conclusions:** Our findings confirm the relationship between PCR and BMI, peripheral vascular disease, diabetes mellitus and intercurrent infections; yet we found no relation whatsoever between PCR and ventricular mass.

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C- Reactive Protein and its relation with the ventricular mass, in patients with chronic hemodialysis

MI Masuda Isabel[1], FM Ferrero Mónica, HS Hecker Susana, ZJ Ziella Juan Carlos, MA Marcozzi Amalia, HA Hansen Ana, AG Aguirre Gustavo, EE Escudero Eduardo, CM Ciprés Miriam.

Background: There is a high incidence of left ventricular hypertrophy among renal patients and it is higher in those undergoing chronic dialysis treatment. Anaemia and pressure overload are the most relevant etiologic factors, among others. Furthermore, the presence of an generalized inflammatory process is a fundamental factor in these patients, which has a complex pathogenesis. **Aim:**The aim of our work was to evaluate whether there was an association between inflammation and ventricular mass. **Material and Method:** Out of 118 patients currently undergoing chronic dialysis treatment, we selected 97 patients for this trial (57 men and 40 women). The inclusion criteria was to count with white race stable patients, without acute intercurrent infections at that time, who had been in dialysis treatment on a three-times-a-week basis for more than three months (46.08 $\pm$ 36.90 months). The mean age of the patients was 56.25 $\pm$ 13.39 years old (age range 22 to 82 years old). Each patient was studied by means of clinical examination, laboratory assessment and ecocardiographic imaging. To avoid possible mistakes related to volume overload, the body mass calculation was attained via three different ways: estimation of dry weight, body mass calculation registered on the day of the study, and height related calculation. Any statistical difference was considered to be significant if $p < 0.05$. **Results:** The average PCRp correlates significantly with the PCRi (at admission). Concerning other variables, the PCR was significantly and positively related with peripherical and vascular antecedents (p:0.001), with age, and more weakly with Body Mass Index and infectious intercurrents. The diabetic group showed a higher PCR. The three forms of MVI were significantly correlated with the average of the systolic arterial pressure at admission, the number of sessions with TASi<139mmHg (p>0.001), with gender (p:< 0.05) and coronary antecedents. Systolic arterial pressure of admission and the time in dialysis, were predictors) of the index of ventricular mass (MVI). **Conclusions:** Our findings confirm the relationship between PCR and BMI, peripheral vascular disease, diabetes mellitus and intercurrent infections; yet we found no relation whatsoever between PCR and ventricular mass.

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Management and immediate outcome of elderly patients with acute coronary: A single center experience

V. Dias[1], S. Cabral[1], F. Soares[1], A. Luz[1], C Gomes[1], F. Oliveira[1], L. Gomes. [1]*Santo Antonio Central Hospital, Porto Portugal*

Purpose: Elderly patients (pts) are underrepresented in most Acute Coronary Syndromes (ACS) trials so there is limited evidence and still some debate on appropriate ACS management in this age sub-group.It was our objective, besides of it full characterization, to assess in-hospital (IH) outcome,with respect to a conservative (CA) vs invasive(IA) approach.**Methods:** Retrospective analyses of 188 consecutive pts $\geq$75 years admitted to a Coronary Care Unit from 01/01/2005 to 31/12/2006 for ACS,with (STEACS) and without ST elevation (NSTEACS). In STEACS pts, IA involved primary percutanous coronary intervention(PCI)or thrombolysis,while CA meant no reperfusion,with elective PCI dictated by risk stratification.In NSTEACS pts,IA involved coronary angiography(CAg)in the first 48h with PCI if appropriate,while CA implicated medical treatment and,eventually,deferred PCI.The variables evaluated were:Age;Gender;Coronary risk factors(CRF);Known coronary heart disease(CD);Comorbidity;Clinical and electrocardiographic presentation;Strategy at admission;CAg;Anti-thrombotics;Revascularization;IH complications(Cp-I);IH mortality(M).**Results:** There were 55,3% men.The medium age was 81,2$\pm$4,52.Hypertension was present in 71,3% of pts,Diabetes in 26,1%,Hypercholesterolemia in 42,6%,known CD in 52,7%,comorbid conditions in 44,7% and 7% were smokers.Clinical presentation was atypical in 26,1%,and 29,8% had STEACS.In these pts an IA was done in 80,4% compared to 34,8% in NSTEACS pts;6,9% had no troponin I elevation.CAg was done in 54,3%; the majority presented 2 or 3 vessel disease(55,8%).Revascularization was indicated in 38,8% of cases(32,4% PCI).As regard to anti-thrombotics 70.3% had LMWH,AAS,clopidrogel and 15,4% had addicionaly IIb/IIIa inhibitors,with a major haemorrhage rate of 1,6%.Overall the CpI rate was 61,2%,mostly represented by heart failure(15,4%)and Arrhythmias(12,8%).The M rate was 14, 9%,higher in STEACS pts(32,1%vs7,6% in NSTEACS p=0,01).Among NSTEACS pts assigned to IA their M rate was lower when compared to those assigned to CA(4,3% vs 9,3%)without statistical significance.The IA in STEACS was clearly better than CA with a M rate respectively of 26,7% and 54,5%,p=0,01.**Conclusions:** According to our series,among very old pts the vast majority presents as NSTEACS and atypical manifestations assume clinical relevancy.In a considerable number of pts an IA was chosen, particularly in STEACS, reflecting good adherence to current recomendations,with a low therapy related CpI rate.There was not a significant difference in immediate outcome between IA and CA in NSTEACS but we can expect finding a different result with a longer follow up.

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Invasive and anticoagulant threatment of coronary ectasia

V. Grigorov[1]. [1]*ARWYP Medical Center*

Coronary ectasia is a rare disorder seen approximately in 1% of all coronary angiograms. Described initially two centuries ago and classified 30 years ago there is still no prescibed approach in its management. There is no unified opinion about its pathogenesis either. We present a group of twenty patients of Markis Class I to III with a mean follow up of 4,2 years. They are in the age group between 28 to 65 years. All presented with acute coronary syndrom-beeing UA, NSTEMI, STEMI. They all underwent coronary angiography. epending on the findings some of them undrewent PTCA with subsequent stenting-50%. The rest were threated either with fibrinolysis or enoxiparine alone in the acute stage. No patients underwent CABG. All patients after the acute phase were assigned on Coumadin (Warfarin) according to INR for life. Patients were as well prescribed whenever necessary statins,b blockers or calcium channel blockers. We report 0% mortality and morbidity for the period of follow up. **Conclusion:** Irrespective of the fact that warfarin is one of the oldest drugs and sometimes neglected we think that it has its significant application in ectatic coronary disease. We consider that the reduction of the coagulabitity of the blood decreses the possibility of cloth formation in the coronary artery (Wirchow triad)

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The Association Between Metabolic Syndrome and its Components and Heart Failure in Patients Referred to a Primary Care Facility

F. Coelho[1], M. Moutinho, M. Rosa, V. Miranda, L. Tavares, E. Mesquita. [1]*UNIVERSIDADE FEDERAL FLUMINENSE* [2]*UNIVERSIDADE FEDERAL FLUMINENSE* [3]*UNIVERSIDADE FEDERAL FLUMINENSE* [4]*UNIVERSIDADE FEDERAL FLUMINENSE* [5]*UNIVERSIDADE FEDERAL FLUMINENSE* [6]*UNIVERSIDADE FEDERAL FLUMINENSE*

Background: Metabolic syndrome (MS) is characterized by a collection of risk factors that are associated with elevated rates of cardiovascular events and the risk of developing heart failure (HF). In our field, the association of MS in stable chronic HF patients has not been established. **Objective:** To determine the prevalence of MS in relation to gender and HF type in patients treated at a Primary Care Facility. **Methods:** Between January 2005 and August 2006, 144 patients were included in a cross sectional study. An echocardiogram, using the modified criteria of the EPICA study, was performed to determine whether or not the patient had HF, and of which type. Statistical analysis was conducted using the software SAS™ System, version 6.04, and statistical significance was established as 5%. **Results:** MS was observed in 111 patients (77%), of which 73 (66%) were females: odds ratio (OR) 0.195 – (confidence interval - CI = 0.08 – 0.46) and p< 0.0001. HF was identified in 102 patients (71%) with a great correlation between females and the presence of MS: 51 patients (65%); OR 0.116 (CI = 0.36–0.37) and $p < 0.0001$. Among the HF patients, 61 (42%) presented HF with preserved systolic function and 41 (29%) with systolic dysfunction; p = ns. HF with preserved systolic function was associated with the presence of MS in 53 (87%) of the 61 patients, p = 0.022. Evaluation of the association between HF and MS by gender indicated that womem with HF are 8 time more likely to present MS than men in accordance with both the NCEP and/or IDF criteria; OR 0.116 – CI 0.36 – 0.37 and p< 0.0001. **Conclusion:** In our community, MS is closely related to HF with preserved systolic function and to the female gender.

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Effects of simvastatin on the transfer of lipids to high density lipoprotein in coronary artery disease patients.

A. C. Lo Prete[1,2], C. H. Dina[2], C.H.M. Azevedo[1,2], T.M. Seydell[2], W. Hueb[2], R.C. Maranhao[1]. [1]*University of Sao Paulo* [2]*Heart Institute of Medical School*

Objective: Lipids are exchanged among lipoproteins by the action of transfer proteins such as CETP and PLTP, but the relationships of lipid transfers and coronary artery disease (CAD) are complex and yet unclear. Lipid transfers are specially important for HDL metabolism and function. In this study, we aimed to clarify whether statin use modifies the ability of HDL to receive lipids such as cholesteryl esters (CE), triglycerides (TG), phospholipids (PL) and free cholesterol (FC) in patients with CAD, since statins may diminish CETP action. **Methods:** We studied 56 patients with CAD (56$\pm$5 yo) confirmed by cineangiocoronariography performed in the last six months; 28 patients were being treated with 20mg/day simvastatin and 28 were not treated with statins. An artificial nanoemulsion (LDE) was used as lipid donor to HDL. LDE labeled with 3H-TG and 14C-FC or 3H-CE and 14C-PL was incubated with plasma samples for 1h. After chemical precipitation, the supernatant containing HDL was counted for radioactivity. HDL size was measured by laser-light-scattering. Data were expressed as means $\pm$ S.D. of the lipid radioactivity in LDE measured in the HDL fraction. **Results:** There was no difference in plasma lipid values between the two groups. The transfer of all the lipids to HDL was smaller in patients treated with simvastatin than in those without statin therapy (CE: 1.9$\pm$0.8, 3.2$\pm$0.8; PL: 19.4$\pm$1.6, 21.4$\pm$1.3; TG: 3.1$\pm$0.7, 5.3$\pm$0.9; FC: 5.0$\pm$ 1.1, 6.5$\pm$ 1.2, respectively, p<0.001). In the other hand, the subjects using statin and those without statin were not different in HDL size (9.0$\pm$1.0 and 9.0$\pm$0.9, respectively). **Conclusion:** Our results show that simvastatin is able to modify the lipid flux to HDL, which may change the composition and metabolism of the lipoprotein. The diminished ability to receive lipids, which is consistent with diminished CETP action elicited by statin use, may increase the stability of the lipoprotein particles. **Funding:** FAPESP.

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Bradykinin released during intense exercise inhibits the expression of gap junction protein in trained mouse hearts.

G. C. Tiscornia[1], E. A. Garcia Gras[1]. [1]*CESyMA, Escuela de Ciencia y Tecnología, Universidad Nacional de San Martín, Argentina*

Physical exercise is a contraindicated for individuals suffering from a number of cardiomyopathies. For cardiomyopaties such as arrhythmogenic right ventricular cardiomiopathy (ARVC) or hypertrophic cardiomyopathy (HC), sudden death events tend to occur during or shortly after intense physical exercise. A ventricular fibrillation (VF) episode during exercise could be attributed to the increased cardiac rhythm. However it is common for these events to occur after exercise, once the heart has returned to its resting rate. We propose an alternative mechanism that could explain the generation of arrhythmogenic substrate as a direct result of the physical exercise, but independently of the heart rate. Ischemic preconditioning (IP) is a well known phenomenon that has been described mainly in the heart, but was also observed in the

brain, kidney, liver and skeletal muscle, indicating that IP is a general phenomenon. Moreover it has been shown that a brief ischemia in tissues other than the heart (such as mesenteric artery occlusion) results in remote IP (RIP) of the heart. This process is mediated by bradykinin secreted by the ischemic tissues. A key event in RIP is the inhibition of connexin 43 (cx43) expression as well as a change in cx43 intracellular localization that reduces the total number of functional gap junctions. During intense physical exercise blood flow is diverted from the mesenteric plexus to the striated muscles, resulting in transient hypoxia and bradykinin secretion from the mesenteric plexus. We therefore hypothesized that intense physical exercise could result in a reduction of cx43 expression through a mechanism similar to that of RIP. Sustained exercise training would increase bradykinin receptor expression in the heart which would make a trained individual more susceptible to bradykinin released during exercise. We used swim trained mice to evaluate connexin 43 expression. We trained mice for 7 weeks with two daily sessions of swimming, from Monday to Friday. Daily sessions were increased in duration 5 minutes a day from 10 minutes until they reached 60 minutes. On the day of the experiment mice swam 0, 15, 60 or 120 minutes. Mice were sacrificed immediately after swimming and the hearts were processed for protein and RNA extraction. Connexin 43 expression was analyzed by semi-quantitative RT-PCR and Western blot. We observed significant differences in cx43 mRNA expression from the minute 15 and in cx43 protein from minute 60. A decrease in gap junctions number in a heart compromised by ARVC or decompensated HC, could reduce conductivity generating the substrate for arrhythmia, VT or VF. We conclude that this mechanism, alone or in combination with increased heart rate during exercise, could be responsible for triggering sudden deaths in athletes suffering from cardiomyopaties such as ARVC or decompensated HC which reduce per se the expression of cx43.

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THE EFFECTS OF THE CONTROLLED RESPIRATION ON THE AUTONOMIC MODULATION OF THE HEART IN RESISTENT HIPERTENSION: THE IMPACT OF RENIN-ANGIOTENSIN-ALDOSTERONE SYSTEM ON CARDIAC AUTONOMIC MODULATION (THE CURUMIM STUDY)

G. N. Gobbi[1], P.R. Benchimol-Barbosa[1], C.S. Miranda[1], A.F.P. Gondar[1], F.D. Vilela[2], F.V. Campos[1], J. Barbosa-Filho[1], M.V. Barros[2], A.B.R. Lima[2], I. Cordovil[1,2]. *[1]Gama Filho University [2]National Institute Cardiology - Health Ministry*

Introduction: Instantaneous heart rate is determined by dynamic integration between sympathetic and parasympathetic systems upon sinoatrial node. The action of these two systems upon heart rate modulation can be evaluated by the Fourier decomposition of consecutive normal beats series (RR interval), of which the low frequency spectral components (LF) represents baroreceptor and sympathetic influences and high frequency spectral components (HF) parasympathetic respiratory influences. Controlled respiration (CR) modulates heart rate through parasympathetic stimuli, possibly influencing spectral components distribution and short-term autonomic modulation. **Objective:** To Assess the effect of the CR on the automatic modulation of the heart in subjects with systemic arterial hypertension (SAH) refractory to drug treatment. **Methods:** In prospective observational study, 35 subjects with SAH refractory to drug treatment were analyzed, which made part of the database of the Department of Arterial Hypertension the National Cardiology Institute – MS, Rio de Janeiro. After supine rest for 5 minutes, three consecutive five-minutes recordings of surface electrocardiogram (ECG) were obtained in different phases: 1) First basal (FB) – supine rest, 2) During CR – six incursions/min during four minutes, 3) Second basal (SB) – second supine rest during five minutes after CR. The signals of the ECG were analyzed by specific software for extraction of interval between normal beatings and building of respective power spectral density functions. The areas of HF (between 0,15 Hz and 0,4Hz) and LF (05Hz e 0.15Hz) were analyzed in each phase. Variables were log-transformed before analysis. Variables were compared using the One-way ANOVA test. The Student t test compared the samples tow-by-two. The comparison between SB and the RC was carried out considering a short-time autonomic memory effect. Alpha error level was set to 0.05 (Ethics committee of the National Cardiology Institute, number: 0115/22/07.06). **Results:** The LF power presented significant differences between FB and RC with (respectively, $p<0.0001$), and between FB and SB with ($p=0.0006$; Figure 1). HF demonstrated significance only between FB and SB with ($p=0.001$; Figure 2). **Conclusion:** The RC determinates LF spectral amplification, which remains stable up to five minutes after the maneuver. This observation indicates that CR bears short-term autonomic memory and may further benefic cardiac autonomic reversal remodeling.

TABLE 1 - AUTONOMIC MODULATION INDEX

Study	FB	CR	SB	p
HF	4.4±1.5	4.6±1.7	4.9±1.4	<0,001
LF	4.6±1.3	6.4±1.5	5.4±1.3	NS

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HDL size and ability of acceptance cholesterol and other lipids in heart transplantation patients with treatment

C. G. Puk[1], A.C. Lo Prete[2], E.A. Bocchi[1], C. H. Azevedo[2], S. Ayub[1], R.C. Maranhão[1]. *[1]bThe Heart Institute (InCor) of the Medical School Hospital [2]cFaculty of Pharmaceutical Sciences of University of São Paul*

Background: After the first year from the heart transplantation (HT) procedure, HT patients often develop dyslipidemias that may be implicated in the genesis of the transplant coronary heart disease. High-density-lipoprotein (HDL) has a several antiatherogenic properties but the status of HDL in HT patients is still controversial. Nonetheless, determination of HDL-cholesterol concentration does not suffice to evaluate the overall HDL protective role. In this study, HDL diameter and the fundamental functional property of HDL in reverse cholesterol transport, the ability of to simultaneously receive the major lipid classes, was tested in HT patients. **Methods:** 20 HT patients, undergoing the standard maintenance lipid-lowering therapy and immunosuppressive therapy, and 20 healthy normolipidemic subjects paired for sex, age and body mass index were studied. Blood samples were collected after 12h fasting, for determination plasma lipids, glucose, PON 1 activity, HDL-diameter and transfer of labeled cholesterol, cholesteryl ester, triglycerides and phospholipid from an artificial nanoemulsion to HDL. **Results:** Total cholesterol and LDL-cholesterol did not differ between HT patients (165 ± 31mg/dL and 89 ± 22mg/dL; respectively) and controls (173 ± 30mg/dL and 98 ± 17mg/dL; respectively). Plasma triglycerides (159±63 vs 94±35mg/dL) and glucose (104±20 vs 86±10mg/dL) were greater in HT than in controls. HDL-cholesterol and HDL-diameter were smaller in HT group (HDL-cholesterol: 44±11 vs 55±15mg/dL; HDL-diameter: 8.8±0.6 vs 9.0±1.2nm). PON 1 activity did not differ in the two groups (HT:87±47 and controls:75±37 nmol min-1mL-1). The transfer of cholesterol and cholesteryl ester from artificial nanoemulsion to HDL were diminished in HT patients (HT: 8.4±1.2% and 3.8±0.6%; controls: 9.7±1.9% and 4.7±1.2%, respectively). On the other hand, there was no difference in the transfer of triglycerides (7,2% ± 0,9 vs 6,8% ±1,3) and phospholipid (26,3% ± 1,1 vs 25,8% ± 2,8) between HT patients and controls. **Conclusion:** the acceptance of cholesterol and cholesteryl ester by the HDL fraction is diminished in HTpatients and may interfere with the diameter and function of HDL in reverse transport of cholesterol. These disturbances in the antiatherogenic properties of the lipoprotein can thus contribute to the accelerated atherosclerotic process that commonly occurs in those patients and may compromise the long term success of the procedure and the patient survival rates.

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UTILITY OF A LOW-RISK SPECT TEST IN UNSTABLE ANGINA

Y. Castillo Costa[1], V. Mauro[1–2], A. Charask[2], R. Pérez[1], E. Fairman[2], L. Rodríguez[2], E. Barrionuevo[1], C. Barrero[1–2]. *[1]Clínica Santa Isabel [2]Clínica Bazterrica*

The significance of a "low ischemic risk" (LR) SPECT test in patients (pts) admitted for unstable angina (UA) managed conservatively is still uncertain. **Objective:** 1) Analysis of clinical evolution of UA pts with a LR SPECT test. 2) Comparison of clinical outcomes between pts with a normal SPECT test and those with transient perfusion defects (TD), permanent perfusion defects (PD) or combined perfusion defects (CD) and 3) Determine the additive value of the SPECT test to classic risk variables. **Methods:** Pts admitted to the CCU for UA between Jan/04 to Apr/06, without ventricular dysfunction and with a complete 1 year-follow up were included. Definitions: a) Clinical risk by TIMI score. b) LR SPECT test (with either exercise or pharmacologic stress): TD <=3/17 segments, PD <=3/17 segments, CD: TD+PD and normal test: without defects. c) Clinical events (Ev): death/infarction or readmission for angina. **Results:** a total of 137 pts with a median age of 59 yr (53–67), 60% men, entered the study. TIMI risk score was low in 54% of pts and moderate in 46%. The Ev rate was 6%. The distribution of Ev according to perfusion defects as well as sensitiviy and specificity of these findings for Ev are shown in the table below. A multivariate analysis was performed that included TIMI risk score and SPECT findings (PD and CD). Only CD remained as an independent variable for Ev occurrence: OR 7.8 (95% CI 1.2–49; $p=0.02$). The corresponding positive and negative predictive values and positive and negative likelihood ratios were : 25%, 96%, 5.3 and 0.7 respectively. **Conclusions:** A low-risk SPECT test is useful in the evaluation of UA pts as it enables the identification of a population with a good clinical outcome at one year follow-up. Nevertheless, the presence of combined perfusion defects identifies a subgroup of pts with a worse evolution and this information can be useful for an appropriate clinical decision making.

TABLE

SPECT test	Normal	TC	PD	CD	p (trend)
n	47	44	34	12	
Ev (%)	2.1	4.5	5.9	25	0.02
Sensitivity (%)		25	25	37.5	
Specificity (%)		67.5	75	93	

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CARDIAC MIXOMAS: CLINICAL PRESENTATION, SURGICAL RESULTS AND LONG-TERM FOLLOW UP OF 60 CASES.

E. Gonzalez[1], N. Pizzi[1], G. Caponi[1], J. Shiraishi[1], M. Varela Otero[1], Y. Arzani[1], L. Helman[1], R. Favaloro[1]. *[1]Fundación Favaloro, Buenos Aires. Argentina.*

Objectives: To analyze clinical presentation, location, perioperative results and long-term evolution in patients (p) who underwent cardiac myxoma surgery. **Methods:** Retrospective analysis of 60 patients with myxoma confirmed histologically who were operated in a single center between 1992 and 2007. The patients were evaluated in the long-term follow-up by clinical consultation, echocardiography and telephone interview. **Results:** The patients mean age was 53.01 +/- 16.89 years (range 14 – 84 years), and 55% (33 p) were female. Tumoral location: left atrium 80% (48 p), right atrium 11.66% (7 p), left ventricle 3.33% (2 p), right ventricle 3.33% (2 p) and biatrial 1.66% (1 p). Myxoma were implanted on the mitral valve in 6.66% of cases (4 p). The presentation symptoms were: obstructive 51.66% (31 p), embolic 36.66% (22 p), constitutional symptoms 28.33% (17 p), supraventricular arrhythmia 21.66% (13 p) and asymptomatic 10 % (6 p). 3.33% (2 p) were recurrent tumours (one case was suspected to have Carney's Syndrome). One case was a malignant myxoma with distant metastasis. Smaller-diameter myxoma were associated to embolic manifestations and bigger-diameter with obstructive symptoms and supraventricular arrhythmia. Ventricular location were observed in younger patients. Complete tumoral excision was performed in 98.3% (59 p) followed by patch closure of septal defect in 50% (30 p), simple closure in 13.33% (8 p) and biatrial reconstructive plastic surgery in 6.66% (4 p). Coronary artery By-pass grafting was associated in 8.33% (5 p) and valvular and/or great vessels surgery in 15% (9 p) of cases. The post surgical mortality was 3.33% (2 p) and the most common complications were: complete atrioventricular block 23.33% (14 p), supraventricular arrhythmia 23.33% (14 p), low output state 18.33 % (11 p) and acute renal failure 10% (10 p). The long-term follow

up was performed in 94.82 % with a mean of 78.38 months (range 3–178 months). 65.61 % (38 p) was entirely asymptomatic. The most frequent complication was supraventricular arrhythmia in 13.79% (8 p) of patients, mainly atrial flutter. One tumoral recurrence which required a reoperation and four deaths (6.89%) occured in this period. **Conclusions:** Cardiac myxoma is usually diagnosed and operated in symptomatic patients. Surgical treatment has low perioperative morbimortality, good long-term prognosis and a low recurrence rate in the long term follow-up in our serie.

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Compliacation of Cardiothoracic Surgery in the Peruvian National Heart Institute

M. Condori[1]. [1]*National Heart Institute(INCOR)*

COMPLICATIONS OF CARDIOTHORACIC SURGERY IN THE PERUVIAN NATIONAL HEART INSTITUTE.Myrna Condori Arenas. National Heart Institute INCOR Lima-Peru. **Introduction-:**Complications are cause of morbidity and mortality following cardiac surgery and they represent an important increase of the cost of hospitalization. Althought new and diverse developments have led continue expansion of procedures available to all patients of all ages and suffering from any cardiac disease, This increase has been accompanied by a rise in both the severity of cardiac disease at the time of surgery and the reoperation rate for recurrent disease. Today we see that there has been no changes since the past decade in the incedence of complications of cardiothoracic surgery, althouht that explosive growth of wound healing research. **Objectives:** To determine the incidente of complications and risk factorsof cardiac surgery **Methods:**Clinical histories of 672 patients of diverse types of cardiac surgery were reviewed. All the patients were admited to the ICU, where they were evaluated and the complications registered displayed in the postoperative period **Results:** According to multivaried analysis, the most frequent complication was atrial fibrilation(33.2%), the valvular surgery (OR: 2.6) and the cardiac surgery antecedent (OR: 2.66) were the main risk factors. The main factors of risk for perioperative myocardial infarction were the onset unstable angina at the admission (OR: 4.7) and the coronary artery bypass graft surgery (OR: 18.57);. Pulmonary injury appeared in 26.7% and the time of aortic clamping increased 4.29 times the risk of its presentation. The mediastinitis(6.1%) has a greater risk 4.87 times in diabetic patients. **Conclusions:** The most frequent complication in carciac surgery in the Peruvian Heart Institute - INCOR is Atrial Fibrilation followed by Severe Pulmonary Injury and.Periopertaive Myocardial Infation (10%)

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Surgical Treatment of Acute Type A Aortic Dissections. Immediate and Long-Term Results.

R. Spampinato Torcivia[1], H. Cohen Arazi[1], H. Grancelli[1], W. Rodriguez[1], S. Waldman[1], M. Cáceres[1], M. Sellanes[1], C. Pensa[1], C. Nojek[1]. [1]*F.L.E.N.I.*

Background—surgery for type A acute aortic dissection (TA-AAD) is associated with a high mortality rate and incidence of postoperative complications. We explored contemporary data of in-hospital and follow-up mortality and morbidity in patients operated of TA-AAD. **Methods and Results**—we included 63 consecutive patients who underwent operation of TA-AAD between July 1994 and May 2007. Mean age was 63±11.3 years; 45 were men; 56 had previous history of hypertension; and 23 had diabetes. Median follow-up was 6.4 years (11 days to 11.7 years). Fifty-three patients had surgery within 24 hours, 8 patients beyond 24 hours, and in 2 cases were no data of symptom onset. Descending aorta was affected in 36 patients. Forty-three had ascending aortic replacement only, 15 had hemiarch repair, and in 5 the entire arch was replaced. The aortic valve was resuspended in 39 (62%), replaced in 12 (19%); and in 11 (17.5%) patients a concomitant coronary bypass surgery (CABG) was undertaken. Hospital mortality (HM) rate was 30.1% (19 of 63): 1 patient died during surgery, 5 had cardiac-related complications, 3 had neuro-vascular causes, and 7 died of malperfusion-related complications or multiorgan failure. On multivariate analysis a major cardiopulmonary bypass time (CPBPt) (OR, 1.03; 95% CI, 1.00 to 1.06; p=0,021) and a low cardiac output syndrome (LCOS) (OR, 8.8; 95% CI, 1.36 to 56.8; p=0,022) remained independent predictors of HM. Postoperative complications were: acute renal failure (ARF) (58%); infections (45%); LCOS (22.6%); neurological problems (19.4%); myocardial infarction (14.5%); and reoperation (9.7%). Follow-up mortality rate (FuM) was 32.4% (12 of 37); 4 were cardiac-related, and 4 were related with the aortic dissection. Age >70 (p=0.021) and a minor CPBPt (p=0.038) were independent predictors of FuM. Among discharged patients the 1-, 3-, and 5-year survival was 88.9%, 79.5% and 72.7%, respectively. During follow-up only 2 patients had proximal aortic reoperation. **Conclusions**—surgical treatment of TA-AAD was related with a high hospital mortality and morbidity. Patients discharged alive had a good survival and a low rate of proximal aortic reoperation in the follow-up.

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Evaluation on the risk of target organ damage based on the genetic profile of AGT 235MT, mineralocorticoid receptor GCC5GG4C and ACE I/D in subjects with resistant hypertension

F. V. Campos[1], P.R. Benchimol-Barbosa[1], F.D. Vilela[2], C.S. Miranda[1], G.N. Gobbi[1], J. Barbosa-Filho[1], A.F.P. Gondar[1], M.V. Barros[2], A.B.R. Lima[2], I. Cordovil[1–2]. [1]*Gama Filho University* [2]*National Institute of Cardiology / Brazil - Health Department*

Theme: Abnormal circadian variation of the arterial pressure predicts target organ damage in subjects with systemic arterial hypertension (SAH) resistant to drug treatment, in particular left ventricular hypertrophy (LVH). The RAAS genetic profile may influence the development of LVH. **Objective:** To assess the association between RAAS genetic polymorphism and LVH in subjects with resistant hypertension. **Study Outline:** Observational and retrospective study. **Casuistic:** 131 patients have taken part of this study, aged between 30 and 80, 70,2% female, followed up for at least > 5 years at the Department of Arterial Hypertension of the National Institute of Cardiology, with resistant SAH. **Methods:** After initial medical interview, subjects were admitted on the program of drug distribution, oriented by their primary attendance, with the prescription of three or more drugs including a diuretic. In the course of one to four weeks after the beginning of the treatment, 24-hour arterial blood pressure monitoring was carried out, confirming the diagnostic of resistant hypertension. The M-mode echocardiogram assessed left ventricular mass based on Devereux formula divided by body surface area. Subjects were classified according to selected RAAS genetic polymorphisms angiotensin 235MT, mineralocorticoid receptor GCC5GG4C and angiotensin converting enzyme I/D. Genetic profile was assessed by PCR and specific polinucleotides probes. Numerical variables were expressed as mean±SD and analyzed by Mann-Whitney tests. Alpha error level was set to 0.05. **Results:** LV mass index found for AGT 235MT genotype were 125.2+-66.2 g/cm^2, 98.5±35.1 g/cm^2 and 112.4±41.1 g/cm^2 (p=0.31) to MM, MT and TT, respectively. For ACE I/D polymorphism, LV mass index were 104,5±40,5 g/cm^2 for DD, 119±50,1 g/cm^2 for ID and 82,1±14,8 g/cm^2 for II (p=0.05). And, mineralocorticoid GCC5GG4C polymorphisms, LV mass index was 96±27g/cm^2 for CC, 136,7±59,3 g/cm^2 for GC and 94,7±32,3 g/cm^2 for GG (p=0.021). **Conclusion:** The heterozygote genotype of mineralocorticoid receptor GCC5GG4C polymorphism was associated with increased left ventricular mass, indicating a genetic control of target organ damage in resistant hypertension.

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Ventricular-Vascular coupling response and Left Ventricular Function Parameters with the Ergo-metric stress

J. Tripolone[1], G Santiago[2], M Garcia[3]. [1]*UNIVERSIDAD CATOLICA DE CUYO* [2]*UNIVERSIDAD CATOLICA DE CUYO* [3]*UNIVERSIDAD CATOLICA DE CUYO*

The normal behavior, of the left ventricle, during the exercise is an increase of the stroke volume with an increase of the aortic compliance that favors the sanguineous volume transfer (AVV) to the periphery. The purpose of this trial was to evaluate the answer of AVV and the Left Ventricular Function with effort. **Material and Method:** We evaluated 186 patients. First group, 20 normal patients, Second Group 119 patients with risk factors and Third Group, 47 patients with ischemic cardiopathy (with or without myocardial infarct). We made and ergo-metric test with eco-stress and the following variables were studied: 1- EF (eyection fraction), VEAM (Mitral Ring Velocity, Normal Values > 9cm/s). 2- AVV = Aortic Elastance/left-Ventricle Elastance = PFSVI/IVSA/PFSVI/IVFS=IVFS/IVSA; where PFSVI is Left-Ventricle End of Systole Pressure, IVSA means Anterograde Systolic Volume Index and IVFS means End of Systole Volume Index. In our laboratories, the Normal Values was 0.46+-0.14. All the parameters were measured in basal, effort and changing (delta) states. Statistic Analysis: Student Test, p<0.05. **Results:** AVV shows significant difference between the three groups with p<0.000. . . Delta EF in G3 versus G2 and versus G1 shows significant difference (p<0.000. . .). VEAM shows significant difference between the three groups (p<0.000. . .). **Conclusion:** 1- In the effort state we observed a deterioration of the AVV (and Delta) that it is altered gradually from normal to ischemic cardiopathy (G1>G2>G3). 2- A 2.5% of the patients of the Second Group and a 23% of the patients of the Third Group show a paradoxical response of the AVV (it increases at effort), which increases the difficulty of the volume transfer work. 3- We observed an alteration at the systolic work index with a diminution of VEAM both basal and effort and a bigger deterioration in G3 than in G2 (G3>G2>G1). 4- These changes could justify the smaller ergo-metric work done by the patients (ergo-metric load on G1>G2>G3 with significant difference). 5- The evaluation of AVV and VEAM adds information to the classic ergo-metric parameters and with them we can optimize the specific treatment of this parameters to improve the blood transfer from the left ventricle to the aorta and therefore to diminish the ventricular load.

Parameters	G1 – Basal	G1 – Effort	G2 – Basal	G2 – Effort	G3 – Basal	G3 – Effort
Veam	11	17	7.32	9.7	6.3	6.9
AVV	0.6	0.18	0.61	0.38	1.27	1.11

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Right-sided Infective Endocarditis in Singapore

Y. Goh[1], P. Goh[1], H Oh[1]. [1]*Changi General Hospital*

Aim: To study the epidemiology of right-sided Infective Endocarditis in a regional hospital of Singapore **Methods:** Retrospective study on data of subjects diagnosed with infective endocarditis as the principal diagnosis for the last 5 years from January 2001 to July 2006. **Summary of Results:** A total of 38 right-sided Infective Endocarditis (IE) cases (possible and definite by Duke's criteria) were admitted during the study period. An analysis of the data revealed rising incidences from 2001 to 2006. Mean age is 33.7 years old. Majorities of them (73.7%) were in younger age group between 20 to 40 years old. Ethic majorities were Malay (73.7%), male (81.6%), previously healthy subjects (73.7%) and intravenous drug abusers (84.2%). The commonest drug of abuse was Subutex (60.5%) or buprenorphine hydrochloride. Six patients have recurrent IE and all were intravenous drug abusers. Majorities have abused drugs for less than 2 years (71.1%). We found 15 patients (39.5%) were concomitantly Hepatitis C positive. Only 2 were Hepatitis B positive and none were HIV positive. The main presenting symptoms was fever (84.2%) for less than 2 weeks (94.7%). The commonest valve involved was tricuspid (89.5%). 6 patients (15.8%) have more than 1 valves involved. The commonest organism was Staphylococcus aureus (79.9%). Complications arose in 33 cases (86.8%) namely embolic phenomenon (71.1%) and valve destruction (23.7%). The mortality rate was 10.5%. The cure rate was 65.8% with mainly intravenous antibiotics but 4 cases (10.5%) needed surgical intervention. There was also a high incidence of "against medical advice" discharges (23.7%). **Conclusion:** Right-sided Endocarditis is increasing in prominence over the last few years, likely attributed to IV drug abuse. The organisms causing IE have also

changed as a result. This may result in increasing morbidity and mortality of infective endocarditis.

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The effect of long-term beta-blocker treatment on endothelium-dependent hemostasis in patients with chronic heart failure

E.V. Shlyakhto[1,2], **K.A. Khmelnitskaya[1]**, M.YU. Sitnikova[2]. *[1]Pavlov State Medical University, Saint-Petersburg, Russian Federation [2]Almazov Federal Centre of Heart, Haematology and Endocrinology, Saint-Petersburg, Russian Federation*

Background: Beta-blocker Carvedilol demonstrated positive clinical effect, reduction of lethality, sudden death risk and progressive development in patients with chronic heart failure (CHF) in many studies and trials. It is well known, that CHF is risk factor of thromboembolism complications. The pathophysiology of thromboembolism is complex and multifactorial, both a hypercoagulable or prothrombotic state and endothelial dysfunction in CHF. Our aim was to assess the influence of Carvedilol on endothelium-dependent hemostasis: prothrombotic [von Willebrand factor (vWf), circulating endothelial cells (CECs), an index of endothelial damage] and fibrinolytic [tissue plasminogen activator (tPA)] factors in patients with CHF. **Methods:** 41 patients with stable CHF [ischemic etiology, II -IV class (NYHA), LVEF (Simpson)$<$ 40%] were included on baseline chronic treatment (diuretics, ACE inhibitors, digitalis, aspirin, nitrates). In study we have investigated effect of 6 month's treatment with Carvedilol (n=23) in compare baseline therapy group for a control (n=18) on plasma levels of vWf, tPA-antigen, CECs and other hemostatic parameters [fibrinogen, euglobulin clot lysis time, prothrombin index, platelet counts]. All patients have given the officiale informed concent to participate in research. Carvedilol was titrated to maximum tolerate dose (12,5–50 mg daily). **Results:** Carvedilol therapy was associated with decrease prothrombin index (- 4.8 %), fibrinogen (- 3.6 %), platelet counts (-19,1 %), shortening euglobulin clot lysis time (- 9.5 %), and fibrinogen (+ 11,1 %), platelet counts (+ 7.6 %), prolongation euglobulin clot lysis time (+ 4.3 %) were increased in baseline therapy group, but not statistically significant. In Carvedilol group were improved factors of endothelium-dependent hemostasis: a decrease plasma levels of vWf ($p<0.05$), a increase plasma levels of tPA-antigen ($p<0.05$), a reduction of number CECs ($p=0.07$). **Conclusion:** The long-term Carvedilol administration, equally with a clinical beneficial effect, leads to a reduction of thrombogenicity and a increase of thromboresistance of endothelium in patients with CHF.

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NATURAL HISTORY OF RHEUMATIC MITRAL STENOSIS

M. Kilickap[1], B. Candemir[1], A.O. Ozdemir[1], S. Turhan[1], H. Ede[1], T. Altin[1], T. Sayin[1], G. Akgun[1], C. Erol[1]. *[1]Ankara University School of Medicine, Cardiology Dept, Ankara, Turkey*

Background: Rheumatic mitral stenosis is a progressive valvular disease that may require percutaneous or surgical intervention. In this study we evaluated the determinants and progression rate of mitral stenosis. **Methods:** Two hundred and one patients with mitral stenosis and with at least 1 year follow-up were evaluated. Two-dimensional and Doppler echocardiography was used to calculate planimetric mitral valve area, mean mitral gradient and left atrial diameter. Changes in these parameters during the follow-up, and annual rate of progression were evaluated. Multiple stepwise linear regression analysis was used to find out the determinants of progression by entering the variables of baseline mitral valve area, gender, age, and the degree of mitral regurgitation to the model. **Results:** Mean follow-up was 47.4 $\pm$ 24.0 months (range: 12.0–101.4), and mean age was 51.7$\pm$12.3 years. During the follow-up period mitral valve area reduced from 2.1$\pm$0.6 cm2 to 1.9$\pm$ 0.6 cm2 ($p<0.001$); mean gradient increased from 6.2$\pm$2.6 mmHg to 7.1$\pm$3.3 mmHg ($p<0.001$); and left atrial diameter increased from 4.7$\pm$0.8 cm to 4.9$\pm$0.9 cm ($p<0.001$). Annual rate of loss of mitral valve area was 0.065$\pm$0.081 cm2/year; and annual rate of increase in the gradient was 0.24$\pm$0.81 mmHg/year. In multiple regression analysis, none of the parameters in the model, but gender, was found to be the predictor of loss of mitral valve area. **Conclusion:** In this relatively large group of patients we analyzed the progression rate of mitral stenosis, and we found that the progression rate cannot be predicted by echocardiographic parameters in our model.

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Exercise diastolic left ventricular function in patients with coronary artery disease

YU.A. Izachik[1], **S.V. Ivanov[1]**, A.B. Pestova[2], N.A. Grablina[1], S.S. Ivanov[1]. *[1]Aleksandrov's medical clinic RostAgroExport [2]Central clinical hospital of Russian railways*

Various parameters of left ventricular diastolic function were studied with Doppler Echo during a multistage treadmill test in 44 patients with coronary artery disease (CAD) and 20 normal subjects. The cardiopulmonary exercise complex "Oxóñon Pro" and echocardiograph Sequoia 512 were used. In patients with CAD treadmill testing was stopped with development of electrocardiographic and/or echocardiographic signs of myocardial ischemia. Peak exercise achieved in patients was 6.4$\pm$0.4 îÅÒs, in controls – 9.4$\pm$0.5 îÅÒs (ğ$<$0.05). The patients with CAD less postinfarction cardiosclerosis or with non-extensive scar changes (32 patients) had the same velocity dynamics pattern of values Å and À as did normal individuals. As the exercise was increased, the Å values first rose but then levelled off starting from 3.3$\pm$0.5 îÅÒs. Values of A continuously increased during the whole test, and Å/À ratio – decreased from 1.0$\pm$0.1 to 0.64$\pm$0.09 - at the exercise's level 2.7$\pm$0.5 îÅÒs and higher. In control group Å/À changed during the test from 1.4$\pm$0.1 to 0.71$\pm$0.03 at 6.6$\pm$0.5 îÅÒs (ğ$<$0.05). The ratio of isovolumic relaxation time and RR (IVRT/RR) in patients decreased at first, but from the level of exercise of 2.9$\pm$0.5 îÅÒs sharply increased. Normal individuals had gradual decline of index values during the whole exercise. Such dynamics of IVRT/RR allowed predicting the onset of myocardial ischemia with specificity and sensitivity of 95%. Thus, the level of exercise at the time of IVRT/RR rise may be used to measure the degree of coronary insufficiency. These changes of Å and À values can also be used as criteria for myocardial ischemia in CAD patients without postinfarction cardiosclerosis at exercise levels under 4 îÅÒs (specificity and sensitivity $>$ 90%). The utilization of these criteria during high intensity exercises becomes controversial, because similar dynamics of Å è À parameters was observed in normal individuals and cannot be linked to myocardial ischemia. In 12 CAD patients with increased myocardium stiffness, treadmill test showed continuous growth of Å values, while À values rose at the beginning of test and progressively declined when exercise load had reached 4.1$\pm$0.5 îÅÒs, causing increase of E/A ratio from 1.2$\pm$0.2 to 2.9$\pm$1. These findings indicated the impairment of diastolic function by restrictive mechanism in certain group of CAD patients during exercise. Initial decline of IVRT/RR ratio in these patients was followed by its rise from level of exercise 2.2$\pm$0.2 îÅÒs and subsequent progressive fall at the level 2.9$\pm$0.4 îÅÒs. Increase in left atrial pressure was also noted during that second fall of IVRT/RR. Healthy control subjects failed to demonstrate similar dynamics. Thus, the moment of sharp E/A elevation and subsequent IVRT/RR drop in these patients may be used to determine critical level of exercise when left ventricular diastolic overload occur.

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Improvement in endothelial function with short-term exercise training and without specific diet in patients with metabolic syndrome

A. Casella-Filho[1], S.R. Coimbra[1], C.B. Casella[1], I.C. Trombetta[1], F.Y Cesena[1], E. Cerqueira[1], D. Favarato[1], C.E. Negrao[1], P.L. Daluz[1], A.C.P. Chagas[1]. *[1]Heart Institute (InCor)-HCFMUSP,Sao Paulo,Brazil*

Background: Endothelial dysfunction, regarded as an early event in the development of atherosclerosis, is usually present in patients with metabolic syndrome (MetS). Long-term exercising benefits upon endothelial function, especially associated with diet, are already known. We hypothesized that a controlled, moderate short-term aerobic exercise training (SET), without any specific diet, improves endothelial function in MetS. **Methods:** Forty sedentary persons (30 with MetS and 10 controls) were studied. All participants were submitted to a cardiopulmonary exercise test to measure maximum oxygen consumption (VO2max) and anaerobic threshold. Twenty of those with MetS (training group), 10 men and10 women, were subjected to a 3 times/week moderate, controlled training load (45 min/day) for 3 months on a bicycle ergometer. After this period, the cardiopulmonary exercise test was repeated. Endothelial function was analyzed before and after SET. Both flow-mediated, endothelium-dependent and endothelium-independent vasodilation were assessed in the brachial artery by high-resolution external ultrasound. Vasodilation was considered normal when above 10% from the baseline. Anthropometric measurements and blood nitrite concentration were also analyzed in all participants before and after SET. **Results:** SET increased the VO2max in all training group patients (19.9 $\pm$ 4.3 ml/kg.min to 23.7 $\pm$ 4.6 ml/kg.min, $p<0.05$). Interestingly, SET increased the VO2max in women with MetS to values similar to those observed in control women (21.2 $\pm$ 2.9 ml/kg.min vs 22.8 $\pm$ 3.3 ml/kg.min, respectively, $p>0.05$). There was no significant change in weight but the abdominal circumference reduced in all training patients (110.0 $\pm$ 10.0 cm to 106.8 $\pm$ 8.9 cm, $p<0.05$). Endothelium-dependent vasodilation from all patients with MetS was significantly reduced compared with controls (7.01 $\pm$ 5.15% versus 13.32 $\pm$ 4.70%, $p<0.05$). SET significantly increased endothelium-dependent vasodilation in all training patients with MetS (6.20 $\pm$ 4.54% to 11.77 $\pm$ 7.60%, $p<0.05$). There was also a significant increase in blood nitrite concentration after training (242.1 $\pm$ 119.5 nM to 465.4 $\pm$ 228.9 nM, $p<0.05$). The endothelium-independent vascular reactivity was normal in all groups and unchanged by SET. **Conclusions:** Controlled and moderate SET did not change weight in patients with MetS but reduced their abdominal circumference and improved their cardiorespiratory fitness. These patients have impaired endothelial function that markedly improved with SET. Increase in nitrite blood level indicates a better production and/or bioavailability of NO after SET. These findings emphasize the benefits of early exercising on endothelial function in MetS, even without any specific diet.

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Mitral and aortic valve dysfunction in maintenance haemodialysis patients - echocardiographic findings.

M. Hlawaty[1], M. Olszowska[2], W. Tracz[3], P. Podolec[4], M. Kostkiewicz[5], A. Liœniak-Sobelga[6], M. Pasowicz[7]. *[1]Institute of Cardiology, John Paul II Hospital, Krakow, Poland [2]of Cardiology, John Paul II Hospital, Krakow, Poland [3]Institute of Cardiology, John Paul II Hospital, Krakow, Poland [4]Institute of Cardiology, John Paul II Hospital, Krakow, Poland [5]Institute of Cardiology, John Paul II Hospital, Krakow, Poland [6]Institute of Cardiology, John Paul II Hospital, Krakow, Poland [7]Institute of Cardiology, John Paul II Hospital, Krakow, Poland*

Background: Calcification and mitral or aortic valve dysfunction are frequently found in chronic haemodialysis patients. The aim of the study was to evaluate the degree of valvular calcifications in maintenance haemodialysis patients (pts) using echocardiography. **Methods:** The study group comprised 108 pts (58M, 50F; mean age 51,5 years) with the end-stage renal disease. The mean time of haemodialysis was 80 months (range 6–300 months). All patients were examined by transthoracic echocardiography, with a view to assessing the size of heart chambers and valvular pathology, with particular focus on precise anatomic location of the intracardiac calcifications. Conventional Doppler was used to measure trans-aortic and trans-mitral flow velocities and pressure gradients; colour Doppler was used to assess the regurgitant flow. For the best statistical analysis we considered pts from the first and fourth age group quarters: A $<$ 42 years (27pts) and B $>$ 61 years (27pts). Similarly, were compared two extreme groups of pts depending on haemodialysis duration: C $<$ 31 month (27pts), D $>$ 108 month (27pts). **Results:** Calcification and dysfunction of both mitral and aortic valves were detected in 35% of cases. Calcification of aortic leaflet, annulus or wall was observed in 13 pts (48%) from gr.A and in 23 pts (85,2%) from gr.B (p 0,005). Linear correlation rate (r Pearson) between age and trans-aortic gradients max. and mean. were significant (r=0,316 vs r= 0,308 respectively). ROC curve analysis for possibility age discriminate in valves calc. shows

a cut off points – 47 years for aortic leaflet calc. and 60 years for mitral leaflet calc. In univariate analysis, a positive correlation was observed between age and: - mitral and aortic regurgitation (p= 0,022 vs p= 0,021) - mitral leaflet calc. (p= 0,040) - mitral anulus calc. (p= 0,021) - aortic leaflet calc. (p= 0,015). Neither the transvalvular pressure gradients, nor the regurgitant flow reached haemodynamic significance, so consequently none of the patients was eligible for a referral to cardiosurgery. Analysis of the effect of dialysis on calcification in gr. C and D shows statistically significant difference only for chordal calc. (p= 0,006). ROC curve analysis for chordal calc. indicates the cut off point – 132 months of dialysis. Twenty two pts (20,4%) out of the entire study group had no intracardiac calcifications (calc.) and normal function of the mitral and aortic valves. **Conclusion:** Our findings show that intracardiac calcification is common in end-stage renal disease patients and age focus is important. Duration of haemodialysis had a significant effect only on chordal calcification. Aortic valve calcification is prior to mitral valve regardless of haemodialysis duration.

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Medical advice to quit tobacco smoking as a cornerstone in cardiovascular prevention. Reality or fiction.

G. Pérez Baztarrica[1], R. Alonso[1], H. Cruz[1], F. Sanchez[1], F. Ganzalez[1], M. Cerón[1], L. Gariglio[1], F. Salvaggio[1], R. Cherhousky[1], R. Porcile[1]. *[1]Hospital Universidad Abierta Interamericana*

Introduction: The tobacco smoking represents the first reversible cause of death in the world. It's estimate there are 1.300 millions of smokers and 5.000.000 died in 2000 as a consequence of tobacco's related diseases, between them, cardiovasculary ones. Precise figures that in the 2030, are expected to double. According to medical assessment in stop smoking, in the actuality desertion rates upper 50% percent went down based on the exposed of the basis of this study realization which would allows future behaviours. **Objectives:** To analize the rate of medical assessment to quit smoking that smoking population receives as a pillar in cardiovascular prevention and would allows to modify in future strategies. **Methods:** Observational and transverse study that included smokers population in the city of Buenos Aires- Argentina randomize selected from April to August 2007. Population's basic characters have been analyzed (sex, age, quantity of daily smoked cigarettes, starting age, places where they smoked, previous attempts of quite smoking, (if it was like that, previously treatments received). Each participant was consulted about medical advise to quit smoking, how many of them received, what it was about, and which ones had received integral assessment on quitting smoking (behavioral intervention and pharmacology with subsequent grupal or individual following, single therapy schema availed for tobacco treatment). Statistic data treatment was done with statistic pack SPSS version 11.0.1 (2001). **Results:** A total of 480 smokers were included. 56% male. Mean age 42 + 10 years. 85% of them smoked between 20–40 cigarettes per month. 84.6% of studied individuals began smoking before 20 years of age. 87% of cases were aware of the risks of tobacco use and 86 % exposed other individuals, including their own families to such a risk Only 4% was pharmacologically treated on cessation. 43% was available to stop smoking in the next month (preparation stage of Di Clemente - Prochanska). With regard to cessation, 78 % received medical advice, but in 94% of cases it was based on adverse effects of tobacco smoking. Only 6% had received advice on cessation of smoking. **Conclusion:** Exists a low rate of integral advice on tobacco cessation, probably due to status of same profession's smokers and/or inefficient topic capacitation as shown in some studies, not only in Argentina, but in the world with biggest affectation in poor countries. It seems to me a big relevance to know the different pharmacological studies, diagnostic techniques and therapies, but we can not allow to bring the patient a benefit way in cardiovascular prevention such as giving advice on tobacco cessation as an individual entity focus on theories and practice seven post graduate courses for specialist.

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THE POLARISING SOLUTION IN THE TREATMENT OF ACUTE CORONARY SYNDROM

R. Matunovic[1], S. Rafajlovski[2], M. Rabrenovic[3], J. Samardzic[4], R. Spasic[2]. *[1]Clinic of cardiology MMA,Belgrade, Serbia [2]Clinic of urgent medicine MMA, Belgrade, Serbia [3]Emergency departement MMA, Belgrade, Serbia [4]Institute for pharmacology, Medical Faculty, Belgrade [5]Clinic of urgent medicine MMA, Belgrade, Serbia*

The polarising solution consists of glucose, appropriate dose of insulin and potassium. This solution has the vasodilation and metabolic effects, thus improves the microvascular perfusion and increases the oxygen supplying and utilization in myocardium. For these effects, it is known that the solution could have a positive effect for the patients with cardiac ischemia. **Methods:** We applied the polarising solution, in addiction to standard therapy, in patients with myocardial ischemia and developing myocardial infarction without ST-segment elevation (non STEMI). Then, we analized the effect of polarising solution to cardio specific enzymes profile. The polarising solution consists of : 500 ml 20% glucose, 16 IU of insulin and 30 mEqKCL. **Results:** 38 patients with signs of NSTEMI, without trombolitic therapy and with detected maximum elevation of CPK from 500 U to 700 U, were randomized into 2 groups. The first group of 19 patients received the polarising solution (I group) and the second group of 19 patients received the physiological solution (II group), in addiction to standard therapy. We followed the time for normalisation of cardiac enzymes. The daily profile of cardiac enzymes was taken 4 times for 24 hours. In 15/19 patients in I group and only 7/19 patients in II group, we found the normalisation of cardiac enzymes portion CPK (during the first 24 hours), and for 6 patients in II group the cardiac enzymes normalisation was found only after 48 hours (p<0,001). **Conclusion:** Application of polarising solution in acute coronary syndrom significantly decreases the lasting time of acute myocardial ischemia.

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IMPORTANCE OF CARDIOSURGERY TREATEMENT IN PATIENTS WITH INFECTIVE ENDOCARDITIS AND HEART FAILURE

R. Matunovic[1], Z. Mijailovic[1], D. Tavciovski[1], Z. Vucinic[1], Z. Davicevic[1], Z. Jovic[1], V. Begovic[2], J. Samardzic[3]. *[1]Clinic of cardiology MMA Belgrade, Serbia [2]Clinic of cardiology MMA Belgrade, Serbia [3]Clinic of cardiology MMA Belgrade, Serbia [4]Clinic of cardiology MMA Belgrade, Serbia [5]Clinic of cardiology MMA Belgrade, Serbia [6]Clinic of cardiology MMA Belgrade, Serbia [7]Clinic infective end tropical disease Belgrade, Serbia [8]Institute for pharmacology, Medical Faculty, Belgrade*

For the past 10 years, the progress of infective endocarditis (IE) treatment has been achieved in sense of patomorphological, clinical, diagnostic but also therapeutic modality of treatment. Special attention deserves the patients with IE and symptoms and signs of heart failure (HF). We know very much about it, but still there are some unexplain questions. **Aim** of our study is to determine if there is any difference in survival of IE patients with signs and symptoms of heart failure according to applied methods of treatment (surgery or medication). **Methods:** In this prospective study, we examined 122 patients with IE, 50 men and 72 women, average age of years 47. Aethiologicly IE was on court of rheumatic heart disease in 65 cases, congenital heart disease in 22, native valves in 9 and prosthetic valves in 26. 61 patients from total 122 patients had heart failure. Mortality in study was analyzed during 5 years of following and treating these patients. **Results:** From total number of patients with IE, during 5 years following of 122 patients, 64 patients died or 52.4%. From 61 patients with heart failure, after the 5 years of following 35/61 died (57.4%) in comparison with 29/61 (47.5%) patients who didn't have heart failure (statistically important difference, p<0,005). 19/24 patients with HF who remained only on medical therapy, died (79.1%) during a period of following, and the other side, died 16/37 (43.2%) who were undergone by surgery and combine medical and surgery therapy. **Conclusion:** In spite of high preoperative risk and mortality, patients with IE and heart failure, who undergone cardiosurgery, have statistically less mortality in comparison to patients who remained on medical treatment. Cardiosurgery may be considered like a method of choice in treatment of these patients after the adequate medical preparation.

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Resting Electrocardiographic Variables of Patients with Severe Coronary Artery Disease Undergoing Coronary Artery Bypass Graft Surgery plus Intramyocardial Bone Marrow Cell Injection: An One-Year Follow Up Study

M. S. Bittencourt[1], I. T. Schettert[1], C. J. Grupi[1], L. A. M. Cesar[1], J. E. Krieger[1], L. A. O. Dallan[1], S. A. Oliveira[1], L. H. W. Gowdak[1]. *[1]Heart Institute (InCor) - University of Sao Paulo Medical School*

Background: Intramyocardial injection of adult bone marrow cells (BMC) has been tested in clinical trials for a wide variety of cardiovascular diseases. Detailed electrocardiographic (ECG) evaluation of this therapy has not been studied to date. Since potential interference of BMC with normal conduction, repolarization and arrhythmias as well as the development of fibrosis have been a primary safety concern, we studied the resting ECG characteristics of this therapy in patients undergoing incomplete coronary artery bypass graft surgery (CABG) for severe coronary artery disease. **Methods:** 18 patients (3 women), with limiting angina and 3-vessel coronary artery disease, not optimal candidates for complete CABG were enrolled. BMC were obtained immediately prior to surgery, and the lymphomonocytic fraction separated by density gradient centrifugation. During surgery, 5mL containing approximately 13±3 x 10^7 BMC (CD34+=1.3±0.4%) were injected in non-grafted areas of ischemic myocardium. Patients underwent resting ECG monitoring before and during the first year (at 1, 6, and 12 months) after surgery. Data on heart rate, PR interval, P wave axis, QRS duration and axis, and corrected QT (QTc) interval were acquired. All ECGs were blindly reviewed by a cardiologist. Data compared using one-way ANOVA. Results are presented as mean ± SE. **Results:** Patients had a baseline resting heart rate of 64±3 bpm. The P wave axis was 38± 4°. The QRS axis was -4± 6°. The baseline PR interval was 175± 5 ms, the QRS duration was 96± 3 ms and QTc was 410±5 ms. All electrocardiographic parameters remained unchanged during the 1, 6 and 12 months follow up elctrocardiograms. **Conclusions:** Intramyocardial injection of BMC combined to CABG did not interfere with conduction or repolarization as detected eletrocardiographically, nor did it induce any arrhytmias during the first year of follow up after the procedure.

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Outcomes at Follow-Up of Patients who had Carotid Stenting Periprocedural TIA or Minor Stroke Complications.

C. Fava[1], G Lev[1], L. Valdivieso[1], L. Villagra[1], J. Scaglia[1], A. Mollon[1], O. Mendiz[1]. *[1]FAVALORO FOUNDATION*

Objective: To evaluate late evolution of patients (Ptes.) who had carotid stenting (CASS) periprocedurals TIA or minor neurological complication (MNC) **Material and Methods:** 498 consecutive CASS procedures were included from October, 1995 to September, 2007 (6 procedures were excluded because of major stroke) 4.4% (22 procedures) had TIA or minor stroke. Angiographic success (AS) was defined as: residual stenosis < 30% and clinical success as: AS without major complications (death, major stroke, AMI or urgent surgery) **Population Characteristics** for Ptes. with MNC: Median Age of Ptes. with TIA or minor stroke was 60.1±9.2 years vs. 68.8±9, male 81.8% vs. 72.5%, 90.9% vs.83.4% with hypertension, 40.9% vs. 21.4% diabetics, 22.7% vs. 15.5% with previous stroke, 36.4% vs 16.4% with previous TIA, 77.3% vs 80.2% (0.0001) with protection devices. **In-hospital Outcomes:** AS: 100% vs. 99.4%, CS: 100% vs. 98%, non related CASS death 0.8%. **Follow-Up:** All Ptes. with periprocedural MNC were followed at 24.3±15.3 months (2–60) and those without minor strokes at 22.4±9 months (2–130), non related death 9.1% vs. 4.5%, related death 0% vs.

1.1%, stroke 0% vs. 3.9%, restenosis 0% vs. 1.9%. **Conclusion:** In this serie the presence of periprocedural TIA or MNC during CASS was not related to a worse outcome at follow-up.

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One Year Follow up of Ambulatory Electrocardiographic Variables of Patients with Severe Coronary Artery Disease Undergoing Coronary Artery Bypass Graft Surgery plus Intramyocardial Bone Marrow Cell Injection

M. S. Bittencourt[1], I. T. Schettert[1], C. J. Grupi[1], L. A. M. Cesar[1], J. E. Krieger[1], L. A. O. Dallan[1], S. A. Oliveira[1], L. H. W. Gowdak[1]. [1]*Heart Institue (InCor) - University of Sao Paulo Medical School*

Background: Intramyocardial injection of adult bone marrow cells (BMC) has been experimentally used in clinical trials. Ambulatory electrocardiographic evolution of this therapy have not been widely studied to this date. Since BMC injection might potentially induce arrhythmias and might also interfere with autonomic function on the heart, we analyzed the ambulatory electrocardiographic (ECG) characteristics, including the heart rate variability, of this therapy in patients undergoing incomplete coronary artery bypass graft (CABG) surgery for severe coronary artery disease. **Methods:** 18 pt (3 women), with limiting angina and 3-vessel coronary artery disease, not optimal candidates for complete CABG were enrolled. BMC were obtained immediately prior to surgery, and the lymphomonocytic fraction separated by density gradient centrifugation. During surgery, 5mL containing approximately $13\pm3x10^7$ BMC (CD34+=1.3±0.4%) were injected in non-grafted areas of ischemic myocardium. Patients underwent ambulatory ECG monitoring before surgery and at 1, 6 and 12 months after the procedure. Data on minimal, mean and maximal heart rate, as well as heart rate variability (HRV) and the incidence of supraventricular and ventricular premature complexes and/or ventricular tachycardia were recorded. All ambulatory ECGs were blindly reviewed. The data compared using one-way ANOVA. Results are presented as mean ± SE. **Results:** The baseline mean ambulatory heart rate was 67± 3 bpm. It did not change during any follow up visit. Similarly, the baseline number of premature ventricular (453± 367) and supraventricular (91± 58) beats did not significantly change at any follow up visit. No patient presented with any sustained or complex VT during baseline or at any follow up evaluation. The HRV was 107± 9ms at baseline, decreased to 76± 6ms at 1 month after surgery and then gradually increased to 99± 7ms at 6 months and 111± 8ms at 1 year follow up. (P = 0.007). **Conclusions:** Intramyocardial injection of BMC combined to CABG did not induce atrial or ventricular premature beats or complex arrhythmias during the first year post CABG. Although the mean heart rate did not change at any follow up, the HRV decreased in the 1st month post CABG, as it has been previously described for isolated CABG procedure. However, it eventually recovered at 12 months after the combined procedure.

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Left Main Coronary Artery Disease is Correlated to the Clinical Characteristics of Stable Coronary Artery Disease Patients. A Study Ajusted to the Coronary Atherosclerotic Burden

A. L. V. Oliveira[1], M. S. Bittencourt[1], A. C. Pereira[1], L. A. M. Cesar[1], L. H. W. Gowdak[1]. [1]*Heart Institute (InCor) - University of Sao Paulo Medical School*

Background: Among patients with coronary artery disease, those with left main coronary artery (LMCA) stenosis are considered at the highest risk for cardiovascular events. It is unknown whether specific features of this population would make it possible to identify those likely to have significant LMCA stenosis before coronary angiography. Thus, we determined the characteristics of patients with LMCA disease compared to those without LMCA with similar coronary atherosclerotic burden. **Methods:** 871 patients were prospectively included after their first coronary angiography for invasive assessment of stable coronary artery disease. To calculate the atherosclerotic burden, we analyzed 10 coronary arteries including all three major epicardial arteries and their main branches. For each vessel, 1 point was given if at least one lesion ≥ 50% was found. Pt were then divided into 2 groups according to the presence or absence of significant LMCA disease (stenosis ≥ 50%). Each pt was randomly paired in a 1:3 fashion to pt without significant LMCA disease but equal coronary atherosclerotic burden (coronary score). **Results:** 62 (7.1%) pt had significant LMCA disease. Table 1 shows the main variables in both groups. Clinical data from patients with and without LMCA disease **Conclusions:** Compared to pt without significant LMCA disease but with the same coronary atherosclerotic burden, those with LMCA have similar clinical and demographic characteristics, except for a significant greater age.

TABLE 1. MAIN VARIABLES OF PATIENTS WITH AND WITHOUT LMCA DISEASE (* = P < 0.05)

	LMCA	No LMCA
Age	59.9±10.4	64.9±9.0 (*)
Total cholesterol	231±45	230±48
Triglycerides	197±131	193±131
LDL cholesterol	147±36	145±47
HDL cholesterol	42±11	42±8
Diabetes (%)	65 (39)	25 (40)
Current smoker (%)	38 (30)	14 (28)
Body mass index	27.3±4.4	26.9±4.1
Coronary score	3.56±1.26	3.85±1.46

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Bisoprolol and perindopril combination in post infarction left ventricle remodelling

KG Adamyan[1], AV Astvatsatryan, AL Chilingaryan. [1]*Institute of Cardiology, Yerevan, Armenia*

To evaluate the effectiveness of combination of bisoprolol (B) and perindopril (P) treatment in patients (pts) with post infarction left ventricular remodeling (LVR). **Methods:** 86 pts (female/male=36/50, aged 45.3±12.2) with acute myocardial infarction (AMI) and low ejection fraction (< 35%) were involved in our study. All of them were on standard therapy (ST). Doses were titrated up to 5 mg/daily for B up to 8 mg/daily for P. In 24 hours pts were randomly divided in 2 groups. 1 Group pts (n=45) were on combination of B+P+ST. 2 Group (n=41) were on P+ST. First standard EchoCG was performed at discharge (8–14 days after admission), second on 80–100 days. LV wall thickness, chamber diameter, LV mass and LV ejection fraction (LVEF) were followed up. **Results:** Systolic and diastolic blood pressure decreased at the discharge and at the end of the follow-up in both groups. In 1 Group at the end of follow up heart rate reduction was significant compared at the discharge: 84 ± 15 vs. 62 ± 11 beats/min; $p < 0.02$. This reduction was more prominent in 1 Group compared with 2 Group (at discharge: $p < 0.03$ at the end of the follow-up: $p < 0.01$). LV wall thickness of the noninfarcted wall decreased in 1 Group (13.3 ± 2.7 vs. 11.9 ± 2.1 mm; $p < 0.05$) at the end of the follow-up with almost equal parameters in comparison of two groups at the end of the follow-up (p=NS). LV mass decreased both in 1 Group (257 ± 43 g vs. 227 ± 40 g; $p < 0.03$) and in 2 Group (245 ± 39 g vs. 211 ± 33 g; $p < 0.05$) at the end of the follow-up (p=NS). LVEF increased in 1 Group at the end of the follow-up (37 ± 5% vs. 47 ± 4%; $p < 0.03$) and in 2 Group (36 ± 3% vs. 42 ± 4%; $p<0.05$). **Conclusion:** Influence of bisoprolol and perindopril combination treatment on LVR characteristics is better than perindopril alone.

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Cardiac resting metabolism: energetic cost of calcium withdrawal

P. Bonazzola[1–2], D. Takara[2]. [1]*ININCA, Facultad de Medicina, UBA-CONICET* [2]*Cátedra de Biofísica, Facultad de Odontología, UBA*

In arterially perfused adult rat heart and in the presence of the cardioplegic agent butanodione monooxime (BDM) 10 mM, the behavior of basal metabolism (evaluated as resting heat production) upon extracellular calcium removal (0Ca) was studied. Calcium lack from the perfusion media induced an increase (4.4±0.1 $mW.g^{-1}_{dw}$, n=30, $p<0.05$) in resting heat production (H_r) that was dependent on extracellular sodium concentration (Na_o). Through the use of pharmacological tools we tested possible responsible mechanisms for such a response. The myothermic performance to Ca withdrawall was (statistical significance vs. no drug present): a) unaffected by the presence of the Na channel blocker tetrodotoxin (TTX) 10 μM (4.3±0.6 mW. g^{-1}_{dw}, n=6, NS); b) partially decreased by the presence of either the L-type Ca channel blocker nifedipine (NIF) 3 μM (2.8±0.4 mW. g^{-1}_{dw}, n=11, $p<0.05$) or the reverse mode of the sarcolemmal Na-Ca exhanger (SL-NCE) inhibitor K-BR7943 (KBR) 5 μM (2.5±0.2 mW. g^{-1}_{dw}, n=12, $p<0.05$) or the mitochondrial Na-Ca exchanger (mit-NCE) inhibitor clonazepam (CLO) 10 μM (3.1±0.3 mW. g^{-1}_{dw}, n=12, $p<0.05$) or the presence of the Ca chelator EGTA 10 μM (1.7±0.3 mW. g^{-1}_{dw}, n=9, $p<0.05$); c) fully blocked by either the increase (from 0.3 to 3 mM) in extracellular magnesium concentration (-0.3±0.3 mW. g^{-1}_{dw}, n=8, $p<0.05$) or the decrease (from 135 to 40 mM) in Na_o (-0.5±0.3 mW. g^{-1}_{dw}, n=10, $p<0.05$). Futhermore, once steady resting heat rate in 0Ca was reached, both NIF and CLO decreased H_r (-1.6±0.2 mW. g^{-1}_{dw}, n=10 and -1.3±0.3 $mW.g^{-1}_{dw}$, n=8 for NIF and CLO, respectively, $p<0.05$). In addition, no significant change in H_r was observed when CLO was introduced after steady heat rate in 0Ca perfusion was established in the presence of either KBR (0.0±0.2 $mW.g^{-1}_{dw}$, n=12, NS) or EGTA (0.3±0.3 $mW.g^{-1}_{dw}$, n=9, NS). The results suggest that in resting cardiac muscle Ca removal promotes a Na influx to the tissue through pathways other than Na channels. Although Ca influx through L-type Ca channels cannot be ruled out, the increased Na_i would induce Ca entry through the reverse mode of SL-NCE. On the other hand, as a result of increased Na_i, it was expected a mitochondrial Ca depletion (and decrease in metabolic rate) from an increased activity of mit-NCE but this seems not to be the case. On the contrary, the results obtained with CLO without and with EGTA are compatible with a mit-NCE working at reverse mode. Grants CONICET-PIP 6024/05 and UBACYT 0023

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Tissue Doppler Tricuspid Annular study with loading variations: clinical and pronostical interest

G. Robles[1], M. Feissel[2], R. Khalaky[3], J. Badie[4], O. Ruyer[5], A. Grentzinger[6], JP Faller[7].

The aim of this study is to test peak myocardial systolic velocity(Sm) by tissue Doppler imaging (TDI) with preload variations induced by Passive Leg Raising (PLR). Patients are classified under positive response in case of Sm wave >/= 30%&conversely. **Population Study - Methods:** 37 intensive care patients admitted for severe dyspnea are studied and divided in 2 groups. Regarding their pathology: Groupe1: 12 patients with cardiac right dysfunction predominant (9 with acute right ventricular dysfunction and 3 COPD with chronic pulmonary hypertension) Groupe2:25 patients with left ventricular dysfunction predominant (13 ischemic heart diseases, 10 dilated idiopathic cardiomyopathy, 2 hypertrophic cardiomyopathy).All patients will undergo echocardiography & doppler, peak myocardial systolic velocity(Sm) measured by pulsed-wave tissue Doppler imaging (TDI) before and after Passive Leg Raising. **Results:** Group 1: 5 patients had positive response(R) Sm increase to 43+-10% and 7 non response(NR) patients, Sm increase only 6.6+- 4.5%. The study of 2 subgroups shows that patients with positive response(R) have less severity than the non response(NR) group in terms of hypoxia,RV-LV ratio, isotropic drugs and non invasive ventilation(2 NIV and 1 IV in NR). The

SGI(IGS) Score (27+-11 in positive response patients and 40.12 in non response patients. No mortality was found in this group Groupe2: 9 patients with positive response(Sm increase 40+-10%) and 16 non response patients Sm only increase 3+-4%. The analyse of two groups show that patients with positive response(R) have less severity than non response patients.(NR). Mortality: no mortality in response patients and 31% in non response patients. Lenght stay in intensive care unit: 14.5 +- 8 days forn non response patients compare to 6.25+- 4 in positive response patients.SGI(IGS) Score (31+- R and 40+-14 NR). The methods feasibility is excelent, highly reproducible as all the patients were analysed. **Conclusion:** One positive response to PLR could signify a preload reserve, therefore an intravenous fluid therapy strategic should be considerate, conversely no response to PLR indicates several myocardial dysfunction with prognostic on hold.

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CAN WE USE THE QRS COMPLEX AXIS AS A ELECTROCARDIOGRAPHIC PREDICTOR OF EFFICACY OF CARDIAC RESYNCHRONIZATION THERAPY?

J. García-Seara[1], B Cid Alvarez[1], JL Martinez Sande[1], M Bastos Fernandez[1], A Varela Roman[1], L Grigorian Shamagian[1], P Rigueiro Veloso[1], E Gonzalez Babarro[1], JR Gonzalez-Juanatey[1]. [1]*CLINICAL HOSPITAL SANTIAGO DE COMPOSTELA*

Purpose: Cardiac Resynchronization Therapy (CRT) benefits symptoms and survival of patients (Pts) with left bundle branch block (LBBB) and left ventricular systolic dysfunction. Pts. with LBBB and normal QRS axis may have different left ventricular activation pattern than Pts. with LBBB and left QRS axis. We evaluated whether the QRS complex axis can predict clinical outcome in Pts. who underwent CRT. **Material and Methods:** We retrospectively evaluated clinical outcome in 53 Pts. referred for CRT. We classified Pts. according QRS axis in Group I: QRS axis between -30° and +120° (34 Pts.) and Group II: QRS axis between -30° and -90° (19 Pts.). The left ventricular lead location was classified into 3 groups: anterior (interventricular vein), lateral (lateral vein) and posterior (posterolateral or middle cardiac vein). We analyzed the relationship between left ventricular lead location and clinical outcome (New York Heart Assocciation class for congestive heart failure) in the two groups. **Results:** 48 Pts. (82.7%) improve after CRT at least one NYHA class during follow-up. Amongst left ventricular lead location, it was anterior in 24 Pts. (45.3%), Lateral in 17 Pts. (37%) and posterior in 12 Pts. (22.6%). Pts. responders were 20/24 (83.3%) in anterior subgroup, 16/17 (94.1%) in lateral and 9/12 (75%) in posterior. In group I, the rate of responders was: anterior 11/15 pts. (73.3%), lateral 9/10 pts. (90%) and posterior 8/9 (88.8%). In group II, the rate of responders was: anterior 9/9 (100%), lateral 7/7 (100%) and posterior 1/3 pts.(33.3%). **Conclusions:** Implanting left ventricular lead in anterior position has a better clinical outcome in patients with left deviation of QRS axis compared with those with normal QRS axis and it should be taken into account as an alternative to lateral vein location in this kind of patients.

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INVERSE REMODELING AFTER DEPENDENT CAVOTRICUSPID ISTHMUS FLUTTER ABLATION

J. García-Seara[1], L Martinez-Sande[1], B Cid Alvarez[1], F Soto Loureiro[1], R Vidal Perez[1], M Bastos Fernandez[1], M Gutierrez Feijoo[1], M Vega Fernandez[1], JR Gonzalez Juanatey[1]. [1]*CLINICAL HOSPITAL OF SANTIAGO DE COMPOSTELA*

Purpose: To evaluate cardiac morphological changes after dependent cavotricuspid isthmus atrial flutter ablation (DCIAF) **Material and Methods:** We analized prospectively 56 patients diagnosed with AF. 53 pts. (94.6%) were DCIAF, 2 (3.5%) left atrial flutter and 1 (1.7%) right anterolateral flutter. Mean age was 64.3± 9.2 years old, 46 pts (82.1%) were men and 12 pts. (21.4%) did not have structural heart disease. The most frequent heart disease associated was hypertensive cardiopathy 20 pts.(35.7%). 10 pts.(17.9%) had symptoms of heart failure, 15 pts (26.8%) had tachycardiomyopathy. We performed an echocardiographic examination in all patients at baseline and at 1 year follow-up and determined the following parameters: right atrial area (RAA), left atrial area (LAA), interventricular septum wall thickness (IVS), posterior wall thickness (PW), left ventricular diastolic diameter (LVDD), left ventricular systolic diameter (LVSD), left atrial dimension (LAD) and ejection fraction (EF) We analysed the variation coefficient (VC) interobserver and intraobserver Statistical analysis was performed using Wilcoxon test **Results:** There were 3 deaths (5.4%) during follow-up. There were lack of any ecocardiographic measurement in 8 pts (14.2%) due to a deficient acoustic window. Interobserver VC mean was in the range of 2.3%–4.5%. Intraobserver VC mean was in the range of 0.83%–5.6%. The results are shown in the following table

Measurement	Number of patients improve (%)	Mean of Improvement (Standard Deviation)	Range	p
RAA	65,9	-4,20 (6,20)	-21,2 +7,4	0,000
LAA	59,5	-0,99 (7,16)	-20,0 +18,9	0,295
LAD	47,9	-0,07 (0,59)	-1,79 +0,94	0,46
EF	70	+8,78 (14,77)	-15,7 +37,4	0,002
IVS	57,1	-0,08 (0,24)	-0,77 +0,35	0,05
PW	50	-0,05 (0,01)	-0,72 + 0,45	0,25
LVDD	60	-0,23 (0,55)	-1,70 +0,60	0,04
LVSD	67,5	-0,43 (0,77)	-2,56 +0,88	0,003

Conclusions: DCIAF ablation produces an inverse remodeling of right atrial area and left ventricle dimensions and a strong improvement of left ventricular ejection fraction.

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Echocardiographic assessment of early left diastolic dysfunction and correlation with BNP serum levels estimation in patients without clinical heart failure

K. Hristova[1], S. Milanov[1], I. Filibev[1]. [1]*National Hospital of Intensive Care* [2]*National Hopsital of Intensive Care* [3]*National Hospital of Intensive Care*

Aim: The main aim of this study was to investigate the correlation with BNP serum levels and early left diastolic dysfunction in patients without clinical manifestation heart failure (HF). **Methods:** Thirty- four patients without clinical manifestation HF (24 males, 10 females: age 65±9) with left ventricular ejection fraction (EF) >50 % were examined of standard protocol (HP Echocardiograph machine). Each patient underwent echo study including estimation of: peak velocity of early (E) and late (A) transmittal flow, deceleration time of E wave (DT), isovolumic relaxation time (IVRT), total isovolume index (TEI), E (ETT) and A (ATT) wave transited time to the LV outflow tract, flow propagation velocity of E wave (Ep). All patients were blood sampled in order to assess BNP serum levels. BNP serum levels were measured with an ELISA (pg/ml) (ROCHE Elecsys). **Results:** Increased BNP levels (>80pg/ml) were found in 23 patients (67%).Diastolic dysfunction of the left ventricle (impaired relaxation) was diagnosed in 83% (29 pts). The value of TEI index increased pathologically in 41 % of pts. (0, 34+0, 08). Significant correlations were found out for BNP and : Ep(r=0q49, p **Conclusions:** Diastolic dysfunction of the left ventricle is related to increased BNP serum levels in patients without clinical manifestation HF. The relation between early diagnostic left diastolic dysfunction and abnormal BNP serum levels is predictor for new onset HF

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ECHOCARDIOGRAPHIC REGIONAL RIGHT VENTRICULAR DYSFUNCTION IN PATIENTS WITH ACUTE PULMONARY EMBOLISM

K. Hristova[1], S. Milanov[1], I. Filibev[1], D. Petrov[1]. [1]*NATIONAL HOSPITAL OF INTENSIVE CARE*

Aim : To evaluate the clinical utility of the McConnell sign in the bedside diagnostic of patients presenting to the Emergency department with acute RV dysfunction due to pulmonary embolism. A normally contracting RV apex associated to a severe hypokinesia of the mid-free wall (McConnell sign) has been considered a distinct echordiographic pattern of acute pulmonary embolism. **Material and Method:** During the last one year we studie 78 patients, 42 women and 35 men, between 25- 80 years (mean age 69,7 y.o.) who were with clinical database and diagnosed as having massive or submassive pulmonary embolism. All echocardiographic studies were examined by 2D –echo and Doppler sonoraphy, ECG, X-ray of pulmonary system and 30 with CT. **Results:** Were found in all patients enlargement of right heart chambers, inferior vena cava dilatation, demonstration of increased RV –RA pressure gradient in massive and submissive pulmonary embolism and was detected in 38 patients (75%) severe right ventricular hyperkinesias and sepal duskiness with normal contraction of the apical segment. The sensitivity, specificity, positivist values of the McConnell sigh for the diagnosis of acute pulmonary embolism are 75 %, 30 %,and 70 %. **Conclusions:** The present study confirms the fairly good sensibility but not the high specificity of the McConnell sigh for the echocardiographic diagnosis of acute pulmonary embolism of patients with acute right ventricular dysfunction. Echocardiographic approach is especially worthwhile in the Emergency Department or Coronary Care Unit to investigate patients with circulatory failure of uncertain cause, when the electrocardiogram is not conclusive.

P380

THE RELATIONSHIP BETWEEN SERUM HBA1C LEVELS AND SEVERITY OF CORONARY ARTERIAL DISEASE IN DIABETIC PATIENTS

OC Yontar[1], A Erdem[1], MB Yilmaz[1], K Yalta[1], I Tandogan[1].

Background: Diabetes Mellitus (DM) is known to be a markedly increased risk for cardiovascular disease. The precise mechanism is unclear but poor glycemic control is likely to contribute. The hemoglobin A1c (HbA1c) level, is an indicator of average blood glucose concentration during prior 2 to 3 months. Some studies suggest HbA1c levels may be related to cardiovascular risk and mortality in general population with/without DM. We aimed to examine the relationship between HbA1c level and severity of coronary arterial disease (CAD) in diabetic patients. **Methods:** 57 diabetic patients (28 female, 29 male) who admitted to our clinic with CAD were included in our study. All cases underwent coronary angiography (CAG). The extent of coronary artery disease for each patient was evaluated by using Gensini and Reardon scores which have been proven to be clinically useful in the quantification of CAD. HbA1c and High sensitive C Reactive Protein (hsCRP) levels were measured from pre-procedure blood samples. The correlation between the HbA1c level and CAG scores was investigated. **Results:** The mean values of HbA1c, hsCRP, Gensini and Reardon scores were 9.81±2.95, 5.66±8.81, 40.04±29.43 and 10.02±5.90, respectively. There was a significant positive correlation between the HbA1c and CAG scores (r=0.59 for Gensini, r=0.47 for Reardon, p<0.001 for both). Both sexes showed no significance with regard to these parameters and correlations. No significant correlation between hsCRP and CAG scores (p>0.05) detected. **Conclusion:** Our data demonstrated a significant positive correlation between HbA1c and CAG scores, indicating as a marker of extensive coronary arterial disease.

P381

Entry – and exitblock as endpoints in segmental pulmonary vein isolation by irrigated catheter ablation and the mesh mapper technique

A. Meissner[1], M Von Bracht[1], M Christ[1], P Maagh[1], CA Perings[1], HJ Trappe[1], G Plehn[1].
[1]*Department of Cardiology and Angiology, Ruhr-University Bochum/Germany*

Background: Interventional therapy of paroxysmal atrial fibrillation (PAF) and chronic atrial fibrillation (CAF) is one of the most challenging procedures in the invasive electrophysiology. Different therapy strategies have been established since ectopic activity from the pulmonary veins (PV) have mainly be identified to initiate PAF and to maintain CAF. **Purpose:** The purpose of our prospective study was to determine the acute therapeutic success by entry- and exitblock stimulation manoeuvre in segmental pulmonary vein isolation and the implementation of a new multi-polar basket mapping catheter, the mesh mapper catheter (MMC). **Methods:** Predominantly we investigated pts. with PAF, as well pts. with persistant AF, and with permanent AF. All PV's were carefully mapped with the MMC and deflection of 32 bipolar electrical conductions. Circumferential ablation around the MMC on the atrial side of the PV was done by irrigated RF application. Primary endpoint for successful ablation was an entry block, defined as no rest signals in the MMC post ablation (entry 100) or a remarkable reduction of the signals of more than 75% (entry 75–100). Secondary endpoint was the exit block by stimulation from the MMC to the atrial side in the coronary sinus catheter. **Results:** 72 pt., 49 male (68.1%), 23 female (31.9%), mean age 60.5($\pm$10.5) years were included to our study, 47 (65.2%) with PAF, 12 (16.7%) with persistant AF, 13 (18.1%) with permanent AF. Overall 288 PV's in 72 pts had to be examined, 284 PV's (98.6%) could be analysed by this approach. Related to the study population 68 pts. (94.7%) could be analysed completely, in 4 pts. (5.32%) the RIPV was not reached by the MMC. Concerning the whole study group the endpoint >entry 100< could be achieved in all PV's in 64.9%, in 58.3% for the LSPV, in 65.3% for the LIPV, in 76.4% for the RSPV and finally in 59.7% for the RIPV. Concerning the whole study group the endpoint >entry 75–100< could be achieved for all PV's in 30.57%, 40.3% for the LSPV, 30.6% for the LIPV, 22.2 % for the RSPV and 29.2% for the RIPV. Despite significant more RF burns necessary for the ablation of the LSPV we found no differences in the endpoint >entry 100< and >entry 75–100< between the PV's (exact fischer test). Regarding the whole study cohort the endpoint exitblock could be achieved in 80.9% for all PV's, in 72.2% for the LSPV, in 88.9% for the LIPV, for 83.3% for the RSPV and finally for 79.2% for the RIPV. **Conclusion:** Segmental PV isolation by irrigated catheter ablation and application of a MMC is a safe, new ablation method which offers beside good anatomical orientation an excellent electrophysiological control of the ablation line by different stimulation maneuver. Entry- and exitblock stimulation prove a high acute success rate post ablation in our cohort.

P382

SCREENING PATIENTS FOR HYPERTENSION IN EMERGENCY DEPARTMENT

K. Hristova[1], S. Milanov[1], I. Filibev[1]. [1]*NATIONAL HOSPITAL OF INTENSIVE CARE, SOFIA*

Background and aims: Identification of patients with hypertension crisis (HC) in emergency room, when organ damage occurs is a result of severely elevated high blood pressure, this were considered in hypertensive emergency. When this occurs, blood pressure must be reduced immediately to prevent organ damage. This is done in an intensive care unit of a hospital. **Material and methods:** The analysis was performed in 23803 patients, they visited emergency room ambulance for one year (from January until end of December 2006) in National Hospital of Emergency Care in Sofia. Around 15946 (67 %) patients (from 23803 patients visited ER) were presented with hypertension, but only 1132 (4, 76%) cases were presented with hypertensive crisis, defined as systolic pressure $\geq$ 180 mmHg and / or diastolic pressure $\geq$ 110 mmHg and symptoms of hypertensive emergency. **Results:** We identified 1132 patients (4,8 %) with HC, more frequently male - 644 pts (57%) vs. 488 female (43%). In population, age 50 – 60 years was highest (30,9 %) and we identified 350 patients- 191 male and 159 female, the second group were age 61- 70 – 19,4 % and group 41–50 ages- 18,4 %. The big group is too of ages 21–40 – 12,5 %. 128 patients (11,3 %) were comparing with –acute coronary syndrome – 8 pts, transient ischemic attacks -23 pts, stroke – 19 pats, heart failure -48 pts. Aortic aneurism and dissection- 6 pts. There are founded too seasonally variability of HC- more of cases were in winter – spring and autumn seasons. **Conclusions:** Patients with HC in our series were predominantly male, especially group –age "51–60"years. Malignant hypertension has been reported by others, more frequently in young males. More than 11,3 % of cases were previously diagnosed with abnormalities and needed hospitalization and 88,7 % of cases received intensive care in emergency room.

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PREVENTION ON MORTALITY AND SUDDEN CARDIAC DEATH IN PATIENTS WITH CARDIOVASCULAR DISEASES: EFFECT OF HIGHLY PURIFIED OMEGA – 3 FATTY ACID (OMACOR).

K. Hristova[1], S. Milanov[1], I. Filibev[1]. [1]*NATIONAL HOSPITAL OF INTENSIVE CARE, SOFIA*

The pathological substrate of sudden death is the electrical instability of the surviving myocardium. Experiments have shown that ischaemia – induced electrical instability of the heart can be reduced by incorporating long- chain omega -3 fatty acids (PUFAs) into cardiac membranes. Increasing heart rate (HR) is an independent predictor of cardiovascular mortality. The **aim of** study was to investigate patients with cardiovascular disease- myocardial infarction, chronic stabile angina and nonstabile angina and effect of treatment with highly purified omega -3 PUFA-therapy and prevention of arrhythmia and fibrillation. **Methods:** A study was done on 36 patients (28 men and 16 women) mean age 57,3 years. A 24 hours Holter ECG was conducted before administration and 1.month and after 3 months therapy with 1 g Omacor daily. We used method of time domain analysis, of which possibly the index SDNN, the standard deviation of all R-R intervals recorded and frequency-domain analysis for frequency- specific oscillations in heart rate. After 12 weeks of omega -3 PUFA supplementation was associated with a significant increase in indices of HRV in 95 % of patients. After 3.months in all patients with myocardial infarction and ischemic diseases the presense of arrhythmias were 41% smaller and 70% were reduced ventricular premature complexes (VPCs). In **conclusion** omega-3 PUFAs having significantly satisfied reduction in heart rate, and preventing cardiac arrhythmias and ventricular tachycardia and hence sudden death in patients with cardiovascular diseases.

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Non-invasive assessment of arterial pulse pressure by using automatic analysis of B-mode echographic images

S. Graf[1–2], R. Armentano[1–2]. [1]*Universidad Favaloro* [2]*Universidad Tecnológica Nacional*

Pulse pressure is not constant throughout the arterial tree increasing centrifugally. Therefore, use of pulse pressure at one arterial site, such as brachial artery, as surrogate for pulse pressure at another arterial site may be erroneous. Applanation tonometry allows the non invasive determination of arterial pulse pressure in both central and peripheral arteries. However it cannot be applied to all subjects (such as obese) and at all arterial sites. In contrast, B-mode echo-graphic derived arterial diameter waveforms can be obtained at more arterial sites and also in a majority of obese subjects. The aim of this study was to investigate the accuracy of the pulse pressure assessed by calibration of echographic arterial diameter waveforms. The left common carotid artery of 49 normotensive subjects (NT) and 45 hypertensive (HT) patients were measured non invasively by using tonometry and automatic analysis of B-mode echographic images, to obtain instantaneous pressure (P) and diameter (D) signals. Calibration of carotid D and P was assessed from tonometer brachial artery waves and sphygmomanometer, assuming mean minus diastolic pressure constant throughout the arterial tree. Pulse pressure from calibrated diameter waves was 4$\pm$2 mmHg (NT vs. HT not significant) lower than pulse pressure from tonometer calibrated pressure waves (used as reference method), with a correlation coefficient of r=0.99 ($p<0.05$). In conclusion, pulse pressure obtained from alternatively calibrated B-mode derived arterial diameter waveforms demonstrates good accuracy within the acceptability limits of the AAMI criteria.

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LONG - TERM EVOLUTION OF R WAVE AMPLITUDE IN PATIENTS WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS

MD Di Toro Dario[2], **RCT Lopez Carlos**[1], MD Hadid Claudio[3], MD Vidal Luis[4], MD Labadet Carlos[5]. [1]*Hospital Argerich* [2]*Hospital Argerich* [3]*Hospital Argerich* [4]*Hospital Argerich* [5]*Hospital Argerich*

Background: The R wave amplitude evolution over the time has not been assessed in patients with Implantable Cardioverter Defibrillators (ICDs), and the data about the R wave behavior is controversial. **Objective :** To assess, in a prospective way, the evolution of R wave amplitude during an 18 month- follow up in patients with ICDs. **Method:** R wave amplitude was measured at implant time with an external analyzer and every two months by telemetry for an 18 month-follow up. All patient received an integrated catheter. We compared the change percentage of the R wave amplitude with respect to the basal amplitude, and we fitted a linear model with both change percentage and time. Finally, we compared the median of basal R wave amplitude with the final value of the follow up. **Result** Forty patients were prospectively included, 77. 5 % were men; the mean age was 60.7 years old. The most prevalent etiology were coronary artery disease and Chagas' disease 37.5 % each.The mean of Basal R wave was 8.4 $\pm$ 3.1 mv. and at 18 months it was 13.9 $\pm$ 4.9 mv (p value= $<$0,001) There was a correlation between the time and the percentages of increase of R wave amplitude (coefficient of SPEARMAN was 0.97). After adjustment, the linear model was statistically significant ($R2=0.62$ $P<=0,001$). **Conclusion :** The behavior of the R wave amplitude, in these ICDs patients, showed a linear increase over the time. This linear relation was seen between implant time and the 18 month- follow up.

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STUDY OF THE DEGREE OF KNOWLEDGE THAT THE CARDIOLOGISTS IN THE CITY OF SÃO PAULO BRAZIL HAVE ABOUT AN ENTITY WITH LOW PREVALENCE ASSOCIATED TO SUDDEN CARDIAC DEATH: BRUGADA SYNDROME

AR Perez Riera[1], C Ferreira[2], C Ferreira Filho[3], E Schapachnik[4], S Dubner[5], AH Uchida[6], L Zhang[7]. [1]*ABC Faculty of Medicine (FMABC), Foundation of ABC (FUABC) - Santo André, Brazil* [2]*ABC Faculty of Medicine (FMABC), Foundation of ABC (FUABC) - Santo André, Brazil* [3]*ABC Faculty of Medicine (FMABC), Foundation of ABC (FUABC) - Santo André, Brazil* [4]*Dr. Cosme Argerich Hospital - Buenos Aires, Argentina* [5]*Clínica and Maternidad Suizo Argentina - Buenos Aires, Argentina* [6]*Heart Institute of the University of São Paulo Medical School - São Paulo, Brazil* [7]*LDS Hospital, University of Utah, Salt Lake City, Utah, USA*

Background: Patients with Brugada syndrome (BrS) are susceptible to ventricular fibrillation and sudden cardiac death (SCD). The clinical diagnosis is not possible if the cardiologist doesn't know the classical ECG patterns largely based on the 12-lead ECG changes. However, the BrS ECG pattern is often mis-identified because responsible don't have the minimal information about these ECG patterns. **Objective:** Assess the degree of knowledge that cardiologists from the city of São Paulo, Brazil, have regarding a low-prevalent entity, associated to high rate of sudden death: Brugada syndrome. **Methods:** 244 cardiologists were interviewed: 61.1% were males, the average age being 44.32$\pm$10.83 years old, who underwent an instrument divided into two: in the first part, we recorded gender, age and data related to academic/professional profile. The second -answered only by the professionals that manifested having heard of the

syndrome - evaluated the knowledge on the entity, without a chance to consult. We used uni and multivariate analysis on the mean percentage of hits and misses and the influence of the academic/professional profile on their performance. **Results:** The percentage of hits was 45.7% a 98.8% of the interviewed professionals manifested having some knowledge on the entity. Those we made or are making a residency in cardiology were right a 30% more than those without residency ($p<0.001$). Those with a post-degree were right in average a 20% more than those without a post-degree ($p<0.001$). Those with a specialist degree were right in average a 13% more than those without the degree ($p=0.04$). When the physicians had a link to the teaching institution, the average percentage of hits was 14% greater ($p<0.001$) and if linked to the Brazilian Society of Cardiac Arrhythmias (SOBRAC), the average increase of hits was 10% ($p=0.004$). **Conclusion:** The residency in cardiology was the factor of greater significance in the percentage of hits. Other significant factors, however less important, were the link of the interviewed person to the teaching institution, the SOBRAC, and having a specialist degree.

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"SHARP-SUVED"… Proved Integrated Management with Indian Systems of medicine for CAD (Coronary Artery Disease)

V. Marathe[1–2], S Vaidya[1–2]. [1]*Sharp Health Care, Pune* [2]*Institute of Integrative Medicine, Pune*

Paper Abstract: By : Dr Vinod Marathe, MBBS, MD, DMRD, PhD, FIIM, DSc Co authors: Dr Sujata Vaidya, BSc, MBA, PhD, Dip – Aura Studies Indian Systems of Medicine includes the system of Ayurveda and the principles of Lifestyle management (Dinchariya), Dietary management (aahar shashtra), physical exercise (Yog, Pranayama) stress management (through Dhayan – meditation and Samskara or Moral discipline) SHARP-(Sanjeevan Heart Attack Rehabilitation Program) is an integrative and innovative program, scientifically proven to be a fast, effective treatment and rehabilitation for Coronary artery disease. Atherosceleroris does not affect isolated vessels and organ. The holistic approach of Vedic Medicine has been encompassed in SHARP to include a protocol extending between 12 to 18 weeks. SHARP- Suved includes Ayurvedic medication Capsule "Suved", specific dietary guidelines, yog & pranayama; physical exercises for cardio-muscular strengthening that are customized to the patient's needs, capability and rehabilitation ensuring functional stability. Stress is a major trigger & is dealt with counseling, Meditative management. "SHARP-Suved" protocol treatment have shown documented and measurable improvements in 1. Cardiac function like EF, SV, Diastolic function, ECG 2. Soft thrombus dissolving action 3. Improvement & Development of Collateral circulation 4. Balanced levels of oxidants, free radicals, Lipid profile Stress Thallium myocardial Scan evaluation has demonstrated improvements in § Ejection fraction § Stroke volume § LV dysfunction correction § Stress tolerance § Few cases have shown total reversal of ischemia & ECG reversals Patients opting for the protocol have shown visible signs of improvement in all parameters of Health and Well being. Improved stamina, self dependency, mental disposition, enthusiasm have been reported within 4 weeks for all patients. The SHARP protocol design has included those health parameters that consider the root and triggers of futuristic heart problems. This has allowed the protocol to be useful to a larger segment of persons. The SHARP-SUVED Program is designed for A) Cardiac Rehabilitation: · Post surgery (Bypass, Angio, Stent) for secondary prevention · Post Heart Attack for conservative management: to improve collateral circulation; cardio vascular strength; vascular endothelial function improvement, dissolving of soft thrombus; to attain early functional stability · Primary prevention of CAD (MI) in diabetes, hypertension and high risk patients. B) Symptomatic relief: · In complications of conventional medicine intolerance; diabetes; BP; · Aged patients where other modalities of treatment are not possible: C) Preventive: · In high-risk persons with family history of diabetes, hypertension and high stress life styles · Women above the menopause age with poor life style management, overweight and sedentary lifestyles. Our aim -Every patient has a holistic, Integrated SHARP-SUVED solution that is affordable, acceptable, available, and accessible and within his/ her reach.

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Right ventricular mechanic analysis and pulmonary distensibility during the ergo-metric effort

J. Tripolone[1], G Santiago[2], C Rollan[3]. [1]*UNIVERSIDAD CATOLICA DE CUYO* [2]*UNIVERSIDAD CATOLICA DE CUYO* [3]*UNIVERSIDAD CATOLICA DE CUYO*

The response of the pulmonary vasculature to the effort is an increase of the systolic volume with a minimal increase of the pressure. The purpose of the following research was to observe if the patients without pulmonary hypertension but with risk factors of pulmonary hypertension have any different hemodynamic pattern. **Material and Method:** We recruited two groups of patient. The first group without risk factors to pulmonary hypertension, 22 patients. The second one 39 patients with pulmonary hypertension risk factors (left ventricle dysfunction, tobacco, COPD, Lupus, systemic Sclerosis, pneumoconioses, chronic embolism, etc.). We studied both rest and effort patient state. 1- VEAT (descending velocity of the tricuspid ring plane in the first systolic third using m-mode in cm/s. Normal values $>$ 9cm/s). 2- Vascular Pulmonary Distensibility (DPI) [ml/mmHg] = Systolic pulmonary flow / PAPm = (DAP/2) x3.14xVTI Pulmonary jet/PAPm; PAPm=79-(Pulmonary Jet Acceleration Time) x0.45, Normal Values $>$ 2. 3- Right Ventricle Acceleration [cm/s2] = (VEAT effort – VEAT bas)/[(1/Fc effort -1/Fc bas) x 60] [cm/s2]; where Fc effort means Cardiac Frequency in Effort and Fc bas is Basal Cardiac Frequency. 4- Left Ventricle's Ejection Fraction (EF). Right Ventricle Acceleration, Pulmonary Distensibility and VEAT are index developed by our research group. The normal values are set in our laboratory. Statistics: Student Test, $p<0.05$. **Result:** We found significant difference between G1 and G2 on: Basal Pulmonary Distensibility ($p=0.0003$); Pulmonary Distensibility at Effort ($p=0.00007$); Delta Pulmonary Distensibility ($p=0.00003$), Acceleration ($p=0.024$); Basal VEAT ($p=0.018$); Effort VEAT ($p=0.00028$). We did not found significant difference at Delta FEY. **Conclusions:** 1- We observed significant difference at the following studied left ventricle function parameters: VEAT, Pulmonary Distensibility, Delta of Pulmonary Distensibility and Left Ventricle Acceleration. 2- No G1 patient showed smaller VEAT than 9.5 cm/s at effort, versus a 32% at G2 that showed it. 3- No G1 patient showed Pulmonary Distensibility smaller than 2 at effort, versus a 54% of patient of the G2 that showed it. 4- The First Group showed a neutral or negative Delta of Pulmonary Distensibility in a 10% of the patient, in contrast with the Second Group which showed it in a 43% of the patients. 5- The 31% of the G2's patients showed a negative or neutral acceleration versus a 0% at the first group. 6- The demonstrated changes makes the later study of these parameters essential to establish their importance when foretelling, and probably, to define a new Group of Pulmonary Patients, the "PRE-Hypertension" one. 7- The measured parameters are easy to calculate even when the tricuspid and pulmonary insufficiency is absent.

ECO Parameters	G1	G2
Left Ventricle Acceleration	15	5.9
Delta of Pulmonary Distensibility	3.54	0.166

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New Left Ventricular Function Index. Miocardic acceleration concept

J. Tripolone[1], G Santiago[2], M Salguero[3]. [1]*UNIVERSIDAD cATOLICA DE CUYO* [2]*UNIVERSIDAD cATOLICA DE CUYO* [3]*UNIVERSIDAD cATOLICA DE CUYO*

JACC (2005) demonstrated the importance of the ventricular acceleration (Ac) as a contractile ventricular function, made with change of the dp/dt in two states(basal and stress). In previous studies we demonstrated the correlation between the mitral annular velocity (VEAM) and the dp/dt of the mitral regurgitant jet. In this research we have researched the change in VEAM at two points respect to the time: Ac (as a left ventricular function parameter), and if his comparison with the ventricular elastance brings additional information. **Material and method:** We studied 186 patients, divided in 3 groups: G1, 20 patients, normal, G2: 119 patients with risk factors (hypertension, tobacco, diabetes, lipids, etc) and G3: 47 patients with ischemic cardiopathy with or without myocardial infarct. We made ergo-metric eco-stress, evaluating: 1- Left Ventricle's Ejection Fraction (EF). 2- VEAM (Descending Velocity of the Mitral ring plane at the first third of the systole, done by M-Mode; Normal Values $>$ 9 cm/s. Basal and effort). 3- Acceleration [cm/s2] = (VEAM efford – VEAM bas)/[(1/Fc efford -1/Fc bas) x 60] [cm/s2]; where Fc efford means Cardiac Frequency in Effort and Fc bas is Basal Cardiac Frequency. 4- Ventricular Elastance (ELVI), calculated at 2 points, basal and effort peak. ELVI = PFSVI / IVFSVI; PFSVI=(PASx2+PAD)/3, IVFS (Indexed VFS to the corporal surface). Where PFSVI means Left Ventricle End-of-systole Pressure, IVFSVI is Left Ventricle End-of-systole volume index; PAS is Systolic Arterial Pressure, PAD; Diastolic Arterial Pressure and IVFS mean End-of-Systole Volume Index. The parameters were measured in both basal and effort states and taking account of the magnitude of change (Delta ELVI). Statistic Analysis: Student Test ($p<0.05$). **Result:** The comparison of acceleration parameter between the G3 and G2 showed a significant difference ($p=0.002$). The same happened with G3 and G1 ($p=0.02$). Basal Delta ELVI and Effort Delta ELVI between Groups 3 and 2 also showed significant difference ($p=0.000003$), and Basal Delta ELVI and Effort in the comparison of G3 versus G1 ($p=0.004$). G2 with G1 show a difference but not as significant as the other cases ($p=0.19$). **Conclusion:** 1- We observed significant difference of Acceleration and Delta ELVI between G1–2 against G3. 2- All the patient had EF $>$ 45%. 3- A 0% of patients of G1, 2,5% at G2 and 26% of G3 had neutral or negative acceleration. 4- A 0% on G1, 0% on G2 and 26% on G3 showed a negative or neutral Delta ELVI. 5- VEAM, Acceleration and delta ELVI may adding information to the classic parameters. 6- By the decrypted method, we can use acceleration parameter and the mitral regurgitant jet is not needed. Acceleration is useful to evaluate the contractile reserve.

Parameters	G1	G2	G3
Acceleration	16	10.5	3.3
Delta ELVI	10.6	5.35	0.99

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Asymptomatic Paroxistic Atrial Fibrillation."The importance of being silent"

J. Gant Lopez[1], F. Meiller[1], F. Deketele[1], A. Garcia Aguirre[1], A. Morales Lezica[1], M. Passauer[1], M. Cabo Fustaret[1], G. Maid[1], C. Rivas[1]. [1]*Hospital Aleman, Buenos Aires, Argentina*

Introduction: Atrial fibrillation may be asymptomatic, and be discovered as a chance finding during a health checkup. There are not many studies about the significance, prognostic value and characteristic of this subject. **Methods:** We examined 7137 Holter recordings and found 91 patients (pts) with asymptomatic paroxistic atrial fibrillation (APAF) who were selected and followed during 41± 17 months. Clinical characteristics, comorbidities, medical treatment, mayor events and appearance of recurrent atrial fibrillation(AF) or permanent form were analyzed. **Results** The mean age of this population was 73 +/- 11 years, 51,6% male, Pacemaker was implanted in 17 pts (15.5%)and 13 % had thyroid dysfunction. The 53,8 % of patients received antiarrhythmic drugs, 35.8 % Beta Blockers, 21.% digoxin, 50% antiplatelet drugs and 36% oral anticoagulation. The electrocardiographic (ECG) baseline characteristics of APAF were: 3, 5 mean episodes / patient, mean duration time 87 minutes, and 49 pts (53%) had heart rate below 100 beats/ minute. A new episode of atrial fibrillation or change to a permanent form occurred in 57 pts (62,7%) At end of follow up 34 pts (37,4%) had sinus rhythm, 37 pts (40,7%) recurrent atrial fibrillation and 20 pts (22%) permanent atrial fibrillation. The principal events rates were: stroke: 16 pts (17,6%), hemorrhage: 7 pts (7,6%), clinical heart failure 14 pts (15%), hospitalization 55 pts (61%), total mortality 12 pts (13%). With antiarrhythmic treatment there was more pts in sinus rhythm than in permanent AF: 43 pts (60,6%) vs 28 pts (39,4%) ($p=0.01$). All deaths were in pts with recurrent or permanent AF : 12 pts (62,7%) ($p=0.01$) Echocardiographic parameters showed: Abnormal images in 48% and Left Atrial size was greater than 45 mm in 30 pts (33%). Left atrial size greater than 45 mm was associated with unstable sinus rhythm and more permanent and recurrent forms: 26,7% and 53,3% vs 20 % sinus rhythm ($p<0.05$) **Conclusions:** In selected patients referred to ECG Holter screening the incidence of APAF was as low as 1.3 %. This population was

typically older and had some significant rate of atrioventricular conduction disorder or sick sinus node diseases that conducted to Pacemaker implantation. During follow up a significant number of pts had recurrent or permanent AF forms that suggested some proarrhythmic silent status. The association with many events affects the quality of life of these pts and APAF may be considered as a risk marker of future new AF episodes. The absence of symptoms may delay the time to treatment with a worse outcome.

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Evaluation of Coronary Arterial Illness Risk Factors in Amazonians Inhabitants of the Mutucal Island, City of Curuá-Pará.

L. Freire[1], R. Freire[2], B. Faillace[3], M. Palmeira[4], M. Lemes[5], I. Faillace[6], H. Azevedo[7]. *[1]UNIVERSITY STATE OF PARA [2]UNIVERSITY STATE OF PARA [3]UNIVERSITY STATE OF PARA [4]GASPAR VIANNA CLINICAL HOSPITAL [5]UNIVERSITY CENTER OF PARA [6]UNIVERSITY CENTER OF PARA [7]UNIVERSITY STATE OF PARA*

Bedding: Mutucal is an oceanic island, where the communication and transport until the City of Curuá-Pará are made only by sea. In this locality, a great Maritime Terminal will be constructed and will allow the exportation of diverse Amazonian products, particularly mineral, for America, Europe and Asia. **Objective:** Evaluation of coronary arterial illness risk factors and the relation Framingham score/Absolute risk in 10 years for cardiovascular illnesses (CVI) in the population of Mutucal-Pará. **Delineation:** transversal and population base study, with random sampling process. **Method:** had been evaluated demographic data, presence or absence of CVI risk factors, body mass index (BMI), relation waist/hip, arterial pressure (AP), lipid profile, glycemia, ECG and, based in the Framingham score was calculated the global cardiovascular risk of each individual. Statistic analysis was done, using the tests of Qui-Square and Multiple Linear Regression. **Results:** low prevalence of risk factors for CVI, except High Blood Pressure (HBP) (35%). In the analysis of Framinghan score, absolute majority presented low risk (57,61%). **Conclusions:** the high prevalence of HBP can be explained by the high consumption of salt and foods conserved with salt. Low cardiovascular risk was demonstrated, probably for the low prevalence of others risk factors for CVI in the studied population. The accompaniment, orientation and implementation of cardiovascular prevention programs will be important to prevent the increase of cardiovascular risk in this Amazonian community, during and after the construction of the Maritime Terminal.

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Presence of the Cardiovascular Risk Factors in Patients Attended in the Cardiology Clinic of the University of the State of Pará.

L. Freire[1], **R. Freire**[2], B. Faillace[3], M. Palmeira[4], I. Faillace[5], M. Lemes[6], H. Azevedo[7]. *[1]UNIVERSITY STATE OF PARA [2]UNIVERSITY STATE OF PARA [3]UNIVERSITY STATE OF PARA [4]GASPAR VIANNA CLINICAL HOSPITAL [5]UNIVERSITY CENTER OF PARA [6]UNIVERSITY CENTER OF PARA [7]UNIVERSITY STATE OF PARA*

The cardiovascular illness (CVI) is the first cause of death in the occidental societies. In Brazil, the cardiovascular illnesses represent the most important cause of death in the country, with more than 300,000 deaths each year. Therefore, the study of the risk factors and its prevalence in populations is important to the generation of data for the national guidelines institution and its evaluation, allowing the attendance quality improvement to the different population groups. Thus, the present work objective is to evaluate the existence of cardiovascular risk factors in patients attended in the Cardiology Clinic of USPA. A retrospective, transversal and of coorte study was done with the sample of 3150 standardized handbooks of patients of the Cardiology Laboratory of USPA. The research period was from July of 2006 to June of 2007. The data had been collected in proper research protocol and made descriptive statistics analysis. It was evidenced that the majority population study was female, with 64,35%; in the age from 41 to 70 years it was found the biggest percentages of risk factors. The most prevalent risk factors had been the excess of weight in 51,18% of the patients; the presence of stress in 68,35% of these; e sedentarism in 60,03%. And, when associating the different risk factors, it was evidenced that 56.32% had two or more risk factors. In the present research, the most prevalent risk factors had been those controllable and modifiable ones, in order to bring greater longevity as well as better quality of life. When the data presented in this study is analyzed, it is evidenced that great work still must be done, in intention to prevent the cardiovascular illnesses. Based in this, it is suggested accomplishment of other researchs about the population habits related to the risks of cardiovascular illnesses, including a population sample that represents the Parα state or the North region.

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RISK FACTORS FOR CORONARY EVENTS AND BASELINE DEMOGRAPHICS IN JAPANESE MEN.

J. Sasaki[1], K Fukuyo[1], K Shimomura[1]. *[1]Graduate School of Public Health Medicine,International University of Health and Welfare*

Objectives: Since, it was still uncertain what risk factors were important for Japanese, whose coronary artery disease morbidity and mortality are lower than western country, we examined the clinical risk factors for coronary events and baseline demographics with and without coronary events in Japanese. **Methods:** The Kyushu Lipid intervention Study (KLIS) recruited 4185 men aged 45–74 years with serum total cholesterol of 220 mg/dl or greater participating from Kyushu, a rural area of Japan. **Results:** There were 118 coronary events (acute myocardial infarction, coronary angioplasty, cardiac death) in a 5-year follow-up period. @The Cox proportional hazards model was used to calculate relative risk. LDL cholesterol and diabetes mellitus were significant risk factors for coronary events in Japanese men as well as western countries population. Baseline demographics showed that LDL cholesterol level was higher and HDL cholesterol level was lower in subjects with coronary events compared without coronary events. Incidence of angina pectoris, diabetes mellitus and hypertension were higher in subjects with coronary events compared without coronary events. **Conclusion:** High level of LDL cholesterol, low level of HDL cholesterol, diabetes mellitus and hypertension seemed to be a risk factor of coronary events for Japanese men with hypercholesterolemia.

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Cardioprotective Effects of Nigella Sativa on Cyclosporine A-induced Cardiotoxicity in Rats

Y. Selcoki[1], E. Uz[1], B. Uz[1], R. Bayrak[1], A. Kaya[1], F.H. Turgut[1], A. Karanfýl[1], S. Sahýn[2], N. Baybek[1], A. Akcay[1]. *[1]Fatih University,School of Medicine [2]Gaziosmanpasa University,School of Medicine*

Aim: Cyclosporine A (CsA) is a well-known immunosuppressor agent universally used in allotransplantation. However, it has been demonstrated that this drug produces side effects in several organs, particularly in the kidney and in the heart. The aim of this study was to evaluate the effects of nigella sativa oil in the antioxidant enzyme status and myocardium of CsA treated rats. **Material and methods:** This study included 24 male Wistar albino young healthy rats (8–12 weeks) weighing 150–200 g. The control group received sunflower oil (21 days, 2 ml/kg/day, per oral) without any treatment. The second group received only nigella sativa (21 days, 2 ml/kg, per oral) (NS group). The animals in the third group received only CsA (21 days, 25 mg/kg, per oral) (CsA group). The animals in the fourth group were treated with CsA (21 days, 25 mg/kg, peroral) and starting one day before CsA administration were treated with nigella sativa (21 days, 2 ml/kg, per oral) (CsA + NS group). **Results:** The superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GSH-Px) activities in the heart tissues were significantly reduced in CsA group compared with control values. Nigella sativa treatment caused an increase in the activities of SOD, CAT and GSH-Px compared with control group. The malondialdehyde (MDA), nitric oxide (NO) and protein carbonyl (PC) levels were increased in the CsA treated group in comparison with the control and NS groups. Co-administration of NS and CsA abrogated the CsA-induced MDA, NO and PC increase compared with the CsA group. **Conclusion:** The results of our study showed that pretreatment with nigella sativa reduced the subsequent CsA injury in rat heart, demonstrated by normalized cardiac histopathology, decrease in lipid peroxidation, improvement in antioxidant enzyme status and cellular protein oxidation. The data suggest that nigella sativa might be applicable as a protective agent for cardiotoxicity associated with CsA.

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The Influence of the Beta-Adrenergic Agonists and Antagonists on T-wave Alternans and late potential in Patients with Ventricular Tachyarrhythmia

N. Komiya[1], S. Fukae[1], S. Seto[1]. *[1]Department of Cardiology, Nagasaki University Hospital,Nagasaki,JAPAN*

The autonomic nervous system is an important determinant of arrhythmia vulnerability in patients with organic heart disease. Beta-blockers reduce total mortality rates and sudden cardiac death in those patients. Microvolt-level TWA analysis and late potential have been subsequently noted to have correlation with ventricular arrhythmia, and used to identify high-risk patients with ischemic and non-ischemic cardiomyopathies. We examined the correlation between TWA and late potential measurement and the sympathetic nervous system in patients with and without ventricular tachyarrhythmia. **Methods:** Thirty-five patients (28 men, 7 women; mean age, 59$\pm$15 years) with tachyarrhythmia were assigned to two groups: ventricular tachyarrhythmia (VT) group (n=15) and supraventricular tachyarrhythmia (SVT) group (n=20). Alternans voltage in lead vector magnitude (eVM) was measured at baseline and after propranolol infusion on atrial pacing (90, 110 bpm). In a subset of 18 patients (10 with VT and 8 with SVT), the eVM was measured, under isoproterenol infusion prior to propranolol infusion. The filtered QRS duration and the root mean suquare voltage of the terminal 40ms of the filtered QRS (RMS 40ms) obtained by signal averaged electrocardiogram were measured on sinus rhythm at baseline and after propranolol infusion. **Results:** After propranolol infusion, eVM of both the VT and the SVT groups decreased significantly compared to baseline. The changes in absolute value a of eVM at 110 bpm after propranolol infusion were greater in the VT group than in the SVT group (-1.3$\pm$0.8μV versus -0.5$\pm$0.8μV, $P<0.05$). The eVM values of both the VT and the SVT groups increased after isoproterenol infusion compared to the baseline value. The changes in absolute value and percentile of eVM after isoproterenol infusion were smaller in the VT group than in the SVT group (2.0$\pm$1.8μV versus 3.9$\pm$3.5μV, $P<0.05$; 21$\pm$18% versus 48$\pm$36%, $P<0.05$). There are no significant difference in fQRS duration and RMS 40ms in both groups between baseline and after propranolol infusion. **Conclusions:** The sympathetic nervous system has an influence over microvolt-level TWA but not late potentials. Administration of beta-adrenergic antagonist caused a significant decrease in TWA, particularly in the VT group. This may partially explain the mechanism by which beta-adrenergic antagonists inhibit ventricular tachyarrhythmias.

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Effect of Carvedilol and Bisoprolol on parameters of quality of life in patients with chronic heart failure

U. Kamilova[1], S. Shukurjanova[1], SH. Jurayeva[1], R. Rahmonov[1], A. Kevorkov[1]. *[1]TASHKENT MEDICAL ACADEMY, UZBEKISTAN*

Purpose: to study an effect of 6 months therapy with Carvedilol and Bisoprolol on parameters of quality of life (QL) in patients with chronic heart failure (CHF) of the I-III FC. **Materials and methods:** 60 men aged from 40–60 have been examined. The 1st group formed 33 patients obtaining Bisoprolol against a background of basic therapy. 27 patients obtaining Carvedilol against a background of basic therapy formed the 2nd group. Evaluation of quality of life (QL) was carried out initially and in 6 months of therapy by means of Minnesota Questionnaire and

Questionnaire DASI (The Duke Activity Status Index), by which functional potentialities of a patient were estimated. **Results of investigation:** Analysis of initial indices revealed that QL in patients depended upon functional class of CHF. A sum index of QL in patients with I FC in the 1st and 2nd groups accounted for 23,03±1,3 and 24,78±1,8 marks, in patients with II FC - 28,7±1,3 and 29,3±3. A sum index of QL was increasing with the growth of FC of CHF. A reliable decrease by 54 marks noted to be against a complex therapy of CHF with Bisoprolol, with III FC of CHF - 35,1±2,21 and 32,8 ±4,32 marks of a sum index of QL in patients with CHF of I FC - 21,3% ($p<0,01$) in 3 month of treatment in a group of Carvedilol was fixed a reliable reduction of the given index by 29,8($p<0.001$) as compared with initial indices. In 3 months in patients of the 1st group with II FC a sum index of QL was decreasing by 23,6% ($p<0.001$), and in patients of the 2nd group – by 34,7% ($p<0.001$) as compared with an initial one. 3 months treatment with Bisoprolol in patients with III FC was accompanied by decrease in an index of QL by 15,8% ($p<0.001$), with Carvedilol - by 27,8% ($p<0.001$) from an initial level. A sum index of QL in patients I FC of CHF in the I and II groups was increasing in 1,3 and 1,5 times. In patients of the I and II groups with II FC the given index was decreasing in 1,5 and 2,2 times with III FC a sum index of QL was decreasing in 1,2 and 2,1 times. Reducing an expression of CHF symptoms was accompanied by a reliable increase in an activity index by results of DASI Questionnaire in patients in both groups. **Conclusion:** Thus, treatment of patients with CHF with Bisoprolol and Carvedilol contributed to perfection of indices of QL of patients, accompanied by a reliable decrease in a sum index of QL and an increase in activity index by results of DASI Questionnaiure in both groups, but it was markedly substantial in a group with Carvedilol.

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EFFECT OF BISOPROLOL AND CARVEDILOL ON PARAMETERS OF LEFT VENTRICLE REMODELLING IN PATIENTS WITH POSTINFARCTION CARDIOSCLEROSIS

Z. Shoalimova[1], **U. Kamilova[1]**, SH. Jurayeva[1], A. Kevorkov[1], T. Aliyeva[1]. *[1]TASHKENT MEDICAL ACADEMY, UZBEKISTAN*

Purpose: of the given study was investigation of effect of Bisoprolol and Carvedilol on structural-geometric parameters of myocardium of the left ventricle (LV) in patients with postinfarction cardiosclerosis (PICS). **Material and methods of study:** 54 men aged from 40 to 68 with PICS have been examined by us. II FC of chronic heart failure (CHF) under NYHA was diagnosed in 29 men and III FC CHF – in 25 men. All the patients were divided into 2 groups: 26 patients formed the 1st group, they obtained during 6 months – Bisoprolol at a dose 5–10 mg; 2nd group formed 28 patients which received Carvedilol at a dose 25–50 mg against a background of basic therapy. Geometric, structural and hemodynamic characteristics of myocardium of the left ventricle were estimated by the findings of echocardiography (EchoCG). EchoCG was carried out on an apparatus Toshiba SSH-YO (60)A (Japan) by transthoracal method in lie position and on the left side by a method of EchoCG in M- and B-regimes in accordance with recommendations of the American Echocardiography Association (ASE). **Results of study:** An expressed structural rebuilding of LV with a reliable increase of transvesical sizes and volumes of LV, sizes of the left atrium (LA), an increase in systolic myocardial stress (MS), characterizing intraventricular loading on LV walls was noted in patients with II and III FC CHF. That decrease was accompanied by a pronounced reduction of EF as main index of systolic function of LV. In the 1st group of study indices of EF in patients with CHF II and III FC accounted for 45,4±1,58 and 35,73±2,24% respectively, after 6 months treatment EF was 50,9±1,79 and 42,82±2,52% respectively. In the 2nd group indices of EF in patients with CHF II and III FC accounted for 45,7±0,949 and 36,31±0,1,65% respectively, and after 6 months treatment – 53,2±1,48 and 45,69±1,49% respectively, that evidenced a reliable growth of EF in the 1st and 2nd groups in prolonged therapy of CHF ($p\leq0,02$ and $p\leq0,001$ respectively). End diastolic volume (EDV) and end systolic volume (ESV) were decreasing by 23,8 and 32,9% respectively in the 1st group, by 26,2 and 36,4% ($p<0,001$) in the 2nd one respectively. Improving volume indices of LV was accompanied by a reliable decrease in LA sizes, thickness of LV walls, systolic MS. An index of diastolic sphere volume in both groups was decreasing almost even by 10,4% ($p<0,005$) and 10% ($p<0,05$). **Conclusions:** Thus, prolonged therapy of CHF with Bisoprolol and Carvedilol contributed to a reliable perfection of structural-geometric parameters of heart: they reduced a grade of LV dilatation, its sizes and volume indices, increased contractability of LV myocardium, deceased an index of systolic and diastolic sphere volume.

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SUPERIORITY OF LEVOSIMENDAN OVER DOBUTAMINE IN LOW CARDIAC OUTPUT SYNDROME AFTER AORTIC VALVE REPLACEMENT

R. Levin[1], M Degrange[2], C Del Mazo[2], R Porcile[1], E Tanus[3], N Blanco[1], F Salvagio[1], L Botbol[1], V Milman[3]. *[1]Universidad Abierta Interamericana University [2]Navy Hospital [3]Frenc Hospital*

Background: The calcium sensitizer Levosimendan(LS) represents a new type of inotropic drug which was evaluated in patients(p) with acute and chronic heart failure. Its consideration in postoperative low cardiac output syndrome (LCOS) was basically limited to p underwent coronary artery bypass grafting (CABG). Its utility and safety in p with LCOS after aortic valve replacement(AVR) is less known. The objectives of this study were: to compare the use of LS versus Dobutamine in p with LCOS after AVR, considering mortality(30 days mortality), the need to add another associate inotropic or vasopressor agent, the requirement of intraaortic balloon pump(IABP), and to evaluate complications linked to its use. **Methods:** Seventy-one p with postoperative LCOS after AVR were randomized to LS(36 p), receiving a loading dose of 10 mcg/Kg followed by a continuous infusion of 0.1 mcg/Kg/min, versus Dobutamine (35 p) starting with 5 mcg/Kg/min. LCOS was defined as cardiac index>2.0 L/min/m2, a mixed venous oxygen saturation>60% and a pulmonary artery capillary pressure<18 mm Hg. Nausea, vomiting, headache, supraventricular tachyarrhythmias(SVT) and mild hypotension(responding to fluid) were considered minor complications. Ventricular tachyarrhythmias(VT), ischemia or severe hypotension(requirng vasopressors) were considered mayor ones. A P value>0.05 was significant. **Results:** Both groups were comparable in their general and surgical characteristics. The LS treated group showed reduction of postoperative mortality: 2 p(5.6%) versus 9 p(25.7%, P=0.01, OR 0.17, IC95 0.02/0.96), less requirement of a second inotropic agent: 4 p(11.1%) against 19 p (54.3%, P=0.0001) or vasopressor drugs: 4 p(11.1% versus 20 p (57.1%, P=0.00004)) and a reduced necessity of IABP: 2 p(5.6%) versus 10 p(28.6%, P=0.009). Thirteen p in the LS treated group showed side effects (4 p with SVT, 1 p with VT, 4 p with mild hypotension and 4 p with severe hypotension) against 29 in the Dobutamine treated group (1 p with ischemia, 5 with SVT, 3 p with VT and 20 with severe hypotension). **Conclusions:** In this randomized comparison to Dobutamine in patients with LCOS after AVR, Levosimendan showed reduction of mortality with lower requirement of another inotropic or vasopressor drug, decreased need of intraaortic balloon and lower incidence of side effects. Studies with a major number of p will be needed to establish the exact value of these findings.

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Long Time Prognostic Value of CK-MB Mass in Low-Risk Patients with Stable Angina Scheduled for Cardiac Surgery

KV Kjell Vikenes[1], KSA Knut S. Andersen[1], TM Tor Mellberg[2], MF Mikael Farstad[1], JEN Jan Erik Nordrehaug[1]. *[1]Haukeland University Hospital [2]Stavanger University Hospital*

Background: Long time prognostic value of elevated cardiac biomarkers in low risk patients after routine cardiac surgery is still not clear. Many previous studies have included high risk, unstable patients. The follow up time has often been relatively short with a low number of prospective blood samples. In this study, we have determined the prognostic value of high versus low CK-MB mass values after elective heart surgery. **Methods:** 230 consecutive patients were included in the final analysis. Using a cut off value of 5 times UNL, 100 patients had peak CK-MB mass values > 24 μg/L (high), 130 patients < 25 μg/L (low). Patients with high/low CK-MB were comparable regarding age and common risk factors. In the low CK-MB group, there was a preponderance of males and aortic cross clamp time was significantly shorter (43 vs 60 minutes, P< 0.001). None of the patients developed new Q-waves on ECG. Blood samples were prospectively drawn just before and at 5 time intervals after surgery up to around 60 hours. Patients with elevated CK-MB values at baseline, as well as patients suffering an acute coronary syndrome < 1 month earlier, were not included. The median follow up time was 95 months. **Results:** Mean peak value of CK-MB was 15.8 μg/L vs 46.4 μg/L in low/high CK-MB groups, respectively. Long aortic cross clamp time predicted higher peak CK-MB values. In a Kaplan-Meier plot, all cause mortality and readmission for acute coronary syndromes were more frequent in patients with high CK-MB (30.0% vs 17.9%, P=0.022). Similar figures for death alone were 83.1% vs 74.0%, P= 0.088. In a multivariate logistic regression analysis, high CK-MB and EF were the only variables independently related to worsened event-free survival. **Conclusions:** During a median of nearly 8 years of follow up after elective cardiac surgery (equalising around 2000 patient years), there was a significantly higher number of deaths and readmissions for ACS in stable, low risk patients with peak CK-MB values > 5 times UNL compared to patients with CK-MB <5 times UNL. In the CABG subgroup this was true also for target vessel revascularisation.

TABLE 1. EVENT FREE SURVIVAL AND FREEDOM OF ALL CAUSE MORTALITY IN BRACKETS (PERCENTAGES) DURING LONG TIME FOLLOW UP (MEDIAN OF 95 MONTHS)

	CK-MB <25μg/L	CK-MB >24μg/L	P-value	Mean follow up (months)
All patients (n=230)	83.1 (83.1)	70.0 (74.0)	0.022 (0.088)	84.8
Bypass (n= 174)surgery	83.8 (83.8)	73.0 (77.8)	0.099 (0.314)	86.6
Valve surgery (n=42)	73.3 (73.3)	70..4 (70.4)	0.860 (0.968)	78.3
CABG + Valve (n=14)	100.0 (100.0)	50.0 (50.0)	0.109 (0.109)	83.1

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EFFECT OF CARVEDILOL ON MYOCARDIAL PERFUSION IN PATIENTS WITH CHRONIC HEART FAILURE

U. Kamilova[1], SH. Jurayeva[1], T. Aliyeva[1], A. Kevorkov[1], B. Myasnik[2]. *[1]TASHKENT MEDICAL ACADEMY, UZBEKISTAN [2]REPUBLICIAN SCIENTIFIC CENTRE OF SURGERY, UZBEKISTAN*

Purpose: to estimate myocardial vitality in patents with chronic heart failure (CHF) with postinfarction cardiosclerosis (PICS) by a method of single photon emission computer tomography (SPECT). **Methods of study:** 28 patients aged from 40 to 60 with coronary artery disease (CAD) with PICS II-III functional class (FC) of CHF under NYHA were examined. All the patients were divided into 2 groups subject to a grade of cardiac failure; 1st group was formed from 13 patients with II FC and 2nd group – 15 patients with III FC CHF. The patients obtained Carvedilol at a dose 25–30 mg a day. All the patients were treated initially and in 6 months SPECT with radiopharmpreparation 99MTc Sestamibi at rest and with nitroglycerin test (NGT). **Results of study:** Analysis of the initial indices of myocardial SPECT in patients of the III FC CCF developed after myocardial infarction has revealed substantial injuries in myocardial perfusion with a presence of stable zones of aperfusion and hypoperfusion as compared with patients of the II FC CHF. A reliable perfection of regionar perfusion and EF noted to be after SPECT with NGT in patients of the II and III FC CHF that evidenced an availability of vital myocardium of the left ventricle (LV). EF at rest was increased by 23% in 6 months in patients with the II FC CHF, after NGT – by 24,2%. EF at rest and in dynamic of NGT was increased by 20,85 and 20,3% ($p<0,005$) in patients with the III FC CHF in dynamic of 6 months treatment with Carvedilol, indices of local perfusion of myocardial LV were increased with a reliable reduction of an index of myocardial disordered perfusion of rest and after NGT by 23,4% (p,0.05) and 45,2% ($p<0.02$) respectively, and index of aperfusion – by 35,1% ($p<0,05$) at rest as compared with an initial one. A total number of segments with aperfusion with pronounced defect of perfusion decreased as a result of 6 months therapy in patients both with

the II FC and the III FC CHF. **Conclusions:** Thus, 6 months therapy with Carvedilol based on data of SPECT improved LV functioning in CHF patients.

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The combination of amlodipine 10mg and valsartan 160mg lowers blood pressure effectively and safely in elderly hypertensive patients not controlled by combination therapy with an ace inhibitor and a calcium channel blocker

P. Trenkwalder[1], R. Schaetzl[2], E. Borbas[3], R. Handrock[4], **S. Klebs[4]**. *[1]Department of Internal Medicine, Starnberg Hospital, Starnberg, Germany [2]Grossheirath, Germany [3]Muenster, Germany [4]Clinical and Regulatory Affairs, Novartis Pharma GmbH, Nuernberg, Germany*

Objectives: Hypertension and uncontrolled blood pressure are more common in elderly than in non-elderly patients. Most hypertensive patients require combination therapy for sufficient blood pressure (BP) reductions but in fixed-dose combination (FDC) the dose range available often is limited (e.g. ramipril 5 mg/felodipine 5 mg). The FDC of amlodipine/valsartan has been approved in many countries. The study investigated whether the combination of amlodipine 10mg and valsartan 160mg (Aml 10/Val 160) is able to significantly improve the blood pressure (BP) reduction in hypertensive patients not adequately controlled by the combination of ramipril 5mg and felodipine 5mg (Ram 5/Fel 5). This subgroup analysis assessed the efficacy with regard to the age group (non-elderly, i.e. $<$ 65 years, and elderly, i.e. $\geq$ 65 years). **Design and Methods:** After wash-out, 133 patients with mean sitting systolic BP at trough (MSSBP) $\geq$160 and $<$180 mmHg entered a 5-week treatment with Ram 5/Fel 5 (phase 1, week 0–5). 105 patients whose BP was still uncontrolled at week 5 (MSSBP$\geq$ 140mmHg), entered a second 5-week treatment phase (phase 2, week 5–10) with Aml 10/Val 160. **Results:** 64% of patients in the ITT population (n=105) were non-elderly and 36% of patients were elderly. At day 1, MSSBP in the elderly and non-elderly population was 168.3$\pm$4.4mmHg and 165.7$\pm$4.2mmHg, respectively. At week, 5 MSSBP decreased to 156.3$\pm$10.9mmHg and 148.5$\pm$7.1mmHg with Ram 5/Fel 5. Subsequent treatment of patients not adequately controlled by Ram 5/Fel 5 with Aml 10/Val 160 for 5 weeks reduced MSSBP to 140.9$\pm$13.4mmHg and 133.2$\pm$11.4mmHg. Mean sitting diastolic blood pressure (MSDBP) in the elderly and non-elderly population was 94.4$\pm$6.2mmHg and 97.9$\pm$5.5mmHg, at day 1. At week 5, MSDBP decreased to 90.9$\pm$6.3mmHg and 88.3$\pm$7.0mmHg with Ram 5/Fel 5. Therapy with Aml 10/Val 160 for 5 weeks reduced MSDBP to 82.4$\pm$6.6mmHg and 82.2$\pm$7.3mmHg. The reductions achieved by Aml 10/Val 160 were statistically highly significant (p-value$<$0.0001). The overall BP reduction for MSSBP/MSDBP in elderly and non-elderly from day 1 to week 10 was 27.4$\pm$13.4mmHg/11.9$\pm$8.5mmHg and 32.5$\pm$11.2mmHg/15.7$\pm$8.9mmHg. 11% of patients in phase 1 and 9% of patients in phase 2 experienced at least one adverse event. 2 cases of edema were reported in phase 1 and no case in phase 2. **Conclusions:** Elderly as well as non-elderly hypertensive patients not controlled by Ram 5/Fel 5 achieve a significant additional BP reduction from Aml 10/Val 160 with a favorable safety and tolerability profile.

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Evaluation of Healthcare Provider Inertia in the Management of Cardiovascular Disease (CVD) Risk Factors in Primary Care Settings in Cape Town

K. Steyn[1], N Levitt, MN Hill, C Dennison, N Peer, J Fourie. *[1]Department of Medicine, University of Cape Town and Medical Research Council South Africa [2]Department of Medicine, University of Cape Town [3]School of Nursing, Johns Hopkins University [4]School of Nursing, Johns Hopkins University [5]Medical Research Council, South Africa [6]Medical Research Council, South Africa*

Background: The quality of care for reducing CVD risk factors is determined by the patients, the healthcare providers and the function of the health system. All must be optimized if patients are to benefit. This presentation reports the findings of two studies that identified health care provider related factors influencing CVD risk factor management in peri-urban South Africa. **Methods:** The first study, the HiHi Study, surveyed 403 black patients with hypertension attending public sector community health centres (CHC) and private general practitioners in three Cape Town peri-urban townships. Blood pressure was recorded. Blood lipid and glycemic patterns were determined. Pharmacy prescription records were audited. Patient interviews regarding CVD risk factors identified patient and health care provider behaviors. The second study entered 955 patients with hypertension and 454 patients with diabetes attending 18 CHC. Similar measurements and blood analyses were conducted. Audits of the patient records provided medication prescription patterns as well as recorded actions for hypertension and diabetes management. In-depth interviews were conducted with CHC health care providers. **Results:** The level of BP control ($<$140/90mmHg) in the HiHi study was 36% with 51% in the public and private sector respectively. In the CHC study 33% of hypertensive patients and 24% of diabetes patients had controlled BP (Diabetes: BP$<$ 135/85mmHg). In the diabetes patients only 24% had HbA1c below 1% of the upper limit of normal and 42% had a non-fasting blood glucose level above 11.1mmol/l. The HiHi Study showed that the better BP control in the private GP practices was influenced by better provider communication with patients about their treatment status and simpler treatment regimes. No patients received cholesterol lowering agents. The BP prescriptions were seldom altered in response to elevated BPs. The CHC study patient folder audits revealed that 98% had BP levels recorded with a mean BP of 152/90mmHg. Despite these unacceptably high BP levels 81% of patients had only 1 anti-hypertensive drug prescribed and in 11% of folders no such medication was prescribed. For the diabetes patients 99% had non-fasting glucose levels recorded with a mean level of 11.8mmol/l. Only 2.6% of patient folders had HbA1c levels recorded and 23% had no anti-glycaemic agents recorded. The management of hyperlipidaemia and smoking was seldom noted. The staff interviewed felt that they were working under increasingly difficult circumstances and expressed feelings of anger and frustration about the situation. **Conclusion:** Significant health care provider inertia and lack of resources in the primary healthcare settings in Cape Town contribute to poor levels of CVD risk factor control. This sends a powerful message to patients, families, and other healthcare providers suggesting that CVD risk factor control is unimportant.

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SHORT AND LONG-TERM OUTCOMES OF PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITHOUT KNOWN DIABETES AND ABNORMAL GLUCOSE REGULATION: CLINICAL IMPLICATIONS

J. De La Hera[1], E Hernández[1], J Vegas[1], J García-Ruiz[1], R Suarez-Arias[1], I Lozano[1], C Fernández-Cimadevilla[1], P Avanzas[1], F Alvarez[2], C Morís[1]. *[1]DEPARTMENT OF CARDIOLOGY. HOSPITAL UNIVERSITARIO CENTRAL DE ASTURIAS. OVIEDO. SPAIN [2]DEPARTMENT OF BIOCHEMISTRY. HOSPITAL UNIVERSITARIO CENTRAL DE ASTURIAS. OVIEDO. SPAIN*

Background and Objectives: There are no specific guidelines for percutaneous coronary intervention (PCI) in patients without known diabetes mellitus (DM) who present with abnormal glucose regulation (AGR). Our intend was to study the short-term (in-hospital) and long-term outcomes for these patients and determine whether those results suggest a greater need for using IIb/IIIa inhibitors and drug-eluting stents (DES). **Material and methods:** We prospectively studied 338 consecutive patients without known DM referred to PCI and an oral glucose tolerance test (OGTT) was performed 15 days after the procedure. Based on the results, patients were then classified as having either normoglycemia, impaired glucose tolerance (IGT) or unknown DM (1999 WHO criteria). AGR was defined as the presence of IGT or unknown DM. Short-term events were defined as in-hospital non-fatal MI or new PCI and long-term events (6 and 12 months) were defined as: death, non-fatal MI, new PCI and stroke. **Results:** Studied population: age 66.5 (inter-quartilian range 17), males 80%, active smokers 28.5 %, hypertension 49%, previous MI 37.3%, peripheral vascular disease 15.4%. Sample stratification following OGTT results: normoglycemic 41%, IGT 35% and unknown DM 24%. PCI indication: 76% acute coronary syndrom (ACS) and 24% stable angina. IIb/IIIa inhibitors use 37.8% and DES 39.3% (no differences between glycemic groups). Follow-up achieved: in-hospital 100%, 6 months 97%, 12 months 95%. Events in normoglycemic group, IGT and unknown DM respectively: in-hospital 1.4%, 3.4% and 6.7%. Differences between normoglycemic and unknown DM p$<$0.004. All events in hospitalized patients with unknown DM occurred in PCI for ACS, none in stable angina; events at 6 months 6.6%, 8.6% and 7.9%, p=0.82; events at 12 months 11.2%, 15% and 13.9%, p=0.65 **Conclusions:** Fifty-nine percent of patients without known DM referred to PCI presented AGR and one-fourth of them had unknown DM. Among patients with AGR only those with unknown DM had a significantly greater number of in-hospital events (MI and new PCI). There were no differences in long-term follow-up. Those findings suggest a greater need for using IIb/IIIa inhibitors in patients with unknown DM referred to PCI in the ACS setting.

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IMPACT OF UNKNOWN DIABETES DIAGNOSIS WITH ORAL GLUCOSE TOLERANCE TEST IN CORONARY PATIENTS: IDENTIFICATION OF POSSIBLE IMPROVEMENTS IN SECONDARY PREVENTION MEASURES

J. De La Hera[1], E. Hernández[1], J. Vegas[1], P. Avanzas[1], J. García-Ruiz[1], R. Suarez-Arias[1], F. Torres[1], D. Calvo[1], E. Delgado[2], C. Morís[1]. *[1]DEPARTMENT OF CARDIOLOGY. HOSPITAL UNIVERSITARIO CENTRAL DE ASTURIAS. OVIEDO. SPAIN [2]DEPARTMENT OF ENDOCRINOLOGY. HOSPITAL UNIVERSITARIO CENTRAL DE ASTURIAS. OVIEDO. SPAIN*

Background: Current European guidelines promote unknown diabetes mellitus (DM) detection using the oral glucose tolerance test (OGTT) on coronary patients without previously known diabetes (Class I recommendation, Evidence Level B). **Objectives:** To ascertain the control of cardiovascular risk factors in coronary patients diagnosed with unknown DM following the current guidelines for diabetes and cardiovascular disease. **Material and Methods:** We performed the OGTT on 338 revascularized non-diabetic patients undergoing PCI two weeks after hospital discharge (76% acute coronary syndrome and 24% stable angina). By means of clinical history, physical examination and laboratory data we determined the degree of compliance with current guidelines for newly diagnosed unknown DM patients, thus falling into the category of diabetics with coronary artery disease. **Results:** Seventy-seven patients presented with unknown DM after the OGTT (22.8%). Sample profile: Age 70.6 (interquartile range 16.1), males 80.8%, Hypertension 58.4%, dyslipemia 53.2%, active smokers 23.4%, obesity 35.1%, previous MI 40.3%, peripheral vascular disease 23.4%, LVEF 62% and multivessel coronary disease 55%. Compliance with current guidelines for unknown DM and coronary artery disease: fasting blood glucose$<$108 mg/dL, 41%; HbA1c$<$6.5%, 93.4%; systolic BP$<$130 mm Hg, 35.9%; LDL$<$70 mg/dL, 33.8%; BMI$<$25 kg/m2, 11.7%; Waist perimeter$<$94 cm in men and $<$80 cm in women, 20.5%, use of ACE inhibitors or ARBs, 44.9% and use of statins, 88.5%. **Conclusions:** Performing an OGTT on patients with coronary artery disease but without previously known DM reveals a significant number of unknown DM cases. By entering the coronary diabetic group, these patients with unknown DM will benefit from improved secondary prevention measures following current guidelines.

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ORAL GLUCOSE TOLERANCE TEST PERFORMANCE AND MULTIDISCIPLINARY TEAM APPROACH IMPROVE SECONDARY PREVENTION MEASURES IN NON-DIABETIC CORONARY PATIENTS

J. De La Hera[1], E. Hernández[1], J. Vegas[1], R Suarez-Arias[1], P Avanzas[1], J. García-Ruiz[1], I. Lozano[1], A. Carro[1], E. Delgado[2], C. Morís[1]. *[1]DEPARTMENT OF CARDIOLOGY. HOSPITAL UNIVERSITARIO CENTRAL DE ASTURIAS. OVIEDO. SPAIN [2]DEPARTMENT OF ENDOCRINOLOGY. HOSPITAL UNIVERSITARIO CENTRAL DE ASTURIAS. OVIEDO. SPAIN*

Background: Current European guidelines for diabetes mellitus (DM) and coronary artery disease advocate performing an oral glucose tolerant test (OGTT) on all coronary patients

without previously known DM to rule out abnormal glucose regulation (AGR) and they suggest some criteria for therapeutic interventions. **Objectives:** To validate a multidisciplinary team approach (cardiology, endocrinology, diabetologic nursing staff) rather than the conventional unilateral intervention commonly used to diagnose and treat AGR in revascularized coronary patients undergoing percutaneous coronary intervention. **Material and Methods:** We performed an OGTT on 338 coronary patients (76% acute coronary syndrome and 24% stable angina) without previously known DM and classified them as having either normoglycemia, impaired glucose tolerance (IGT) or unknown DM following 1999 WHO criteria. AGR was defined as the presence of IGT or unknown DM are present. The patients living in our health system area were managed by the multidisciplinary team strictly following current guidelines while other patients were managed more conventionally by their general practiciens, who also knew the OGTT results. We analysed laboratory and physical examination data and the instituted treatments at 6- and 12-month follow-ups. **Results:** After the OGTT, 198 patients (59%) presented with AGR and follow-up was achieved in 97% and 95% of patients after 6 and 12 months, respectively. Sample profile: Age 68.6, males 82%, Hypertension 50.6%, previous MI 39.4%, peripheral vascular disease 16%, LVEF 62% and multivessel coronary disease 55%. Treatment at hospital discharge in the whole sample: betablockers 74.9%, ACE inhibitors 39.1%, antiagregants 95.5%, warfarin 4.8%, statins 83.2%, calcium antagonists 26.3% and diuretics 13.7% (No significant differences between the intervention group and control). The intervention group achieved lower blood pressure readings in mm Hg (127 (interquartile range 24) vs 135 (IR 30), $p<0.001$), lower LDL in mg/dL (78.5 (IR 31) vs 88 (IR 42),$p=0.05$), greater use of ACE inhibitors (78.6% vs 37.8%, $p<0.001$) and greater use of statins (98.2% vs 82%, $p=0.003$). The analysis of coupled data for the intervention group lowering of: body weight in kg.(from 76.7 (IR 9,9) to 74.2 (IR 12), $p<0,001$), waist perimeter in cm (from 98(IR 9) to 94 (IR 9), $p<0.001$), BMI in kg/m2 (from 29.5 (IR 4) to 27.5 (IR 5), $p<0.001$), fasting blood glucose in mg/dL (from 101 (IR 14) to 93 (IR 17), $p=0.017$), HBA1c (from 4.9 (IR 1) to 4.8 (IR 0), $p=0.024$) and ultrasensitive PCR in mg/L (from 0.42 (IR 0,7) to 0.17 (IR 0,4), $p=0.029$). **Conclusions:** Performing an OGTT and employing the subsequent intervention of a multidisciplinary team for coronary patients without previously known DM improves the quality of secondary preventive measures and reduces their cardiovascular risk burden.

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Poly(ADP-ribose) Polymerase (PARP) Inhibitor HO3089 Enhanced Post Ischemic Myocardial Glucose Uptake Mostly By Activation Of AMP-activated Protein Kinase (AMPK)

E. Bognar[1], GY. N. Kiss, ZS. Sarszegi, E. Bartha, I. Solti, B. Sumegi, Z. Berente. [1]*University of Pecs, Medical School, Department of Biochemistry and Medical Chemistry, Pecs, Hungary* [3]*University of Pecs, Medical School, Heart Institute and 1st Department of Internal Medicine, Pecs, Hungary*

Background: Augmentation of glucose uptake and utilisation instead of fatty acid oxidation in post ischemic heart tissue was proposed as anti ischemic cardioprotection by numerous earlier studies. A novel PARP inhibitor, HO3089 beside its ability to preserve cardiac energetics and improve post ischemic fuctional recovery, was found to enhance glucose uptake during reperfusion. In this study, we investigated the effect of HO3089 on the post ischemic myocardial glucose uptake and the underlying signalling pathways mediating this effect. **Materials and methods:** Male Wistar rats (350–400 g) were divided into five main groups and received the following treatment: 1. normoxia; 2. ischemia-reperfusion; 3. ischemia-reperfusion + HO3089 (25 μmol); 4. ischemia-reperfusion + HO3089 + different kinase inhibitors (Akt inhibitor LY294002; or MAP kinase inhibitor PD98059; or AMPK inhibitor Compound C; 10 μmol each one); 5. ischemia-reperfusion + different kinase inhibitors (LY294002; or PD98059; or Compound C). The Langendorff perfused rat hearts underwent either a 45 minutes normoxia or a 10 minutes global ischemia followed by 30 min. of reperfusion. Cardiac glucose uptake was monitored using the glucose analogue 2-deoxy glucose (2DG). 2DG-6-phosphate accumulation, the levels of high energy phosphates (creatine-phosphate, ATP) and inorganic phosphate were measured by 31P NMR spectroscopy during the whole perfusion period. At the end of each perfusion, hearts were freeze clamped and the activation of Akt, ERK1/2 and AMPK were asessed by immunoblotting. **Results:** Global ischemia, even ten minutes of it, increased cardiac 2DG uptake that was significantly ($p<0.01$) enhanced in the presence of HO3089. Compound C was the most effective to inhibit both the ischemia and the HO3089 induced glucose uptake, while PD98059 and LY294002 slightly or did not alter it. Changes in high-energy phosphate levels showed a negative correlation to the glucose uptake. Administration of HO3089 lowered the ischemia induced Akt activation and further enhanced ERK1/2 and AMPK phosphorilation. **Conclusions:** The findings of this study demonstrate that PARP inhibitors may be able to modulate myocardial metabolism under condition of ischemia-reperfusion by enhancing glucose uptake through activation of AMPK and ERK1/2. However inhibition of AMPK and ERK1/2 could not diminish completely the ischemia induced glucose uptake, which highlights the role of other still unidentified cell signalling pathways.

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SURGERY DEATH RATE PREDICTORS IN PATIENTS WITH SEVERE AORTIC STENOSIS

L. Gerones[1], L. Godoy[2], F. Bourdin[3], J. Como Birche[4], M. D'Aglio[5], F. Bravo[6], J. Aringoli[7], R. Martinez[8], P. Flaherty[9], R. Marelli[10]. [1]*HOSPITAL SAN JUAN DE DIOS. LA PLATA. ARGENTINA.* [2]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [3]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [4]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [5]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [6]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [7]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [8]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [9]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA* [10]*SAN JUAN DE DIOS. LA PLATA. ARGENTINA*

Objectives: To determine surgery death rate predictors in patients with severe aortic valvular stenosis. Population and method: Since 1999 to 2007, 226 patients were included, 152 males (67.3%), 74 females (32.7%), aged 59.5 ± 11.7 years, with severe aortic valvular stenosis, in a previous state to surgery for aortic valvular reeplacement. Medical history, color doppler echocardiogram and color echo doppler of the neck vessels were carried out for all patients. Coronary angiographies were carried out for males of > 40 years, and females of > 45 years. Severe aortic stenosis was considered as the presence, by means of echo doppler, of peak gradient ≥ 70 mmHg, medium ≥ 50 mmHg or valvular area < 0.6 cm2 by m2 of body surface and severe internal carotid stenosis ("d 70%). During aortic valvular replacement, miocardial revascularizaton (CRM) was carried out in 69 patients (30.5%), and mitral valvular replacement in 3 patients (3.1%). Cross-sectional and observational study: The chi square test was used for the comparative studies with nominal values using the Yates corrected value. Categoric variables are expressed in percentages. In the statistical comparisons, a value of 'p' was assigned by means of the Fisher exact method, 'p' meaning "T 0.05. Univariant and multivariant analysis made with Info EPI from the OMS 5.01. **Results.**

UNIVARIANT ANALYSIS MULTIVARIANT ANALYSIS

Variable	OR	IC 95%	Chi2	p	OR	IC 95%	p
Age ≥ 65 years	2.94	1.03–8.46	5.22	0.02	2.23	0.95–7.45	0.05
Male	0.87	0.23–2.34	0.34	0.82	0.64	0.18–1.67	0.91
High blood pressure	2.00	0.70–6.00	2.07	0.15	1.39	0.56–5.44	0.22
Diabetes	1.70	0.44–6.12	0.81	0.36	1.84	0.52–6.57	0.44
Smoking habit	1.28	0.45–3.65	0.27	0.60	0.98	0.33–4.21	0.55
CRM	2.21	0.77–6.30	2.76	0.09	2.42	0.85–6.11	0.07
Ejection fraction < 40%	3.18	0.79–12.01	3.81	0.05	4.22	0.98–13.52	0.04
Peak gradient < 70 mmHg	5.31	1.80–15.68	13.11	0.00	5.88	1.92–17.21	0.00

Conclusions: Age older or equal to 65 years, left ventricular ejection fraction lower than 40% and systolic peak gradient lower than 70 mmHg were statistically significant predictors of surgery death rate in the studied population. Miocardic revascularization surgery along with valvular replacement established a tendency in both the univariant and multivariant analysis without achieving statistical significance.

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Baseline characteristics in patients with Chagas Heart Disease Implanted with a Defibrillator. Does the presence of a Ventricular Aneurysm make any difference?

C. Hadid[1], C. Lopez[1], D. Di Toro[1], L. Vidal[1], C. Labadet[1]. [1]*HOSPITAL COSME ARGERICH. BUENOS AIRES, ARGENTINA.*

Chagas' Cardiomyopathy is an arrhythmogenic disease characterized by the presence of a ventricular aneurysm and represents the underlying heart disease in many patients (pts) who receive an ICD for secondary prevention of Sudden Cardiac Death (SCD) in South America. There are few published data on ICD implantation in this kind of patients. **Objective:** To assess clinical, electrocardiographic and echocardiographic aspects in pts with Chagas heart disease implanted with a defibrillator for secondary prevention of SCD; and to focus on the prevalence and characteristics of pts who present with ventricular aneurysm. **Methods:** We retrospectively collected data of 39 consecutive pts with Chagas disease and indication for ICD implantation (ACC/AHA/NASPE Guidelines) for secondary prevention of SCD. **Results:** The median age of our population was 57 years old (intercuartile range [ICR] 47–65) and 20 pts were male. Six pts (15.4%) presented with cardiac arrest, 22 pts (56.4%) with ventricular tachycardia (VT) with syncope and the remaining 11 pts (28.2%) had VT with symptoms other than syncope. One third of pts was in heart failure functional class I, with similar proportions in class II and III. Sinus rhythm was present in 35/37 pts with a median QRS duration of 120 msec (ICR 100–175). Nineteen pts (51%) had right bundle branch block, associated with left anterior hemiblock in 14 of them. Echocardiographic evaluation showed a median ejection fraction (EF) of 36% (ICR 30–50), a mean left ventricular end-diastolic diameter (LVEDD) of 60 ± 6.75 mm and the presence of a ventricular aneurysm in 9/37 pts (24.3%). Patients with ventricular aneurysm were significantly younger, had lesser duration of the QRS complex, smaller LVEDD and greater EF (Table I). Other clinical variables such as male gender, functional class and mode of presentation were similar to those of patients without aneurysm. **Conclusion:** This study shows the profile of consecutive patients with Chagas heart disease implanted with an ICD for secondary prevention of SCD. Half of our population presented with right bundle branch block with a similar proportion of pts with an EF > 35%. In one out of four pts echocardiographic evaluation showed a ventricular aneurysm. In this subgroup of pts, who showed fewer parameters of adverse outcome, the presence of a ventricular aneurysm may have led to the development of ventricular tachyarrhythmia at an earlier stage of the disease.

TABLE I. CHARACTERISTICS OF PATIENTS ACCORDING TO THE PRESENCE OF A VENTRICULAR ANEURYSM. VARIABLES EXPRESSED AS MEDIAN (ICR).

Aneurysm	Age (yr)	QRS (msec)	EF (%)	EF > 0.35	LVEDD (mm)
Yes	47 (37–55)	90 (80–160)	38 (32–47)	67%	57 (53–61)
No	59 (53–65)	120 (100–180)	35 (30–50)	46%	62 (56–64)
p value	0.03	0.04	0.86	0.44	0.10

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PREVENTION OF RADIAL ARTERY SPASM IN CORONARY SURGERY WITH IN VITRO OVER-DILATION

D. Guastavino[1], M. Nahin[1], G. Vizcarra[1], G. Cozzarin[1], S. Budelli[1], A. Zillo[1], D.R. Grana[2], J. Milei[2]. [1]*ITCSA, BUENOS AIRES, ARGENTINA* [2]*INSTITUTO DE INVESTIGACIONES CARDIOLOGICAS (ININCA) UBA-CONICET, ARGENTINA*

Spasm and its consequences is a limitation for the use of the radial artery in coronary artery surgery. **Aim:** In vitro calibrated over-dilation of radial artery grafts was performed previous to implantation in order to prevent this complication. **Methods:** Sixteen transverse non-dilated sections of the radial artery and its corresponding dilated segments belonging to 16 patients submitted to coronary revascularization were used. Over-dilation was carried out after

clamping of the distal tip of the segments and application of a graduate distention with blood <300 mmHg during <10 seconds. Sections of radial arteries were fixed in PBS 10% formaldehyde. Tissue samples were embedded in paraffin. Three-micron sections were serially cut and stained with H&E, PAS, Massons's trichrome, elastin and immunotyped with anti-CD34 for endothelial cells. Semiquantitative analysis was performed employing a scale from 0 (normal) to 4 (heavily damaged) to assess endothelial and subendothelial damage, and subendocardial and parietal thickness. Sections were studied by an image analyzer Image-Pro Plus ver. 3 for Windows (Media Cybernetics, LP, Silver Spring, MD, USA). Parietal and luminal areas were assessed at a magnification of 4X, and medial width was performed at 10X (from external to internal lamina).**Results:** Parietal area was 79.89 ± 8.3% and 71.4 ± 12.9% in non-dilated and in dilated specimens respectively (p=0.0273; Wilcoxon matched pairs test). While luminal percentage was 20.11 ± 8.3% and 28.6 ± 12% respectively (p=0.02739. Medial thickness was 403.02 ± 84.15 mm and 313.65 ± 74.53 mm (p=0.0002; two tailed t test) for predilated and dilated specimens respectively.Semiquantitatively, endothelial damage was 1.21 ± 0.92 in the non-dilated group vs. 1.43 ± 1.12 in the dilated group (NS, test t); and parietal thickness was 1.69 ± 1.36 vs. 1.82 ± 1.17, respectively (NS, test t). At 6 months follow-up, no evidence of spasm of the aorto-radial-coronary by-pass was observed angiographycally in any patient.Conclusion: Although future prospective trials are necessary, our results suggest that over-dilation of radial artery allows a higher diameter without further damage of the vessel that would prevent spasm and its consequences.

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Time-course of regression of the protection conferred by simulated high altitude on rat myocardium. I. Response to calcium and to hypoxia/reoxygenation.

P. La Padula[1], L. Costa[1]. [1]*Institute for Cardiological Research Prof. Dr. Alberto C. Taquini, School of Medicine, University of Buenos Aires.*

During long-term exposure of rats to simulated high altitude, retardation of age-associated decline in basal mechanical activity of papillary muscle and improved post-hypoxic recovery were found (J Appl Physiol 98: 2363–9, 2005). The aim of the present study was to evaluate the involvement of calcium and the time course of regression of these and other effects of chronic hypoxia during deacclimatization. Seven-week-old rats were submitted to 5,000 m simulated altitude (53.8 kPa) in a hypopressure chamber for 5 mo whereas the same number of sibling rats remained as controls at sea level atmospheric pressure (101.3 kPa). After 5 mo of acclimatization, hypoxic rats were removed from the hypobaric chamber and kept at similar normoxic conditions as the control group. After 0.4, 2, and 5 mo, five rats of each group were studied. Hematocrit was determined in blood obtained by cutting the tip of the tail under ether anesthesia, heart was removed, and both papillary muscles were isolated from the left ventricle. Papillary muscle maximal developed tension (DT), maximal rate of rise in DT (+T), and maximal velocity of relaxation (-T) were determined under isometric conditions at 0.60, 0.84, 1.33, 1.81, and 2.75 mM Ca2+, and at the last concentration, every 10 min during a period of 60 min hypoxia and 30 min reoxygenation (H/R). **Results:** Body weight curve, significantly impaired under hypoxia, was normalized within 2 mo of normoxia. Hematocrit, increased by hypoxia (24%), declined with a half-time of 27 days and attained control values at 2 mo. Right ventricle weight, 100% increased in acclimatized rats, declined with a half-time of 3.7 mo and was still 30% higher than in controls at 5 mo. Over the whole range of Ca2+ concentration assayed, DT was higher in all groups of prehypoxic than in control animals. At maximal Ca2+, DT was 65, 58, and 40% higher than in controls at 0.4, 2, and 5 mo, respectively, whereas +T and –T followed a similar pattern. The mean percent increase of the three parameters showed a linear decline during deacclimatization with a half-time of 5.9 mo. Ca2+ concentration required for half-maximal activation was significantly lower at 0.4 mo (0.75 ± 0.07) than in controls (1.06 ± 0.04) and the other groups. After H/R, DT was 129, 107, and 71% higher in rats deacclimatized for 0.4, 2, and 5 mo, respectively, than in controls; +T and –T showed similar increases. All three parameters showed a linear decline during deacclimatization with a mean half-time of 5.3 mo. **Conclusions:** the cardioprotective effect conferred by chronic sustained hypobaric hypoxia lasts more than 5 mo after suppression of the stimulus and involves changes in Ca2+ handling. This model would provide the most persistent effect known at present on preservation of myocardial mechanical activity and improved tolerance to O2 deprivation.

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Clinical 2-year follow-up results in bifurcation lesions with sirolimus-eluting stents and bare-metal stents.

T. Ashikaga[1], S. Niki[1], H. Fujii[1], K. Ihara[1], N. Murai[1], S. Maeda[1], N. Yamawake[1], M. Nishizaki[1], M. Isobe[2]. [1]*Yokohama Minami Kyosai Hospital* [2]*Tokyo Medical and Dental University*

Background: Many studies showed that acute results of bifurcation lesions with sirolimus-eluting stent(SES) were favorable. However long-term outcomes beyond 1 year to 2 years have not well studied. We here compared long-term clinical results of bifurcation lesions between SES and bare matal stent (BMS). **Methods:** 65 patients with stenosis of bifurcation lesions were enrolled this study. 31 patients(46%) were implanted SES and the remaining patients were implanted BMS.In all SES patients,26 cases were performed with single stent, 5 cases were performed with double stents. All patients were treated with single stent in BMS group. In both groups, final kissing balloon dilatation technique were performed. **Results:** Angiographic success rate was 100% in SES group and 97.2% in BMS groups. Within 2-year follow up, the incidence of non-cardiac death was 5.6% in SES group,and 3.2% in BMS group (p=0.6).The incidense of restenosis was 3.3% in SES group and 30.5% in BMS group (p=0.003). In target lesion revascularizations was performed 3.3% in SES group and 25.0% in BMS group (p=0.012). No cardiac death and non-fatal MI was caused in both group. No acute, subacute, late and very late thromosis have not occurred in both groups. **Conclusion:** Long-term results of bifurcation lesions with sirolimus-eluting stent is feasible in clinical use. Acceptable long-term clinical results can be achieved, with no particular safety concerns about treatment of bifurcation diseases.

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Time-course of regression of the protection conferred by simulated high altitude on rat myocardium. II. Mitochondrial NOS activity and expression.

P. La Padula[1], J. Bustamante[2], A. Czerniczyniec[2], **L. Costa**[1]. [1]*Institute for Cardiological Research Prof. Dr. Alberto C. Taquini, School of Medicine, University of Buenos Aires.* [2]*Laboratory of Free Radical Biology, School of Pharmacy and Biochemistry, University of Buenos Aires*

Our laboratory has previously reported an increase in left ventricle (LV) mitochondrial nitric oxide synthase (mtNOS) activity during long-term exposure of young rats to simulated high altitude, which was associated to preservation of contractile function and improved tolerance to hypoxia/reoxygenation (H/R) (J Appl Physiol 98: 2370–75, 2005). The aim of the present study was to evaluate the behavior of LV mtNOS activity and expression during deacclimatization and endogenous NO involvement in the modulation of basal and post-hypoxic mechanical activity. Seven-week-old rats were submitted to 5,000 m simulated altitude (53.8 kPa) in a hypopressure chamber for 5 mo whereas the same number of rats remained as controls at sea level atmospheric pressure (101.3 kPa). After 5 mo of acclimatization, hypoxic rats were removed from the hypobaric chamber and kept at similar control conditions. After 0.4, 2, and 5 mo, heart was removed from five rats of each group, mitochondria were isolated from LV, and submitochondrial membranes (SMM) were prepared. Production of NO was measured spectrophotometrically by the oxyhemoglobin assay and correlated with parameters of muscle contractility determined in the same animals and described in the accompanying report. Western blot analyses were performed with antibodies for eNOS, iNOS, and nNOS. The effect of endogenous NO on basal and post-hypoxic contractility was evaluated by simultaneously studying both LV papillary muscles from 10 normoxic rats, one supplemented with the substrate L-arginine to obtain the maximal NO level and the other with the NOS inhibitor L-NNA. **Results:** Production of NO by SMM was 40, 27, and 21% increased after 0.4, 2, and 5 mo of deacclimatization, respectively. Similarly to papillary muscle contractile parameters before and after recovery from in vitro hypoxia, decline in mtNOS activity was linear with a half-time of 5.0 mo. LV mtNOS activity and papillary muscle developed tension (DT) fitted to a biphasic quadratic regression with maximal basal and post-hypoxic recovery DT at an optimal mtNOS activity of 0.66 and 0.70 nmol·min-1·mg protein-1, repectively. Maximal rates of contraction (+T) and relaxation (-T) followed a similar pattern. NOS from SMM reacted with iNOS and nNOS antibodies. The level of expression of mtNOS was higher in prehypoxic than in control rats and declined during deacclimatization, with a half-time of 5.3 mo for iNOS and 3.8 mo for nNOS. Papillary muscles incubated with L-arginine showed higher DT, +T, and –T than those incubated with L-NNA (27, 31, and 28% at maximal Ca2+, and 16, 22, and 29 % after recovery from H/R, respectively). **Conclusions:** Decline in mtNOS activity and expression during deacclimatization closely accompanied the loss of myocardial function and protection, supporting the putative role of this enzyme in the mechanism involved, which would be important for potential clinical application. Under the conditions of the present study, NO positively modulates mechanical activity of the heart and would contribute to the protection against contractile dysfunction caused by H/R.

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Self-reported leisure-time physical activity predicts long-term survival in patients with coronary heart disease

F. Apullan[1], M. Bourassa[1–3], JC. Tardif[1–3], A. Fortier[2–3], M. Gayda[3–4], A. Nigam[1–4]. [1]*Department of Medicine, Montreal Heart Institute and " [3]Université de Montréal" [5], Montreal, Quebec, H1T1C8, Canada* [6]*Biostatistics Department* [7]*Research Center* [8]*Cardiovascular Prevention Centre*

Objectives: To determine the long-term prognostic value of self-reported leisure-time physical activity in a large coronary heart disease (CHD) cohort. **Background:** Self-reported leisure-time physical activity level correlates well with both cardiovascular (CV) and non-CV mortality in individuals without CHD. The impact of leisure-time physical activity on long-term outcomes has not been well studied in individuals with preexisting CHD who are often physically limited due to symptomatology, medications, and comorbid conditions. **Methods:** The Coronary Artery Surgery Study registry represents a database of 24,958 patients with suspected or proven CHD who underwent cardiac catheterization between 1974 and 1979. Median long-term follow up was 14.7 years (Inter Quartile Range: 9.8 to 16.2). Leisure-time physical activity was evaluated using a self-administered questionnaire and categorized using a 4-level scale (sedentary, mild, moderate, strenuous). Clinical outcomes were evaluated according to physical activity level and adjusted for potential confounders. **Results:** Physical activity data was available for 14,021 individuals. Long-term all-cause and cardiovascular mortality progressively increased from most to least active individuals, with sedentary patients showing a 1.6-fold increase in mortality for both of these outcomes (Hazard ratio=1.63; 95% CI 1.34–1.97 for all-cause mortality). Similar trends were noted for men and women and in adjusted models although hazard ratios were attenuated after adjusting for age, sex, smoking, hypertension, diabetes, total cholesterol, BMI and ejection fraction. **Conclusions:** Leisure-time physical activity independently predicts long-term survival in male and female patients with chronic stable CHD. **Key words** Coronary disease, Physical Activity, Mortality

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The Time of Cardioversion In Patients With Hyperthyroidism and Atrial Fibrillation

H. Arý[1], E. Erdogan[1], V. Koca[1], T. Bozat. [1]*Bursa postgraduate hospital*

Background: Atrial fibrillation (AF) is the most common sustained arrhythmia. AF prevalence increases with hyperthyroidism, affecting up to 10% - 25% of the hyperthyroid population. The pharmacological or electrical cardioversion is controversial in patients with persistent AF and hyperthyroidism. **Purpose:**The aim of this study was to assess the effectivity and reliability of electrical cardioversion in patients with persistent AF and hyperthyroidism. **Methods:** Our study population comprised 67 patients with persistent AF; 36 patients with persistent AF and normal tyroid function test (group 1, 23 females, 13 males), and 31 patients with persistent AF and hyperthyroidism (group 2, 10 females, 21 males). Two patients excluded because of unsuccessful cardioversion (one patient in group 1 and one patient in group 2). We followed 65 patients in this study. Patients with significant valvular disease, left ventricular dysfunction, severe left atrial enlargement (> 5cm), left atrial thrombus in TEE or paroxysmal atrial fibrillation were excluded. Transthoracic echocardiography (TTE) and TEE were performed before cardioversion in all patients. Intravenous unfractional heparin started before cardioversion in all patients according to activated partial thromboplastin time (aPTT) 1,5–2 fold high. Heart rate and rhythm were determined from an electrocardiography monitor and 12 lead electrocardiography. We used a brief general anesthetic with intravenous midasolam for direct current (DC) cardioversion. DC external biphasic shocks were used at the physician's discretion until the highest energy was reached (270J) or sinus rhythm was achieved. Group 1 treated with amiodarone and group 2 treated with beta blocker and propilthiouracil. **Result:** In sixty five patients, sinus rhythm was restored immediately after cardioversion and was maintained 30 min after cardioversion. Group 1 and group 2 basaline characteristics were similar (table 1). Group 1 and group 2 were followed up to 1 month. AF recurrence was detected similar in both groups (group 1; 13 of 35 patients: %37,1; group 2; 11 of 30 patients: %36,9. P:0,96). **Conclusion:** Recurrence of AF at one month was similar in patients with hyperthyroidism and patients with normal thyroid function test. Cardioversion may be performed in patients with persistent AF and hyperthyroidism as soon as possible.

TABLE 1:BASELINE CHARACTERISTICS OF PATIENTS.

Variable	AF and normal tyroid function test (group 1; 35 paients)	AF and hyperthyroidism (group 2; 30 patients)	p value
Age (year)	61,77±10,45	65,43±6,40	NS
BSA (m^2)	1,79±0,19	1,73±0,16	NS
Duration AF (day)	192,94±146,64	182,16±125,84	NS
Heart rate (beats/min)	109,02±20,54	112,13±18,43	NS
SBP (mmHg)	138,14±17,66	140,63±17,13	NS
DBP mmHg)	85,14±10,60	86,83±9,51	NS
Diabetes mellitus	7 (%20)	5 (%16,6)	NS
Hypertension	28 (% 80)	23 (% 76,7)	NS
EF (%)	63,34±5,81	60,66±5,88	NS
Left atrium (cm)	4,38±0,32	4,41±0,37	NS
Thyroid function test			
TSH	2,46±1,42	0,028±0,024	0,000
FT3	2,57±0,56	6,22±5,29	0,000
FT4	1,16±0,13	2,25±1,18	0,000

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Long-term outcome of the off-label use of paclitaxel-eluting stents: insights from a cohort of 604 patients

X. Flores-Ríos[1], J.P. Abugattás-De Torres[1], R. Marzoa-Rivas[1], R. Campo-Pérez[1], G. Aldama-López[1], J. Salgado-Fernández[1], R. Calviño-Santos[1], J.M. Vázquez-Rodríguez[1], N. Vázquez-González[1], A. Castro-Beiras[1]. [1]*Department of Cardiology. Complexo Hospitalario Universitario Juan Canalejo. A Coruña. Spain*

Background and Objectives: Limited information is currently available about the long-term outcome of the off-label use of drug-eluting stents, which is very common in common clinical practice. We sought to assess its prognostic implications over a long-term follow-up. **Methods:** All consecutive patients who received ≥ 1 paclitaxel eluting stent (s) (PES) at our institution between June, 2003 and February, 2005 were categorised into 2 groups: on-label use and off-label or untested use, according to current definitions. For the PES, on-label use included the treatment of de novo lesions <+28 mm in length in native coronary arteries and 2.5 mm to 3.75 mm in diameter. Offlabel use was defined as stenting of a restenotic lesion, lesion in a bypass graft, lesion length > 28 mm or diameter < 2.5mm or > 3.75 mm. Patients who were placed a PES during a primary angioplasty were included in the off-label group, as they had been excluded from clinical trials. Untested use comprised the treatment of left main, ostial, bifurcation, or totally occluded lesions. We performed an exhaustive review of patients outcome after stent placement, so major clinical events were registered. A composite of death and non-fatal myocardial infarction and death, myocardial infarction and target-vessel revascularisation were the primary endpoints of our study. Individual components and late definite stent thrombosis were other endpoints. Cox Regression analysis was employed to compare the clinical outcomes between both study groups, adjusting for age, gender, diabetes, creatinine clearance, acute coronary syndrome, left ventricle ejection fraction, number of diseased vessels and withdrawal of antiplatelet therapy. **Results:** 604 successive patients (82% male, mean age 62 years) were the study population. According to study definitions, 75% of the patients (455 patients) received a PES for an off-label or untested indication. After long-term follow-up (median time of 34.3 months), off-label/untested use of PES was independently associated with a higher risk of death and myocardial infarction (HR 2.0, 95 % CI 1.1–3.6), and death, myocardial infarction and target-vessel revascularisation (HR 1.8, 95 % CI 1.1–2.9). There was also a trend to higher all-cause mortality (HR 1.9, 95 % CI 0.9–4.0) and higher cardiac mortality (HR 2.5, 95 % CI 0.9–7.2). We did not find differences in non-fatal myocardial infarction and target-vessel revascularisation risk between the study groups (HR 1.7, 95 : CI 0.8–3.7 and HR 1.4, 95% CI 0.7–2.6, respectively). Off-label/untested use was also associated with a higher incidence of late definite stent thrombosis (log-rank test p = 0.015) but no regression models could be fitted, as all the late thrombosis occurred in the off-label group. **Conclusions:** Off-label/untested indication for PES is associated with a high risk of adverse clinical outcomes after long-term follow-up.

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THE COMBINATION OF AMLODIPINE 10 MG AND VALSARTAN 160 MG LOWERS BLOOD PRESSURE EFFECTIVELY AND SAFELY IN HYPERTENSIVE PATIENTS NOT CONTROLLED BY COMBINATION THERAPY WITH AN ACE INHIBITOR AND A CALCIUM CHANNEL BLOCKER

P. Trenkwalder[1], R. Schaetzl[2], E. Borbas[3], R. Handrock[4], **S. Klebs**[4]. [1]*Department of Internal Medicine, Starnberg Hospital, Starnberg, Germany* [2]*Grossheirath, Germany* [3]*Muenster, Germany* [4]*Clinical and Regulatory Affairs, Novartis Pharma GmbH, Nuernberg, Germany*

Objectives: Most hypertensive patients require combination therapy for sufficient blood pressure (BP) reductions but in fixed-dose combination (FDC) the dose range available often is limited (e.g. ramipril 5 mg/felodipine 5 mg). The FDC of amlodipine/valsartan has been approved in many countries. The study investigated whether the combination of amlodipine 10mg and valsartan 160mg (Aml 10/Val 160) is able to significantly improve BP reduction in hypertensive patients not adequately controlled by the combination of ramipril 5mg and felodipine 5mg (Ram 5/Fel 5). **Design and Methods:** After wash-out, 133 patients with mean sitting systolic blood pressure at trough (MSSBP) ≥ 160 and < 180 mmHg entered a 5-week treatment with Ram 5/Fel 5 (phase 1, week 0–5). 105 patients whose BP was still uncontrolled at week 5 (MSSBP≥ 140mmHg), entered a second 5-week treatment phase (phase 2, week 5–10) with Aml 10/Val 160. Primary efficacy parameter was the reduction in MSSBP at trough between week 5 and week 10. **Results:** Mean age in the intention-to-treat population (n=105) was 59 years. At day 1, MSSBP was 166.7±4.5mmHg. At week 5, MSSBP decreased to 151.4±9.4mmHg with Ram 5/Fel 5. Subsequent treatment of patients not adequately controlled by Ram 5/Fel 5 with Aml 10/Val 160 for 5 weeks reduced MSSBP to 136.0±12.6mmHg. Mean sitting diastolic BP (MSDBP) was 96.6±6.0mmHg at day 1. At week 5, MSDBP decreased to 89.3±6.7mmHg with Ram 5/Fel 5. Subsequent treatment with Aml 10/Val 160 for 5 weeks reduced MSDBP to 82.3±7.0mmHg. Both reductions achieved by Aml 10/Val 160 were statistically highly significant (p-value<0.0001). The observed overall BP reduction for MSSBP/MSDBP from day 1 to week 10 was 30.7±12.2mmHg/14.3±8.9mmHg. 83% of the patients uncontrolled by Ram 5/Fel 5 achieved MSSBP levels <140mmHg or a reduction of MSSBP≥ 20mmHg after treatment with Aml 10/Val 160. There were no deaths or serious adverse events. 11% of patients in phase 1 and 9% of patients in phase 2 experienced at least one adverse event. 2 cases of edema were reported in phase 1 and no case in phase 2. **Conclusions:** Hypertensive patients not controlled by Ram 5/Fel 5 achieve a significant additional BP reduction from Aml 10/Val 160 with a favorable safety and tolerability profile.

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THE COMBINATION OF AMLODIPINE 10 MG AND VALSARTAN 160 MG LOWERS BLOOD PRESSURE EFFECTIVELY AND SAFELY IN OVERWEIGHT AND OBESE HYPERTENSIVE PATIENTS NOT CONTROLLED BY COMBINATION THERAPY WITH AN ACE INHIBITOR AND A CALCIUM CHANNEL BLOCKER

P. Trenkwalder[1], R. Schaetzl[2], E. Borbas[3], R. Handrock[4], **S. Klebs**[4]. [1]*Department of Internal Medicine, Starnberg Hospital, Starnberg, Germany* [2]*Grossheirath, Germany* [3]*Muenster, Germany* [4]*Clinical and Regulatory Affairs, Novartis Pharma GmbH, Nuernberg, Germany*

Objectives: Obesity and hypertension are co-morbid risk factors for the development of cardiovascular disease. Thus, overweight and obese patients with hypertension require an effective antihypertensive therapy. Most hypertensive patients require combination therapy for sufficient blood pressure (BP) reductions but in fixed-dose combination (FDC) the dose range available often is limited (e.g. ramipril 5 mg/felodipine 5 mg). The FDC of amlodipine/valsartan has been approved in many countries. The study investigated whether the combination of amlodipine 10mg and valsartan 160mg (Aml 10/Val 160) is able to significantly improve BP reduction in hypertensive patients not adequately controlled by the combination of ramipril 5mg and felodipine 5mg (Ram 5/Fel 5). This subgroup analysis assessed the efficacy in relation to the BMI. **Design and Methods:** After wash-out, 133 patients with mean sitting systolic BP at trough (MSSBP) ≥ 160 and < 180 mmHg entered a 5-week treatment with Ram 5/Fel 5 (phase 1, week 0–5). 105 patients whose BP was still uncontrolled at week 5 (MSSBP≥ 140mmHg), entered a second 5-week treatment phase (phase 2, week 5–10) with Aml 10/Val 160. **Results:** In the intention-to-treat population (n=105) 38% of patients were overweight (BMI ≥25 and <30) and 43% were obese (BMI ≥30). At day 1, MSSBP in the overweight and obese population was 166.8±4.7mmHg and 167.4±4.7mmHg, respectively. At week 5, MSSBP decreased to 150.7±9.0mmHg and 152.2±9.3mmHg with Ram 5/Fel 5. Subsequent treatment of patients not adequately controlled by Ram 5/Fel 5 with Aml 10/Val 160 for 5 weeks reduced MSSBP to 133.7±12.4mmHg and 137.5±11.5mmHg. Mean sitting diastolic BP (MSDBP) in the overweight and obese population was 96.5±6.8mmHg and 97.1±5.8mmHg at day 1, respectively. At week 5, MSDBP decreased to 88.8±5.6mmHg and 89.3±7.4mmHg with Ram 5/Fel 5. Subsequent treatment of patients not adequately controlled by Ram 5/Fel 5 with Aml 10/Val 160 for 5 weeks reduced MSDBP to 80.8±6.6mmHg and 83.3±7.3mmHg, respectively. The reductions achieved by Aml 10/Val 160 were statistically highly significant (p-value<0.0001). The overall BP reduction for MSSBP/MSDBP in the overweight and obese population from day 1 to week 10 was 33.1±12.6mmHg/15.6±10.2mmHg and 29.9±10.0mmHg/13.8±8.4mmHg. 11% of the overall population in phase 1 and 9% of the overall population in phase 2 experienced at least one adverse event. 2 cases of edema were reported in phase 1 and no case in phase 2. **Conclusions:** Overweight and obese patients with hypertension not controlled by Ram 5/Fel 5 achieve a significant additional BP reduction from Aml 10/Val 160 with a favorable safety and tolerability profile.

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THE COMBINATION OF AMLODIPINE 10 MG AND VALSARTAN 160 MG LOWERS BLOOD PRESSURE EFFECTIVELY AND SAFELY IN HYPERTENSIVE PATIENTS WITH METABOLIC RISK FACTORS NOT CONTROLLED BY COMBINATION THERAPY WITH AN ACE INHIBITOR AND A CALCIUM CHANNEL BLOCKER

P. Trenkwalder[1], R. Schaetzl[2], E. Borbas[3], R. Handrock[4], **S. Klebs[4]**. *[1]Department of Internal Medicine, Starnberg Hospital, Starnberg, Germany [2]Grossheirath, Germany [3]Muenster, Germany [4]Clinical and Regulatory Affairs, Novartis Pharma GmbH, Nuernberg, Germany*

Objectives: Metabolic risk factors (RF) are common in hypertensive patients. Adequate antihypertensive therapy therefore is crucial for CV risk reduction. Most hypertensive patients require combination therapy for sufficient blood pressure (BP) reductions but in fixed-dose combination (FDC) the dose range available often is limited (e.g. ramipril 5 mg/felodipine 5 mg). The FDC of amlodipine/valsartan has been approved in many countries. The study investigated whether the combination of amlodipine 10mg and valsartan 160mg (Aml 10/Val 160) is able to significantly improve BP reduction in hypertensive patients not adequately controlled by the combination of ramipril 5mg and felodipine 5mg (Ram 5/Fel 5). This subgroup analysis focused on patients with selected metabolic RF. **Design and Methods:** After wash-out, 82 patients with metabolic RF and a mean sitting systolic BP at trough (MSSBP) $\geq$ 160 and $<$ 180 mmHg entered a 5-week treatment with Ram 5/Fel 5 (phase 1, week 0–5). 65 patients whose BP was still uncontrolled at week 5 (MSSBP$\geq$ 140mmHg), entered a second 5-week treatment phase (phase 2, week 5–10) with Aml 10/Val 160. **Results:** 62% of the patients included in the trial had at least one of the selected metabolic RF. 48% presented with fasting glucose levels $\geq$ 100 mg/dl, 17% had a history of diabetes mellitus type II, 11% a LDL cholesterol $\geq$ 160 mg/dl, and 23% triglyceride levels $\geq$ 200 mg/dl. At day 1, MSSBP in the intention-to-treat population (n=65) was 166.4$\pm$4.4mmHg. At week 5, MSSBP decreased to 151.6$\pm$9.3mmHg with Ram 5/Fel 5. Subsequent treatment of patients not adequately controlled by Ram 5/Fel 5 with Aml 10/Val 160 for 5 weeks reduced MSSBP to 136.5$\pm$13.3mmHg. Mean sitting diastolic BP (MSDBP) was 95.7$\pm$6.5mmHg at day 1. At week 5, MSDBP decreased to 88.0$\pm$6.8mmHg with Ram 5/Fel 5. Treatment with Aml 10/Val 160 for 5 weeks reduced MSDBP to 81.5$\pm$6.5mmHg. The reductions achieved by Aml 10/Val 160 were statistically highly significant (p-value$<$0.0001). The overall BP reduction for MSSBP/MSDBP from day 1 to week 10 was 29.9$\pm$12.8mmHg/14.2$\pm$10.0mmHg. 11% of the overall population in phase 1 and 9% of the overall population in phase 2 experienced at least one adverse event. 2 cases of edema were reported in phase 1 and no case in phase 2. **Conclusions:** Hypertensive patients with metabolic risk factors not controlled by Ram 5/Fel 5 achieve a significant additional BP reduction from Aml 10/Val 160 with a favorable safety and tolerability profile.

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Percutaneous Coronary Interventions in Octogenarians: Immediate and Middle-Term Results

M. Centemero[1], O. Belzares[1], C.E. Soares[1], F. Maia[1], R. Staico[1], F. Feres[1], I. Pinto[1], L.A. Mattos[1], A.G.M.R. Sousa[2], J.E. Sousa[2]. *[1]Institute Dante Pazzanese of Cardiology [2]Hospital do Coracao*

Rationale: The rate of very elder patients (pts) presenting Coronary Artery Disease (CAD) is progressively increasing and Percutaneous Coronary Interventions (PCI) are a very appealing option to treat such subset of patients. They present high success rate, are less invasive and have lower-complication rates than surgery. **Goal:** To evaluate the immediate and middle term results of octogenarian pts (OP) undergoing Coronary Stent Implantation (CSI). **Results:** From 01/2000 through 12/2006, 437 OP underwent SCI. The mean age was 83 yrs, 185(42%) were females, 113 (26%) had diabetes, 133 (30%) had previous MI, and 89 (20%) previous CABG. The clinical presentation was acute coronary syndromes in 182 (42%) and 57% had multi-vessel CAD. Pts received, in average, 1.3 Stents, of which 54% were drug eluting (DES). SCI was successful in 414 Pts (95%), there were 1.6% (7pts) AMI and 0.9% (4 Pts) died. There was no emergency CABG. We obtained clinical follow-up $>$ 6 months (average 2 yrs) in 314 Pts (72%). The overall mortality rate was 8.2% (26 Pts), the AMI rate was 3.5% (11 Pts) and additional revascularization procedures were done in 24 Pts (7.6%). The Kaplan-Meier analysis showed overall survival of 90.9%, survival free from cardiac death alone 94.3% and survival free of MACE, including revascularization procedures, 83%. Definite/probable late stent thrombosis occurred in 2 pts (0.63%). **Conclusion:** SCI in OP (DES or not) is very effective and presents excellent results both during hospital stay and during follow-up and thus is a safe option to treat high-risk pts.

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TYPE 2 DIABETES AND METABOLIC SYNDROME: LIPID TRANSFER FROM AN ARTIFICIAL LIPIDIC NANOEMULSION TO HIGH DENSITY LIPOPROTEIN

V. M. Silva[1], C.G.C. Vinagre[1], M.P. Bertato[1], C.P. Oliveira[1], A.P.M. Chacra[1], R.C. Maranhão[1]. *[1]Heart Institute-University of São Paulo, Medical School Hospital (InCor-HCFMUSP), Brazil.*

Background: One of the most important functional properties of HDL is its capacity to accept lipids from plasma lipoproteins. Low HDL-C is characteristic of metabolic diseases associated with elevated atherosclerosis risk, such as Metabolic Syndrome (MetS) and type 2 diabetes (DM2). **Methods:** 15 DM2 individuals, 15 MetS individuals and 14 normolipidemic control individuals were studied. The plasma were incubated (1h) with an artificial lipidic nanoemulsion (LDE) labeled with 3H-triglycerides (3H-TG), 14C- cholesterol (14C-C), 14C-phosfolipid (14C-PL) and 3H-cholesteryl ester (3H-CE). After precipitation of VLDL, LDL and LDE, HDL containing supernatant was counted for radioactivity and lipid transfer was expressed as % of total radioactivity. **Results:** The transfer of PL and CL from LDE to HDL in DM2 and MetS groups was greater than that in control group (p$<$0.001). The TG and CE transfer showed no differences between the studied groups. **Conclusion:** Both groups DM2 and MetS showed greater transfer of lipoprotein surface lipids, phospholipids and cholesterol from LDE to HDL, which could lead to alterations in HDL composition and conformation. Our results suggest that metabolic lipid alterations precede DM2 state, as indicated by a higher lipid transfer rate from LDE to HDL in both DM2 and MetS conditions.

%	Control (n =14)	DM2 (n =15)	MetS (n =15)
^{14}C-phospholipids	20.69 $\pm$1.42	26.16$\pm$ 1.30*	25.72 $\pm$ 1.39*
^{3}H-triglycerides	6.69 $\pm$ 0.53	7.08 $\pm$ 1.59	6.96 $\pm$ 0.49
^{3}H-cholesteryl ester	5.03 $\pm$ 0.38	5.06 $\pm$ 0.59	5.06 $\pm$ 0.59
^{14}C-cholesterol	10.37 $\pm$ 0.64	11.95 $\pm$ 0.53*	12.34 $\pm$ 0.64*

*p$<$0,001 compared to control group

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ROSUVASTATIN AND AORTIC REMODELING IN NITRIC OXIDE DEFICIENT RATS

R. Neto-Ferreira[1], V.N Rocha[2], L.S.R Reis[3], A.L.R Nascimento[4], C.A Mandarim-De-Lacerda[5], J.J Carvalho[6]. *[1]UERJ [2]UERJ [3]UERJ [4]UERJ [5]UERJ [6]UERJ*

Cardiovascular diseases have been extensively associated with morphologic alterations in blood vessels. In this way, it has been observed that the diameter and the thickness of big-caliber arteries are highly altered by hypertension. As for blood vessels, the nitric oxide is able to modulate not only the vascular diameter, but also the vascular resistance through its ability to relax smooth muscle. The acute administration of substances analogous to L-arginin such as L-Name is capable of inhibit the endothelium NOS isoform and therefore the biosynthesis of nitric oxide. Its chronic administration in rats develops a model of severe Systemic arterial hypertension. Rosuvastatin is a sort of statin recently released that competes with the enzyme HMG-CoA reductase and inhibits the endogenous synthesis of cholesterol. The literature shows that statins affect the endothelial function independently of its hypolipidemic effect and thus it can also be useful to control blood pressure through its pleiotropic actions. Endothelial disfunction caused by arterial hypertension may be corrected with the administration of HMG-CoA like statins. However, the mechanisms involved in this process are not well understood. This study aimed at evaluating the beneficial effects of Rosuvastatin upon structural and ultrastructural aortic remodeling in a model of hypertension induced by L-Name in rats. Wistar rats were divided into 4 groups: normotensive (NT, without treatment), normotensive treated (NTR, Rosuvastatin 20mg/kg/day), hypertensive (LN, L-NAME 40mg/kg/day) and hypertensive treated (LNR, L-NAME 40mg/kg/day + Rosuvastatina 20mg/kg/day). The animals were deeply anaesthetized and killed after 5 weeks of drugs administration. 5 mm rings were obtained from thoracic aorta next to the first intercostals artery. The material was immediately isolated and separated from the surrounding tissue and processed for the study on light and transmission electron microscopy (TEM). The animals did not show significant differences concerning blood pressure (BP) and body weight in the beginning of the experiment. In the groups NT and NTR, BP were maintained in the same level during the whole experiment (123,1"b7,03 mmHg e 129,4"b3,20 mmHg, respectively). L-Name administration yielded higher BP values in LN and LNR groups (182,9"b3,64 mmHg e 167,3"b10,9 mmHg, respectively). The concomitant treatment with L-Name and Rosuvastatin showed efficacy in reducing BP levels in comparison with the hypertensive group (P$<$0.01). It was observed thicker inner and middle layers of thoracic aorta in LN group, but not in LNR group (from 269,95*f*Ým "b 68,53 to 192,86*f*Ým "b 23,41). TEM revealed thicker inner layer in the aorta of hypertensive groups, with the presence of thicker vacuolized endothelial cells and the accumulation of matrix extracelular in the subendothelial space. In normotensive groups, endothelium was preserved. Data clearly suggests that hypertension induced by L-Name promotes adverse structural remodeling of inner and middle layers of thoracic aorta in rats. Conversely, Rosuvastatin treatment is efficient in the treatment of these alterations.

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Role Of Sildenafil In Eisenmenger Syndrome: A Pilot Study

N. Garg[1], U. Agrawal, N. Sinha. *[1]Sanjay Gandhi PGI, Lucknow*

Background: Sildenafil (phosphodiesterse type 5 inhibitor) has been shown to produce significant improvement in symptoms as well as in haemodynamic parameters in patients with idiopathic pulmonary arterial hypertension (IPAH). But, it has not been much studied in patients with Eisenmenger Syndrome (ES) because of the fear that even a small decrease in systemic vascular resistance (SVR) would increase the right-to-left shunt and thus may worsen the systemic arterial saturations. We evaluated the efficacy and safety of oral sildenafil in patients of ES with special emphasis on its effects on different haemodynamic parameters. **Methods:** Fourteen patients of ES were studied. All patients underwent detailed baseline evaluation including six minute walk test (SMWT), echocardiography and cardiac catheterization. Sildenafil was started after a test dose and was gradually increased up to a target dose of 300 mg/day. Patients were followed up 2 weekly for 10 weeks and monthly thereafter for functional class assessment and SMWT. Cardiac catheterization was repeated in all patients after at least 1 month of achieving target dose. **Results:** A significant improvement in WHO class (2.3 $\pm$ 0.5 vs. 1.1 $\pm$ 0.3, p = $<$0.0001) and in SMWT distance (292.1 $\pm$ 62.8 vs. 460.3 $\pm$ 55.4 meters, p = $<$0.0001) was noted. On follow-up cardiac catheterization, a significant reduction in mean pulmonary arterial pressure (from 68.4 $\pm$ 13.2 to 59.8 $\pm$ 11.0 mmHg, p = 0.004), PVR (from 16.4 $\pm$ 8.7 to 11.4 $\pm$ 6.9 WU, p= $<$0.0001) and PVR/SVR ratio (0.8 $\pm$ 0.5 vs. 0.6 $\pm$ 0.4, p = 0.04) was noted with a significant improvement in effective pulmonary blood flow (2.6 $\pm$ 1.1 l/min vs. 3.6 $\pm$ 1.4 l/min, p = 0.003). Decrease in SVR was non-significant. Systemic as well as pulmonary arterial oxygen saturations were also significantly improved. None of the patients had any worsening in systemic arterial saturation. Symptomatic improvement was noted in all patients within 2 weeks of starting 12.5 mg thrice a day sildenafil. Peak effect was noticed at 150 mg/day dose. Sildenafil was generally well tolerated without any major side effect. **Conclusions:** Oral sildenafil improves functional capacity as well as haemodynamic

parameters in patients with ES. It may open up new possibilities and may bring fresh hope to patients with Eisenmenger Syndrome.

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EXERCISE TRAINING LEFT VENTRICULAR REMODELING IN MALES AND FEMALES RATS

V.B. Carranza[1], O.A Pinilla[1], E.M Escudero[1]. [1]*Centro de Investigaciones Cardiovasculares.UNLP*

Introduction: at baseline male and female hearts display several differences in coronary artery size, electrophysiological properties, patterns expression of certain genes and contractile properties. Differences in the remodelling responses can also be seen in rodents with pressure overload, volume overload and myocardial infarction. However the sex-dependent response of LV to exercise training has not been completely study up to now.The purpose of this study is to analyze by echocardiogram LV remodeling secondary to exercise in males and females rats. **Material and methods:** M-mode echocardiographic was performed under two-dimensional control in 19 Wistar, 4-month old rats. LV mass (LVM), LVM index (LVMI) as LVM / tibia length and relative wall thickness (RWT) as LV posterior wall thickness / diastolic diameter, was calculated with echocardiographic parameters. 11 rats, 7 males (ME) and 4 females (FE) were trained swimming 90 minutes a day, 5 days a week during 8 weeks. 8 rats, 5 males (MC) and 3 (FC) were controls. Systolic blood pressure (SBP) determined by the tail-cuff method and heart rate (HR) was obtained in each rat. All animals were sacrificed at the end of protocol to obtain LV weight and tibia length. **Results:** LVMI was higher in the exercise group (E) (MC: 193.2 $\pm$ 4.99 mg/cm; ME: 231.6 $\pm$ 13 mg/cm $p<0.04$ – FC: 110.76 $\pm$ 1.34 mg/cm; FE: 120.92 $\pm$ 1.93 mg/cm $p<0.01$). ME had showed a higher proportional increment of LVMI than FE (ME: 53.16$\pm$8.85 % ; FE: 16.17$\pm$2.87 %). ME developed a LV concentric remodeling (h/r MC: 0.44 $\pm$ 0.02; ME: 0.52 $\pm$ 0.02 $p<0.03$), not present in FE instead of the LV hypertrophy (h/r FC: 0.44 $\pm$ 0.01; FE: 0.45$\pm$0.02-ns). LV function, evaluated by endocardial and mid-ventricular shortening and myocardial performance index was similar in both groups. **Conclusion:** the exercise training by swimming produced an LV adaptative response both in males and females rats. The adaptative response was identified by the development of LV hypertrophy without changes in LV function. Remodeling in male rats was characterized by a proportional higher increase of LVM with concentric pattern. This evidence could be interpreted as a sex-dependence of the exercise training LV remodelling

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SHORT AND LONG TERM RESULTS OF PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS OLDER THAN 80 YEARS OLD

S. Bulur[1], S. Ordu[1], E.S. Albayrak[1], A. Kaya[1], S. Bulur[2], **H. Ozhan**[1], M. Yazici[1]. [1]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [2]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [3]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [4]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [5]*Duzce University Faculty of Medicine Department of Physiology, Duzce, Turkey* [6]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [7]*Duzce University Faculty of Medicine Department of Cardiology , Duzce, Turkey*

Background: Percutaneous coronary intervention (PCI) in octogenarian patients has been associated with increased cardiovascular morbidity and mortality. This study aimed to assess acute and intermediate-term clinical outcomes among octogenarians undergoing PCI. **Methods:** Patients who were "d 80 years old and who had undergone percutaneous coronary intervention were retrospectively analyzed. **Results:** Mean age of 20 patients (11 male, 9 female) was 82,2$\pm$2,5 years. Mean follow up period was 26$\pm$18 months. 13 (65%) of the patients had unergone primary and 7 (35%) of them had undergone elective PCI. 7 of them died during follow up period. Primary intervention was successful in 8 patients (success rate 62%). However three of them died during follow-up period. Intervention success rate was 72 % in elective PCI. **Discussion:** Primary PCI results in octogenarians showed that mortality and morbidity were unexpectedly higher compared to younger patients. After discharge from the hospital mortality was relatively low in the follow-up period. However, survival rates were very high in patients who had undergone elective PCI. **Key words:** percutaneous coronary intervention, age

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Epidemiology in Rheumatic Valvular Disease Surgical Replacement in a Developing Country.

Rogerio Brant Martins Chaves[1], Regina Maria De Aquino Xavier[1], Maria Cristina C. Kuschinir[1], Bernardo Rangel Tura[1], Monica Moura De Vasconcellos[1], Vitor Manuel Pereira Azevedo[1], Carlos Alberto M. Magalhães[1], José Oscar Reis Brito[1], Márcia Cristina C. M. Pinheiro[1], Clara Weksler[1]. [1]*NATIONAL INSTITUTE OF CARDIOLOGY*

Background: Rheumatic fever is a well known health problem in developing countries. Nevertheless, it remains doubtful the epidemiology of valvular surgery procedures. **Objective:** The aim of this study is to bring to light the behavior of surgical interventions in patients with Rheumatic Orovalvar Disease in a developing country. **Methods:** Transversal Cross-sectional study of valvular surgical procedures in 98 patients with Rheumatic Orovalvar Disease that was performed in 2004. The prevalence of the associated factors was evaluated. For analysis of the categorical variables, the c^2 or Fisher's exact test was used, and it was calculated the confidence interval of 95% (CI95%). It was performed Student t test or analysis of variance (ANOVA), and the Mann-Whitney non-parametric test for continuous variables. In statistical analysis it was considered significant alpha=0.05 and it was employed beta=0.80. **Results:** The mean age was 43.7 years, 63 were women (64.3% - CI95%=53.9 to 73.5%) ($p<0.0001$), and 110 procedures in 98 rheumatic patients were carried out (1.12 procedure/patient). The in-hospital time was 30 days. Twenty-nine surgeries consisted of re-operations; the most frequent first surgery was mitral valvular plasty, followed by biological mitral replacement. The mean time between the first and second surgery was 11.25$\pm$3.4 years. Regarding the whole sample: 60 mechanical and 17 biological in mitral place, 24 mechanical and 9 biological in aortic place were accomplished. Seventy-two patients (73.5% - CI95%=63.4 to 81.6%) ($p<0.0001$) received mechanical prostheses. The in-hospital mortality was 6.1% (CI95%=2.5 to 13.4%). **Conclusion:** In our sample, young patients were submitted to valvular surgical procedures with regard to developed country population. A great number of patients were submitted to mechanical valvular replacement, with anti-coagulation needs and risk. The in-hospital mortality is still important due to pre-surgical conditions.

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SHORT AND LONG TERM FOLLOW-UP RESULTS OF PATIENTS WHO ARE IMPLANTED WITH R-STENT: A SINGLE CENTER EXPERIENCE

S. Bulur[1], A. Kaya[1], S. Bulur[2], S. Ordu[1], **H. Özhan**[1], M. Yazici[1]. [1]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [2]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [3]*Duzce University Faculty of Medicine Department of Physiology, Duzce, Turkey* [4]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey* [5]*Duzce University Faculty of Medicine Department of Cardiology , Duzce, Turkey* [6]*Duzce University Faculty of Medicine Department of Cardiology, Duzce, Turkey*

Aim: The aim of this study was to analyze the follow up results of patients who had been implanted with R stents during percutaneous coronary interventions (PCI). **Method:** 42 patients (12 female, 30 male) with a mean age of 59$\pm$11 who had undergone PCI and implanted with R stents between January 2006-March 2007 in our clinic were retrospectively analyzed. Mean follow up period was 8.8$\pm$4.5 months. **Results:** Seven of the patients had undergone primary and 35 of them had undergone elective PCI. Mean diseased vessel number was 1.1$\pm$0.3. Acute gain was 2.48$\pm$0.5 mm, mean stent length was 19.2$\pm$11.6 mm. Procedure success rate was %96.7. Thirteen(26.5%) of the patients had diabetes, 6(12.2%) of them had experienced myocardial infarction (MI). In one patient, procedure was not successful. During the follow up period, three patients died [(7.5 %) two patients experienced sudden death, one of them died due to gastric cancer]. One patient had experienced a myocardial infarction and another patient had undergone PCI of a native lesion located in a different vessel that was stented before. None of the patients had experienced a stroke. During long-term follow up 8 patients had recurrent angina. Six of them accepted coronary angiography. Angiographic restenosis was detected in only one patient (instent diffuse 70 %) who had been treated with balloon angioplasty. The angiographic restenosis rate was 16.6 %. The rest of the 27 patients did not have any symptoms or major adverse cardiac events.Event free survival rate was 83.3 % and symptom free survival rate was 64.2 % **Conclusion:** R stent was successful regarding its follow up results and may be preferred in selected patients. **Key Words:** percutaneus coronary intervention, R stent

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Mortality Among Patients Submitted to Valvular Surgical Procedures. Is there any difference between rheumatic and degenerative valvular disease groups?

Rogerio Brant Martins Chaves[1], Regina Maria De Aquino Xavier[1], Maria Cristina C. Kuschinir[1], Bernardo Rangel Tura[1], Monica Moura De Vasconcellos[1], Carlos Alberto M. Magalhães[1], Arn Migowski Rocha Dos Santos[1], Clara Weskler[1], Vitor Manuel Pereira Azevedo[1], José Oscar Reis Brito[1]. [1]*NATIONAL INSTITUTE OF CARDIOLOGY*

Background: Rheumatic fever is a well known health problem in developing countries relating to valvular surgical replacement, in contrast to developed country, where valvular surgical replacement is due to degenerative diseases. Nevertheless, it remains doubtful the associated risk factors and mortality in valvular surgery procedures. **Objective:** To evaluate the mortality and associated factors in surgical procedures for cardiac valves. **Method:** all surgeries performed in 2004 in a Brazilian high complexity cardiology centre were analyzed. A Transversal Cross-Sectional study was conducted regarding the prevalence of associated factors. For analysis of the categorical variables, the c^2 or Fisher's exact test was used, and it was calculated the confidence interval of 95% (CI95%). It was performed Student t test or analysis of variance (ANOVA), and the Mann-Whitney non-parametric test for continuous variables. The association of the variables related to mortality was evaluated by means of logistical regression. Initially, it was employed univariate analysis. Those variables that proved to be statistically significant and relevant were included in the multivariate multivariable model. It was considered significant alpha=0.05 and it was employed beta=0.80. **Results:** In the study period it was realized 208 surgical valvular interventions I 160 patients (1.3 procedures/patient). It was observed 16 deaths (10.0% - CI95%=6.0 to 16.0%) during in-hospital stay. Background disease was rheumatic fever in 98 (61.2% - CI95%=53.2 to 68.7%) and degenerative in 62 (38.8% - CI95%=31.2 to 46.8%) patients. A hundred and eight patients (67.5% - CI95%=59.5 to 74.6%) were females. The average age was 50 years. The in-hospital time was less among the diseased ($p<0.05$). No association was observed between associated factors and death. The extra-corporeal circulation time was greater in diseased group. In multivariete analysis only degenerative disease was associated to mortality. **Conclusion:** Classic risk factors such as sex, age, bleeding and anoxia time were not significant. Degenerative disease remains a significant and relevant risk factor.

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Systemic vascular resistance measurement by echocardiography in chronic congestive heart failure: a tool to optimize medical prescription of Angiotensin-Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers.

L. Florio[1], G Vignolo[1], R Centurión[1], J Pouso[1]. [1]*Hospital de Clínicas - Universidad de la República*

Background: Despite conclusive evidence that angiotensin converting enzyme inhibitors (ACE-I) and angiotensin receptor blockers (ARBs) improve morbidity and mortality in patients with congestive heart failure (CHF) a significant proportion of patients are not treated with the recommended target doses derived from clinical trials. **Objective:** The aim of this study was to determine whether dose adjustment of ACE-I and ARBs in patients with chronic CHF due to systolic dysfunction guided by measurement of systemic vascular resistance (SVR) by echocardiography, could increase the number of patients treated with optimal doses as compared to usual clinical parameters. **Methods:** Patients with CHF New York Heart Association (NYHA) class I-III and left ventricular ejection fraction (LVEF) $\leq$ 40% who had no contraindications to receive ACE-I or ARBs were treated with one or both of the following drugs: enalapril and losartan. Minimal target doses considered: enalapril 20 mg/day or losartan 25 mg/day. Patients were randomized to adjusting the dose using clinical approach and SVR vs using clinical parameters only (blood pressure and symptoms). SVR was measured by Doppler echocardiography in both groups. In the second group treating physicians were blind to SVR, while in the first group if SVR $\geq$ 1200 dynesxsec/cm5 the dose was increased 25% until reaching maximal dose of ACE-I and if so ARBs was added (unless contraindication emerged). All results appear as mean$\pm$SD. The main outcome measures in follow-up were the changes in the proportion of patients (Mc Nemar test, alpha 0,05) with ACE-I/ARBs target dose, recruit vs last control in both groups. The benefit of the first group was estimated through Relative Risk (RR) with Confidence Interval(CI) 95%.Patients were clinically evaluated every month and echocardiography was performed every 6 months. Secondary outcomes included: NYHA class, mortality and survival free of admissions. **Results:** Seventy patients (50 males, age 60$\pm$12, 30 in NYHA class I, SVR 2033$\pm$802), were included and followed-up for 12.3$\pm$months. There were no significant differences in baseline clinical and echo-Doppler parameters (age, sex, LVEF, NYHA classification, SVR). In the group of patients with SVR guided treatment a significant increase was observed in the proportion of patients receiving target dose of ACE-I/ARBs (50% recruit vs 64% last control) ($p < 0.01$). In the group with guided treatment by clinical parameters only, a significant decrease was observed in this proportion (59% vs 47%)($p < 0.05$). Though the RR in the recruit (0.85,0.55–1.31) displaced to the right in the last control (1.31,0.88–2.9) no statistical meaning was reached. Not significant differences were observed in NYHA class, mortality and survival free of admissions between both groups. **Conclusions:** In patients with congestive heart failure due to systolic dysfunction, more patients treated with ACE-I or ARBs, achieve the recommended target doses when dosage was adjusted according to serial measurements of systemic vascular resistance by Doppler echocardiography.

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Effect of cardiac arrest induced by cardioverter defibrillator (ICD) testing on ischemia modified albumin (IMA).

L. Woie[1], Ø. Hetland[1], J.T. Kvaløy[2], D.W.T. Nilsen[1]. [1]*Stavanger University Hospital. Stavanger, Norway* [2]*University of Stavanger, Stavanger, Norway*

Introduction Ischemia modified albumin (IMA) is a biomarker of cardiac ischemia. IMA rises within minutes of the onset and remains elevated for several hours after cessation of ischemia. It is an early marker to help in ruling out patients with an acute coronary syndrome. IMA also detects transient myocardial ischemia following direct current cardioversion and in patients undergoing percutaneous coronary intervention (PCI). After implantation of an implantable cardioverter defibrillator (ICD), ventricular fibrillation is induced in order to test the ICD. The duration of asystole is at least 15- 20 seconds before cardioversion by the device, and in the present study we sought to evaluate the effects of induced cardiac arrest on the serum levels of IMA. **Methods** We studied 32 patients with coronary heart disease (CHD), mean age 65yr$\pm$9 and ejection fraction (EF) 30$\pm$10. All patients had primary ICD implantation. Serum for determination of IMA1 was harvested in the morning on the day of ICD implantation, IMA2 was sampled within 2 hours after implantation and IMA3 at 8PM the day of implantation. The samples from all patients were frozen within 2 hours at -70 ° C and stored for a mean of 307 days, range 39–641, until analysis. Serum IMA was measured by the albumin cobalt binding test (ACB®). **Results** IMA (n:30) increased 6.8 % from a mean of 106.2 $\pm$16,5 U/ml in IMA1 to 113,4 $\pm$12,6 U/ml in IMA2, $p<0,05$. IMA (n:32) increased 5,2 % from a mean of 106.8 $\pm$16,5 U/ml in IMA1 to 113,4 $\pm$12,6 U/ml in IMA3, $p<0.05$. For comparison, other publications have shown that the increase in IMA after cardioversion of atrial fibrillation is in the range of 3.3% - 29%, and after inducing chest pain during percutaneous intervention, it increases from 10.1% to 39.3%. The patients were divided into two categories by the median value of age and EF. There were significant differences ($p<0.05$) in the increase between IMA1 and IMA2 but not IMA3 for age$<$66 (yearlow) and age $\geq$66 (yearhigh). The IMA values for the two age group were significantly ($p<0.05$) different. For EF$\leq$26 (EF-low), there were no significant differences between IMA1 and IMA2 or IMA3, but for EF$\geq$27 (EF-high) there were significant ($p<0.05$) differences for these IMA-values. **Conclusion** After cardiac arrest for at least 15–20 seconds, there is a small, but significant increase in IMA. Older people with CHD have higher resting IMA, but experience a similar increase in IMA after cardiac arrest. It is speculated that coronary flow may be a prerequisite for the increase in IMA and that measurement of IMA after sudden cardiac arrest may have prognostic implications.

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Epidemiological Profile of the Surgical Interventions in Valvular Diseases in a Developing Country.

Rogerio Brant Martins Chaves[1], Regina Maria De Aquino Xavier[1], Maria Cristina C. Kuschinir[1], Bernardo Rangel Tura[1], Mônica Moura De Vasconcellos[1], Vitor Manuel Pereira Azevedo[1], Arn Migowki Rocha Dos Santos[1], Clara Weskler[1], Márcia Cristina C. M. Pinheiro[1], José Oscar Reis Brito[1]. [1]*INSTITUTO NACIONAL DE CARDIOLOGIA*

Background: Rheumatic fever is a well known health problem in developing countries relating to valvular surgical replacement, in contrast to developed country, where valvular surgical replacement is due to degenerative diseases. Nevertheless, it remains doubtful the epidemiology of valvular surgery procedures in developing countries. **Objective:** To study the epidemiologic profile of the patients submitted to valvular surgery in a tertiary refer center in Brazil. **Method:** all surgeries performed in 2004 in a Brazilian high complexity cardiology centre were analyzed. A Transversal Cross-Sectional study was conducted regarding the prevalence of associated factors. For analysis of the categorical variables, the c^2 or Fisher's exact test was used, and it was calculated the confidence interval of 95% (CI95%). It was performed Student t test or analysis of variance (ANOVA), and the Mann-Whitney non-parametric test for continuous variables. The association of the variables related to mortality was evaluated by means of logistical regression. Initially, it was employed univariate analysis. Those variables that proved to be statistically significant and relevant were included in the multivariate multivariable model. It was considered significant alpha=0.05 and it was employed beta=0.80. **Results:** The mean in-hospital time was 35 days and the post-operatory, 6.3 days. The extra-corporeal circulation lasted, on mean, 117.6 minutes, and the anoxia, 98 minutes. The surgery indication was rheumatic valvular disease in 48%, degenerative valvular disease in 30%, endocardite in 8.3%, and 13.7% others indications. Seventy-two patients received more than one valvular prosthesis. Mitral valvular replacement was mechanical in 86, and biological in 32 patients. Aortic valvular replacement was mechanical in 52, and biological in 42 patients. In 17 patients mitral annularplasty was carried out. Valvular replacement and CABG was performed in 17.7% and re-operations were needed in 20.5%. The mean time between the first and second surgery was 11.25$\pm$3.4 years. It was observed 16 deaths (10.0% - CI95%=6.0 to 16.0%) during in-hospital stay. **Conclusion:** The epidemiological profile of patients submitted to valvular surgery replacement proved to be quite different from that cited in the developed countries.

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Intracardiac electrocardiographic (EGM) morphology changes in patients with implantable cardioverter defibrillator (ICD).

L. Woie[1], T. Eftestøl[2], J.T. Kvaløy[2], T. Aarsland[3], K. Tjelta[1], D.T.W. Nilsen[1]. [1]*Stavanger University Hospital, Stavanger, Norway* [2]*University of Stavanger, Stavanger, Norway* [3]*Stavanger Health Research, Stavanger, Norway*

Introduction The purpose of this work is to investigate if there are changes in the EGM of patients with ICD, and if these changes have any relation to appropriate ICD therapy. **Methods** We studied 32 patients, 30 with coronary heart disease and 2 with cardiomyopathy, mean age 64yr$\pm$8 and ejection fraction (EF) 31$\pm$10. All patients had primary ICD implantation (Vitality DR®), except one with change of device. Indication for ICD: Survivors of sudden cardiac arrest:9, ventricular tachycardia (VT):9, old myocardial infarction with EF$<$30 and non-sustained-VT:14. Follow-up time was 24 weeks for 27 patients and 4–12 for 5, respectively. VT and ventricular-fibrillation (VF) zone (VTVF) $\leq$ 352 ms. Three minutes of EGM, sampling rate 200 Hz, was recorded at follow-up at week 1, 4, 12 and 24. We compared characteristics in beat shape diversity of normal beats to study changes in the EGM. Normal beats were extracted according to the highest beat similarity, first within each recording and second within the complete recording series. First, all QRS complexes and P waves were detected using a variable threshold for isolating the desired peaks. For each beat, b(i) (i=1, . . ., N), the correlation coefficient, Rij, and root mean square sample deviation, RMSij, to all other beats, b(j), were calculated. All beats satisfying the beat similarity criterion Rij $\geq$0.95 and RMSij$>$0.3 were allocated to the same group, g(k), as b (i). This procedure was repeated for b(i+1). If b already belonged to a group, g(k), all beats satisfying the similarity criterion were merged into g(k). Otherwise, b (i+1), would be the originator of a new group, g (k+1). A series of groups, G(week1), G(week4), . . ., G(week24), were determined. Beat shape diversity was characterised by beat correlation, number of groups and the variations in the PR intervals. **Results** During the observation period EGM changes were indicated by correlation $<$ 0.95 in 7 (20%), group $>$5 in 14 (44%) and standard deviation of PR interval (SD-PR) $>$1 in 15 (47%), see Table 1. By crosstabulation of these data with registration of whether patients had any VTVF events during follow up, using a Chi-Square test, there were no significant differences. **Conclusion** During the observation period, EGM changes were indicated by high number of ecg beat shape groups and variation in AV conduction changes in 44–47 % of the cases, but with no significant differences between patients with and without VTVF.

TABLE 1

	VTVF:	Yes	No	Total	p'
EGM	Corr.<.95	2	5	7	
	Corr.≥.95	7	18	25	
	Total:	9	23	32	ns
Group	>5	5	9	14	
	≤5	4	14	18	
	Total:	9	23	32	ns
SD-PR	>1	5	10	15	
	≤1	4	13	17	
	Total:	9	23	32	ns

*Fisher's Exact Test

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The Prevalence of Hypertension and its Association with Body Weight Index in Hungarian Policemen

G. Simonyi[1], JR Bedros[1], K Szakolczai[2], M Medvegy[3], T. Csatay[4], L. Halmy[1]. [1]*Ferenc Flor County Hospital* [2]*Research Institute for Technical Physics and Materials Science, Hungarian Academy of Sciences* [3]*National Health Center* [4]*National Police Health Centre*

Introduction Obesity and hypertension are well defined and there are important risk factors for cardiovascular disease. The untreated and unidentified hypertension is very dangerous because this is a "silent killer". **Patients and method** We studied 20499 Hungarian policemen (no treated earlier for hypertension) 18543 men, age 18–61 y. The hypertension was defined as a systolic blood pressure ≥ 140 and the diastolic blood pressure ≥90 mm Hg. **Results** We found 7011 subjects with hypertension (34.20%). The distribution of hypertension by gender was: 35.63% men and 20.27% women of the total subjects. The systolic BP was 146.34±12.72 mmHg, the diastolic BP was 88.68±10.54 mmHg. The mean BMI among hypertensive was 28.01±4.21 kg/m^2. The prevalence of obesity (BMI≥30 kg/m^2) was observed among 29.82% of cases of hypertension. The prevalence of overweight (BMI=25–29.9 kg/m^2) was 44.77%, the normal weight (BMI=18.5–24.9 kg/m^2) was 24.84% and the underweight (BMI<18.49 kg/m^2) was 0.57% in hypertension. **Conclusion** Our findings showed significant prevalence of hypertension in this "normal" population. The majority of hypertensive subjects had abnormal BMI. The prevalence of abnormal BMI was high. Antihypertensive medication and body weight reduction are recommended in hypertension with abnormal BMI.

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The Effects of Vegetarian Diets on Chylomicron Metabolism

J.C.M. Vinagre[1], C.G. Vinagre[2], F.S. Pozzi[3], E. Slywitch[4], R.C. Maranhão[5]. [1]*Instituto do Coraç,ã,o* [2]*Instituto do Coraç,ã,o* [3]*Instituto do Coraç,ã,o* [4]*Departamento de Medicina e Nutriç,ã,o da Sociedade Vegetariana Brasileira (SVB) e Hospital e Maternidade Santa Marina* [5]*Instituto do Coraç,ã,o*

Vegetarian diets present less calories, lower levels of saturated fats, cholesterol, animal protein, yet higher levels of polyinsaturated fats, carbohydrates, fibers, magnesium, boron, folate and antioxidants. All the mentioned nutrients affect cardiovascular disease risk factors such as hypertension, diabetes mellitus, obesity and dislipidemias. Total cholesterol, LDL and VLDL cholesterol and triglycerides levels are all lower in vegetarian individuals when compared to omnivores. The metabolism of chylomicrons (Qms), and their products of degradation by lipoprotein lipase action, the remnants which carry the dietary lipids in the bloodstream, are related to the atherosclerotic process. The effects of vegetarian diets on then Qms metabolism were not been evaluated. This study evaluated the plasma kinetics of an artificial Qm labeled with 3H- triglycerides (3H-TG) and 14C-esterified cholesterol (14C-EC) in 5 vegetarians who had no consumption of animal origin products for at least a year and 5 omnivores who consumed animal origin products. All participants were normolipidemic, non diabetic and under no hipolipemiant drugs. After an intravenous injection of the artificial Qms, blood samples were collected at pre-established time intervals for a 60 minute period. Radioactivity of each sample was measured in order to calculate the fractional clearance rate (FCR) of the radioactive lipids by compartmental analysis. The FCR of the 3H -TG was greater in the vegetarian group when compared to the onivorous group (0.05324 "b 0.01652; 0.0236 "b 0.01192 respectively, p=0.01786 "b 0.01786 respectively, p=0.4952). In conclusion, the Qm lipolysis process is greater in vegetarian individuals, indicated by a greater FCR of 3H-TG an effect which could be relevant to prevent atherosclerosis.

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Cortical renal volume measurements by using multi-detector row CT and its relationship with primary hypertension

J Vallejos[1], **P Carrascosa**[1], C Capuñay[1], A Deviggiano[1], J Carrascosa[1]. [1]*Diagnostico Maipu*

Purpose: to determine the relantionship between cortical renal volume measurements by using multi-detector row CT and primary hypertension. **Background:** cortical renal volume is a good indicator of the number of nephrons, a renal parameter that plays an important role in the pathogenesis of primary hypertension **Materials and methods:** twenty adults patients (mean age: 70 years), 9 (45%) with normal blood pressure and 11 (55%) with hypertension, underwent abdominal angiography with a 16 row CT scanner (Brilliance 16; Philips Medical Systems). Renal length was measured by using multiplanar reformations. A contour-detection three-dimensional assessment for calculating cortical renal volume with the voxel-count method was developed. Two observers performed all measurements twice, with an interval of two weeks between the measurements. The relationship between renal length and cortical volumen was established. Differences in volume measurements between men and woman, between rigth and left kidney, and between normotensive and hypertensive patients were analyzed by using the Student t test. The ROC curve analysis was used to define the cut-off point of cortical renal volume between normotensive and hypertensive patients. **Results:** in all patients, the cortical renal volume mean value was 94.10 mL (range: 44.80 – 138.33), and the renal length mean value was 112.72 mm (range: 96.01 – 133.95). The correlation between renal length and cortical renal volume was weak, which means that renal length is a poor indicator of renal size. No significant differences in cortical renal volume between the men and women or between the rigth and left kidneys were found. The cortical renal volume mean value in normotensive patients was 115.74 mL, whereas in patients with hypertension the mean cortical renal volume was 76.41 mL, with a difference of 39.33 mL ($p < 0.001$, 95% CI: 23.07 a 55.58). A cut-off point of 102.10 mL (sensitivity: 100%, specificity: 88%) of cortical renal volume was found between normotensive and hypertensive patients. **Conclusion:** a significant reduction of cortical renal volume measured with 16 detector row CT was observed in patient with primary hypertension.

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Left ventricle evaluation with 64-row Gadolinium enhanced cardiac CT.

P. Carrascosa[1], A Deviggiano[1], C Capuñay[1], J Carrascosa[1], M Garcia[2]. [1]*Diagnostico Maipu* [2]*Mount Sinai Heart*

Objective: To determine the diagnostic accuracy of 64-row gadolinium enhanced cardiac CT (64-Gd-CCT) in the evaluation of the anatomy and functional analysis of the left ventricle (LV) in correlation with Doppler echocardiography (D-Echo) **Methods:** Ten patients were evaluated by 64-Gd-CCT and D-Echo. CTs were performed with a 64-row CT scanner (Brilliance 64; Philips Medical Systems). The technical parameters used were 64x0.625 mm collimation, 0.675mm slice thickness, 0.3mm reconstruction interval, 0.2 pitch, 120kV, 800mAs. A maximum dose of up to 0.4 mmoL/kg of body weight of gadolinium (gadopentetate dimeglumine) was injected. Oral beta-blockers were administered to all patients whose heart rate was above 60 bpm 24 to 48 hours prior the study. Volumetric analysis was performed using a bi-plane area-length method. The average volumes (ESV, EDV) and the ejection fraction (EF) of the LV and the diastolic-posterior wall LV thickness (PW), the interventricular septum thickness (Sp), and the end-diastolic and end-systolic LV diameters (DIAed, DIAes) were calculated and correlated with D-Echo findings. Statistical analysis: Agreement was determined by Blant & Altman method. The Spearman rank order correlation (Rho) was also calculated. **Results:** There were no complications in the patients evaluated. Anatomy evaluation: Rho values were 0.96 for PW, 0.96 for Sp, 0,76 for DIAed and 0,65 for DIAes measurements. In a global analysis, Rho was 0,98. The 95% limits of agreement were -1,27 to 1,63 for PW; -1,81 to 2,46 for Sp; -5,72 to 7,83 for DIAed and -2,67 to 4,40 for DIAes. Functional analysis: Rho values were 0.92 for ESV, 0.75 for EDV and 0,80 for EF measurements. In a global analysis, Rho was 0,95. **Conclusion:** 64-Gd-CCT can performed a complete analysis of the LV in patients with contraindications of iodinated contrast material, using the same acquisition for the evaluation of the coronary arteries.

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Multi-detector computed tomography feasibility's in calculating the cortical renal volume

J Vallejos[1], **P Carrascosa**[1], C Capuñay[1], A Deviggiano[1], J Carrascosa[1]. [1]*Diagnostico Maipu*

Purpose: to determine the repeatability of multi-detector computed tomography in quantifying the cortical renal volume. **Background:** cortical renal volume measurements with computed tomography demonstrate to be a repeatability method that can be regarded as an indicator of renal size. **Materials and methods:** Twenty adults patients (mean age: 70 years) underwent abdominal angiography with a 16 row CT scanner (Brilliance 16; Philips Medical Systems). Renal length was measured by using multiplanar reformations. A contour-detection three-dimensional assessment for calculating cortical renal volume with the voxel-count method was developed. Two observers performed all measurements twice, with an interval of two weeks between the measurements. The relationship between renal length and cortical volumen was established. Differences in volume measurements between men and woman and between rigth and left kidney were analyzed by using the Student t test. Intra and inter-observer variabilities of the measurements were determined by using the Bland and Altman method. **Results:** the cortical renal volume mean value was 94.10 mL (range: 44.80 – 138.33), and the renal length mean value was 112.72 mm (range: 96.01 – 133.95). The correlation between renal length and cortical renal volume was weak, which means that renal length is a poor indicator of renal size. No significant differences in cortical renal volume between the men and women or between the rigth and left kidneys were found. Intra and inter-observer variabilities of all measurements were lower than 1.5%, with limits of agreement for renal volumetry ranging from -1.47 to 3.05 mL. **Conclusion:** cortical renal volume measurements with a 16 detector row computed tomography were repeatability.

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Prevalence of myocardial bridging in 64-row MDCT coronary angiographic studies.

P. Carrascosa[1], C Capuñay[1], A Deviggiano[1], J Carrascosa[1], M Garcia[2]. [1]*Diagnostico Maipu* [2]*Mount Sinai Heart*

Objective: to determine the prevalence of MB by 64-row MDCT coronary angiography in an outpatient population with suspected coronary artery disease. **Background:** Myocardial bridging (MB) is a congenital coronary anomaly that occasionally can be associated with reduced coronary flow reserve causing angina symptoms. **Methods:** Coronary 64-row MDCT coronary angiograms of 100 patients (78 males) with known or suspected coronary artery disease were evaluated. CT exams were performed using a 64-row CT scanner (Brilliance 64; Philips Medical Systems) and the scan parameters were: 64 x 0.625 mm collimation; 0.67 mm slice thickness, 0,20 pitch and.80 mL of iodine contrast injected at a rate of 6 mL/sec followed by 60mL of saline injection at a rate of 6 mL/sec. The presence, location and type of MB were assessed. Based on the degree of myocardial coverage of the tunneled artery determined on the sagittal plane, they were classified as: 1) complete MB when the tunneled artery was fully covered by myocardial fibers; 2) incomplete MB when the tunneled artery was partially covered by isolated myocardial fibers or layer of connective and adipose tissues. **Results:** No complications related to the MDCT procedure occurred. Among the 100 patients, 48 patients did not present MB, 43 patients had 1 MB and 9 patients had 2 MB. Thirty-seven MB (60,67%) were located at the middle third of the left anterior descending artery (LAD), 12 MB (19,67%) were on a diagonal branch of the LAD; 8 MB (13,11%) were at the latero-ventricular branch of the left circumflex artery and 4 MB (6,55%) on the intermediate branch. Thirty-four MB were classified as complete MB. **Conclusion:** Even though the prevalence of MB was substantially higher in comparison with reported angiographic rates, our reported MDCT results are in concordance with reported autopsy rates. MDCT 64-row coronary angiography may be useful

to detect MB in patients with anginal symptoms and/or abnormal stress myocardial perfusion without obstructive coronary atherosclerosis.

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Risk Stratification in Non-ST Segment Acute Coronary Syndromes Based on Acute and Chronic Risk Scores Derived From the European Guidelines

M Dorobantu[1], AG Fruntelata[1], M Stefuriac[1], M Chiru[1], L Platica[1], A Crusitu[1], A Scafa-Udriste[1]. [1]*Emergency Hospital of Bucharest, Cardiology*

Purpose: Risk stratification is the current state-of-the-art in the management of non-ST segment elevation acute coronary syndromes (NST-ACS). Many risk scores have been developed as a tool to optimize the cost-benefit ratio in this heterogenic patient population. The European Society of Cardiology (ESC) Guidelines suggest use of GRACE score and for the patients with NST-ACS, but also advocates the prognostic role of many simple clinical, biological, electrical and angiographic parameters that have not been quantified or validated for their combined impact on outcome. **Methods:** We have calculated quantitative acute and chronic risk scores by adding 1 point for each prognostic component suggested by the ESC Guidelines. Acute risk score varied between 0 and 5 points, and chronic risk score between 0 and 11 points. The two risk scores have been validated for their prognostic value in a cohort of 418 patients with NST-ACS followed at 30 days and at 1 year, allowing patients stratification into distinctive risk groups. The composite end-point was the rate of early and late major adverse cardiac events (MACE). **Results:** The 418 patients with NST-ACS (266 men, 63.6%), mean age 64.7±11.78 years, were separated based on acute risk score into low-risk group (0–2 points, 77.3% of patients) and high risk group (3–5 points, 22.7%) and based on chronic risk score into low (0–2 points, 53.8%), intermediate (3–5 points, 41.4%) and high-risk groups (>6 points, 4.8%). The table shows significant prediction of MACE by acute risk score ($p<0.001$), and by chronic risk score ($p<0.05$ between low and high-risk). **Conclusions:** The proposed risk scores were validated in our cohort of patients with NST-ACS as being significantly predictive of prognosis, especially for early follow-up of the acute risk of composite events. Early risk stratification in non ST-segment elevation acute coronary syndromes can therefore be improved using these scores derived from current guidelines.

Group	MACE at 30 days (%)	MACE at 1 year (%)
Whole population	11.2	16.0
Acute low-risk	6.5	
Acute high risk	27.4*	
Chronic low-risk		12.0
Chronic intermediate risk		20.2
Chronic high-risk		25.0**

* $p<0.001$, ** $p<0.05$ compared to acute and chronic low-risk;

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Relationship between dietary intake of alcohol and some metabolic and cardiovascular risk factors in healthy men

L. Vitek[1], M Kalousova[1], B Stankova[1], L Novotny[1], P Schreib[2], T Zima[1], A Zak[1]. [1]*Charles University in Prague* [2]*Czech Technical Institut*

Background: Alcohol abuse belongs to serious medical problems all over the world. Although mild intake of alcohol may exhibit protective effects, its abuse is associated with true deleterious consequences not only for the liver but also for the whole organism. The aim of our study was to assess relationship between alcohol intake and several metabolic and cardiovascular risk factors. **Methods:** In the group of clinically healthy men (n=102; mean age 39.1±10.8 years) divided into 4 groups according to regular weekly alcohol intake (group 0: <70 g; group 1: 70–210 g; group 2: 211–420 g; group 3: >420 g alcohol/week) complete clinical examination including basic anthropometric measurements, detailed biochemical work-up and weekly dietary profile assessment (using SW Nutrimaster SE) were performed. Data were compared using standard statistical tests and linear regression analyses. **Results:** Close relationship between alcohol intake and several risk factors for cardiovascular diseases and metabolic syndrome was observed. These risk factors included waist-to-hip ratio ($p=0.019$), body mass index ($p=0.009$), total caloric intake ($p=0.003$), systolic as well as diastolic blood pressure ($p<0.04$), serum lipids (LDL cholesterol and triglycerides, $p<0.002$), GGT activity ($p<0.001$), iron metabolites (serum iron and ferritin, $p<0.05$)) and markers of oxidative stress (AGEs, advanced glycation end products, $p=0.005$; AOPP, advanced oxidation protein products, $p=0.07$). **Conclusions:** This study proves an important relationship between alcohol intake and risk factors for cardiovascular diseases or metabolic syndrome. Subjects abusing alcohol thus seem not to be only at higher risk for alcohol-mediated liver damage, but also for cardiovascular and common metabolic diseases. Moreover, it seems that risk factors typically associated with non-alcoholic fatty liver disease are frequently present also in alcohol abusers suggesting, at least to certain degree, similar pathogenesis of alcoholic as well as non-alcoholic fatty liver disease.

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Elderly patients with STEMI are suboptimally treated with reperfusion therapy

Z. Monhart[1], V. Faltus[2,3], H. Grunfeldova[2,4], P. Jansky[5]. [1]*Hospital Znojmo* [2]*Centre of Biomedical Informatics, Prague* [3]*Institute of Computer Science AS CR, v.v.i, Prague* [4]*Hospital Caslav* [5]*Cardiovascular centre, University hospital Motol, Prague*

Objective - To evaluate delivery of primary reperfusion treatment (PPCI or fibrinolytic therapy) in a group of unselected patients over 75 years with STEMI primary admitted to non-PCI hospitals) and impact of this therapy on in-hospital complication and mortality. **Methods -** A total of 744 consecutive STEMI pacients (mean age 66.9 ± 12.6 years) from years 2003–2006 were included into the study, and data on their demographics, reperfusion therapy and in-hospital management and complications were collected. **Results -** The proportion of patients over 75 years was 30.2 %(223/744). Among the STEMI patients over 75 years the majority were women (60.5 %) as contrasted to younger age group with domination of men (72.1 %). There was a significant difference in proportion of elderly pts in reperfused group – 22.8 % and non-reperfused group – 46.1 % ($p<0.001$). For patients over 75 years, the OR for reperfusion in comparision with younger patients was 0.35. In group over 75 years there were 47.7 % patients who did not receive reperfusion treatment – primarily because of extended delay between the onset of chest pain and presentation, the other reasons were advanced age and/or multiple comorbidities. The proportion of non-reperfused patients in younger age group was significantly lower 24.0 % ($p<0.001$). The prevalent form of reperfusion in our cohort was PPCI (97%). The most frequent in-hospital complication was heart failure - in elderly patients who underwent some form of reperfusion therapy it was present in 23.2 %, and 31.4 % in non-reperfused group ($p=0.222$). Mortality rates in this age group substantially differed according to reperfusion therapy - 6.3 % in reperfused and 42.9 % in non-reperfused patients ($p<0.001$). **Conclusions -** A substantial proportion (47.7 %) of patients over 75 years presenting with STEMI did not receive any primary reperfusion therapy (PPCI or fibrinolytic therapy) In comparison with younger age groups, the OR for primary reperfusion in elderly patients was 0.35. Delivery of primary reperfusion therapy offered a marked survival advantage even in patients with advanced age compared with those in whom such therapy was omitted. The paper was partially supported by the project 1M06014 of the Ministry of Education CR

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Use of not evidence based treatments among elderly real world patients hospitalized with acute heart failure.

A. Macchia[1], **G Ciambrone**[1], N Laffaye[1], J Gambarte[1], S Donato[1], N Rizzo[1], F Novo[1], C Higa[1], P Comignani[1]. [1]*Hospital Aleman. Buenos Aires. Argentina*

Evidence from various studies has shown the underutilization of effective cardiovascular medications (CVM) in patients with chronic heart failure (CHF). Less information is available documenting the frequency and clinical implications of using not evidence based CVM. We prospectively collected information of all consecutive patients admitted with CHF and who survived the index hospitalization. All patients were prospectively followed up for a median time of 33 months. We linked clinical data recorded at baseline with administrative datasets from prescriptions and vital statistics for all patients. Since prescription propensity might be related to physicians' attitudes a hierarchical Poisson regression model adjusted for major confounders was used to account for potential correlation within patients due to physicians' clustering. Not evidence CVM include chronic use of either calcium channel blockers, digoxin, anti-arrhythmic agents or thiazides. One hundred and sixty-nine patients were identified. Mean age was 77 "b 12 years and 44% were females. All patients were admitted to critical care unit. Ninety out 169 patients (53%) were exposed to not evidence based CVM during follow up. Not evidence based treatments were associated with an adjusted excess risk of death during follow up (OR 2.08 [95% CI, 1.07 to 4.02]) Female sex (OR 2.05 [1.01 to 4.13]) and number of non cardiovascular comorbidities (OR 2.47 [95% CI, 1.01 to 6.02]) independently predicts use of not evidence based CVM. Neither cardiovascular risk factor nor clinical, hemodynamic or neurohumoral factors influences prescriptions of not evidence based CVM. We found that use of not evidence based CVM is frequent and double the odds of mortality during follow up. Programs aimed at identifying and improving prescriptions during follow up should constitute part of the routine clinical care.

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ASSESSMENT OF CAROTID-RADIAL PULSE WAVE VELOCITY CHANGES AFTER INDUCED ISCHEMIA

E. Rusak[1], O. Iavicoli[1], S. Vazquez[1], S Robert[1], M. Duarte[1], J. Lerman[1], C. Bellido[1]. [1]*Laboratorio de Hipertensión Arterial – División Cardiología – Hospital de Clínicas "Jose de San Martin". Buenos Aires. Argentina.*

Background: Endothelial dysfunction leads to arterial stiffness in resistance arteries through different mechanisms than in conduit or elastic vessels. These changes can be assessed by echo-Doppler in brachial artery showing the flow-mediated dilation (FMD) depending on local endotelial nitric oxide (NO) production. Elasticity impairment of arterial wall is dependent on facts such structural changes and dynamic forces affecting vascular tone. This impairment is proportional to pulse wave velocity (PWV) changes mainly in processes affecting NO production, e.g. type 2 diabetes (DBT-2) and hypertension (HTN). **Aim of the study:** To assess carotid-radial PWV before and after induced ischemia in patients with different causes leading to endothelial dysfunction in comparison with normal subjects. **Population and methods:** We performed carotid-radial PWV measurement by means of Complior® before and after induced ischemia during at least five minutes of sphygmomanometer cuff compression in 83 patients (aged 30–86) (Group I) with different diseases (DBT-2, HTN, metabolic syndrome, etc) and in 26 non smokers healthy people (aged 15–84) (Group II). **Results:** Post-ischemic PWV showed non-significant changes in group I (7.7±0.4 / 7.7±0.4 m/sec), while it provoked a significant PWV reduction ($p<0.0003$) in group II (7.7±0.4 / 6.9±0.4 m/sec). **Conclusion:** Patients with risk factors for endothelial dysfunction showed less arterial distensibility represented by a less reduction in PWV following FMD after induced ischemia in comparison with normal subjects. This could be produced by an impaired availability of NO in a dysfunctional endothelium in comparison with a normal response to local shear stress during flow changes.

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Brain Natriuretic Peptide Increases 24 Hours After Acute Myocardial Infarction Irrespective of Reperfusion and Is a Marker of Early Left Ventricular Remodeling

M. Dorobantu[1], R. Onut[1], A. Scafa-Udriste[1], D. Constantinescu[1], A. Alexandrescu[1], A. Vasile[1], E. Gainoiu[1], A.G. Fruntelata[1]. [1]*Emergency Hospital of Bucharest, Cardiology*

Background: Following acute myocardial infarction (AMI), brain natriuretic peptide (BNP) levels peak within first 24 h. Circulating levels of B-type natriuretic peptide (BNP) reflect the severity of cardiac dysfunction. There have been several reports indicating that the plasma BNP level obtained in the acute phase of AMI can be used as a prognostic marker. **Methods:** We have studied a population of 88 patients (74 men, 84.1%), mean age 54.38±12.88 years, with first AMI treated by reperfusion, either by thrombolysis (89.8%), or by primary angioplasty (10.2%). Levels of BNP were measured on admission, at 24 hours after reperfusion and at 1 month. Serial echocardiography was performed at baseline, 24 hours after reperfusion, at discharge (7–10 days), and at follow-up at 6 months and 1 year. Impact of BNP levels on outcomes were assessed by correlation with established prognostically important echocardiographic of left ventricular function. **Results:** Mortality was 8.0% in hospital and 5.1% at 1 year. A peak of BNP was observed at 24 hours (207.67±175.54pg/mL). Patients were stratified in 2 groups according to BNP at 24 hours (BNP 24): group 1 of 20.83% patients with normal BNP 24 (<80pg/mL) and group 2 of 79.17% patients with elevated BNP 24 (≥80pg/mL). Reperfusion was successful by non-invasive criteria in 80% of group 1 and 87.7% of group 2 and by TIMI3 flow in infarct related artery in 66.7% of group 1 and 43.9% of group 2, respectively (p=NS), showing that early BNP increase was not a marker of impaired reperfusion in our population. The level of BNP 24 was predictive of left ventricular ejection fraction (LVEF) at 24 hours (51.58±7.31 in group 1 vs 45.89±7.42 in group 2, p=0.006), and also of left ventricular end-systolic volume (LVESV) at 24 hours (p=0.03). More than that, BNP 24 was significantly correlated with the wall motion score index (WMSI) at 24 hours, (1.38±0.26 in group 1 versus 1.69±0.39 in group 2, p< 0.001), and on discharge from hospital (days 7–10) (1.32±0.31 vs 1.59±0.34, p = 0.005). **Conclusion:** Peak of BNP at 24 hours after AMI can be looked upon not only as a marker of myocardial stunning, but also of early left ventricular remodeling, being correlated with early LVEF, LVESD and WMSI. Implications of this findings on hard outcomes as cardiac death and subsequent heart failure remain to be evaluated.

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Effect of repeated coronary angioplasty on QT dispersion

E.Z. Soliman[1], M Abdel-Salam. [1]*Wake Forest University School of Medicine- NC, USA* [2]*National Heart Institute- Cairo, Egypt*

Aim: to test the effect of repeated coronary angioplasty (PTCA) on corrected QT dispersion **Background:** increased QT dispersion has been reported to be associated with poor prognosis in patients with coronary heart diseases (CHD). Little is known about the natural history of QT dispersion during the course of coronary heart disease especially in case of recurrence of symptoms and need of repeated revascularization. **Methods:** This study included 117 coronary heart disease patients (87 males and 30 females- age 59±11 years) who underwent successful PTCA (PTCA 1) from 1999 to 2002 and needed another PTCA (PTCA 2) at a later time due to recurrence of symptoms through 2007. To be included in the analysis all patients had at least four ECGs: before PTCA1, after PTCA1, before PTCA 2, and after PTCA 2. QT dispersion was manually measured as the difference between the maximum corrected QT interval and the minimum corrected QT interval. **Results:** QT dispersion significantly improved in the ECG after PTCA1 compared to the ECG before PTCA1 (37.1± 9.3 Vs 41.6± 10.8, P<0.0017). Similar improvement in QT dispersion was noticed on comparing the ECG after PTCA2 to the ECG before PTCA2 (38.3± 10.1 Vs 42.9± 11.82, P<0.003). On the other hand, there was no significant difference between the QT dispersion in the ECG done before PTCA1 and the ECG before PTCA 2 (the time when there was symptomatic myocardial ischemia). Also, there was no significant difference between QT dispersion in the ECG after PTCA1 and the ECG after PTCA 2 (the time when there was no symptomatic ischemia). In conclusion, the corrected QT dispersion is dynamic and it improves dramatically with revascularization and gets worse by myocardial ischemia. Considering that QT dispersion has been reported to be associated withy arrhythmic events, these results further stresses on considering revascularization as a first consideration in management of CHD patients at high risk of arrhythmic events rather than using antiarrhythmic drugs or devices

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Discrepancy between Troponins T and I in chronic hemodialysis patients

H. Trimarchi[1], M Dicugno, M Mongitore, M Forrester, A Toscano, F Lombi, M Vera, M Alonso, H Pereyra, A Muryan. [1]*HOSPITAL BRITANICO DE BUENOS AIRES ARGENTINA*

Objective: To determine the correlation between Troponin T (TnT) and Troponin (TnI) in patients with normal renal function and clinical suspicion of acute myocardial infarction (MI) and in chronic hemodialysis patients. **Methods:** Patients with normal renal function and clinical suspicion of MI (Group A): n = 34; males: 24 (70.6%); females 10 (29.4%). Serum creatinine 1.29 ± 0.45 mg/dl. Hemodialysis patients (Group B): n = 29; males: 24 (82.8%); females 5 (17.2 %). Serum creatinine 7.33 ± 2.84 mg/dl. TnT was measured by EQLIA, third generation Roche reactive (Elecsys 2010). TnI was determined by QLIA, Johnson & Johnson reactive (Vitros Eci). TnT and TnI measurements were divided in 3 intervals: TnT (ng/ml): <0.01 (reference value), 0.01–0.1 y >0.1 (reference value for MI) TnI (ng/ml): <0.08 (reference value), 0.08–0.4 y >0.4 (reference value for MI) **Results:** TnT vs TnI in Group A: r=0.8492; TnT vs TnI in Group B: r = 0.2584. Degree of accordance between Tns T and I: Group A: TnT > 0.1 ng/ml; TnI > 0.4 ng/ml = 12/13: 92.3%; Group B: TnT > 0.1 ng/ml; TnI > 0.4 = 0. **Conclusions:** "X A high correlation between TnT and TnI was observed in patients with normal renal function and clinical suspicion of MI. "X A poor correlation between TnT and TnI was observed in chronic hemodialysis patients. "X High degree of accordance (92.3%) between both troponins as a marker of diagnosis of MI in patients without renal failure and an overall low degree of accordance between both troponins in chronic hemodialyzed patients. "X The discrepancy observed in chronic hemodialysis patients between TnT and TnI could be due to their different molecular weights and cytoplasmatic pools and to a persistent accumulation of dissimilar fragments of the TnT molecule.

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Correlation between chest pain and acute coronary syndrome diagnosis

M. Assad[1], A. Volschan[1], M. Diniz[1], LH. Fonseca[1], M. Santos[1], C. Stipp[1], A. Sa[1], E. Mesquita[1]. [1]*Pro-Cardíaco Hospital*

Introduction: The patients admitted with chest pain, in Emergency Unit, are initially classified based in pain characteristic, to define investigation strategy of acute coronary syndrome (ACS). **Objective:** The aim of this study was to evaluate the accuracy of chest pain characteristic (CPC) for ACS diagnosis. **Methods:** Four hundred (400) patients (age: 60+/- 14y; 60,6% male), admitted in a tertiary hospital emergency unit, with chest pain were evaluated. The patients were included in an attending systematized protocol, which defined the CPC in A-Type: definitely angina, B-Type: probably angina, C-Type: high probability of not being angina, D-Type: definitely is not angina. The ACS diagnosis was based in positive troponin, positive noninvasive testing or more than 50% of coronary obstruction. **Results:** The A or B-Type chest pain was present in two hundred thirty-three (233) patients, in whom one hundred forty (140) had the diagnosis of acute coronary syndrome. Between the patients that presented C or D-Type chest pain, thirty-four (34) confirmed acute coronary syndrome. The CPC presented 80% of sensibility, 59% of specificity, 60% of PPV, 80% of NPV; 1,96 of positive and 0,33 of negative test for verisimilitude ratio. **Conclusion:** The CPC presented moderate accuracy for ACS exclusion, and low accuracy for its confirmation.

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AGE-RELATED CHANGES IN MYOCARDIAL OXIDATIVE STRESS AND THE INTERVENTIONAL EFFECT OF DHEA

M. H.V.M. Jacob[1], D.R. Janner[1], A Belló-Klein[1], M.F.M. Ribeiro[1]. [1]*UFRGS* [2]*UFRGS* [3]*UFRGS* [4]*UFRGS*

JACOB, M.H.V.M.**, JANNER, D.R.**, BELLÓ-KLEIN, A. e RIBEIRO, M.F.M. e Laboratório de Regulaçáo Neuro-Humoral e Laboratório de Fisiologia Cardiovascular, Instituto de Ciências Básicas da Saúde, Departamento de Fisiologia, Universidade Federal do Rio Grande do Sul The secretion and the blood levels of the adrenal steroid dehydroepiandrosterone (DHEA) and its sulfate ester (DHEAS) decrease profoundly with age. Aging is a dangerous independent factor in the occurence and development of cardiovascular diseases. Many epidemiological studies show an inverse correlation between DHEA/DHEAS plasma concentration and mortality, with increased risks of cardiovascular disease. Previous works have shown that antioxidant defenses decline in almost all aged mammals. Exogenous DHEA can exert a dual effect, antioxidant or prooxidant, depending on the dose and the tissue specificity. **Purpose:** To observe changes in the oxidative status and the interventional effects of DHEA in myocardium during the aging process. **Methods:** Male Wistar rats (3, 13, 18 and 21 months) were treated with DHEA (10 mg/kg) once a week, subcutaneously, for 5 weeks, and were killed by decapitation. Controls received vehicle (vegetal oil). Blood samples were collected to quantify lipid peroxidation (LPO) and protein oxidation (carbonyl groups). The hearts were removed and homogenized to quantify LPO and the activities of superoxide dismutase (SOD), catalase (CAT) and glutathione-S-transferase (GST). Data were evaluated by two-way analysis of variance (ANOVA) followed by the Student-Newman-Keuls post-hoc test. Differences were considered significant when P<0.05. **Results:** SOD activity didn't show any statistical difference between groups. However, in 18-month-old rats, SOD activity was lower (27%) in the treated group when compared to control. CAT and GST activities showed increased statistical difference as function of age (P<0.001), but not due to DHEA treatment. Carbonyl levels measured in plasma and LPO measured in hearts were found both increased in all aged groups (P<0.001). However, DHEA treatment has promoted an increase in LPO measured in erythrocytes (P<0.001) in groups 3, 13 and 18-month-old rat when compared to controls (260%, 427% and 280% respectively). **Conclusion:** As expected, these results show an increased myocardial oxidative damage to lipids, a decline of antioxidative defense in myocardium related to aging development. DHEA was not capable to reverse these effects in temporal windows studied. More than that, DHEA treatment had a pro-oxidative profile upon systemic blood. **Financial Support:** FAPERGS and CNPq.

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MORPHOLOGIC PATTERN OF LATE GADOLINIUM ENHANCEMENT IN TAKO-TSUBO SYNDROME. "ANOTHER CLUE TO SOLVE THE ENIGMA".

G. Avegliano[1], M. Huguet[3], P. Kuschnir[1], A. Panaro[3], F. Botto[1], G. Oller[3], D. Capdeferro[2], A. Frangi[2], R. Ronderos[1], M. Petit[3]. [1]*Instituto Cardiovascular de Buenos Aires* [2]*Universidad de Imagen Computacional de la Universidad Pompeu-Fabra, Barcelona (España).* [3]*Centro Cardiovascular Sant Jordi, Barcelona (España)*

Introduction: Tako Tsubo Syndrome (TTS) clinically manifests itself like an acute coronary syndrome. Occasionally can be preceded by an emotional or physical stress and it is characterized by transitory dysquinesia –aquinesia, most frequently localized in the apex, with non significant obstructive epicardial coronary lesions. Although its etiology remains not known, many hypothesis have been suggested like diffuse spasm of epicardial coronary arteries, microcirculation spasm, direct adrenergic effect or plaque disruption with spontaneous fibrinolysis. **Method:** Between January 2005 and January 2007, 7 consecutives patients with

TTS criteria were studied with cardiac magnetic resonance (CMR) within the first 72 hours after their admission. The CMR was performed on a dedicated cardiovascular scanner (1.5 T GE, Cvi). T2- weighted STIR sequence and delay contrast – enhanced (DE) imaging with an inversion recovery gradient echo sequence after 10 minutes gadolinium injection, were performed. Patients follow-up was done with clinical controls and imaging techniques: echocardiogram at days 3, 7, 30 and 60 and CMR at the third month. **Results:** 7 women (mean age 63±7, oppressive thoracic pain in 7; dyspnea in 3; previous stress situation in 4; ST segment elevation in 4; negative T waves in 7) were studied. 3 patients presented with heart failure symptoms and 5 had raised Troponin I and CK-MB values. The invasive angiogram did not show any significant coronary lesions, and wall motion improvement was noted at 7±5 days. Mean ejection fraction at admission and at recovery were 47% and 63%, respectively. In 6 cases dyskinetic region was located at the apex and in one case at mid ventricular segments. The initial CMR showed typical wall motion abnormalities and DE showed a light sign of hyperenhancement at the level of the wall motion abnormalities, clearly different from the normal segments, that did not show contrast enhanced at all. The 3 month CMR showed normal wall motion and no delay enhancement. **Conclusion:** Late gadolinium enhancement in patients with acute TTS shows a singular morphologic pattern. It could correspond to edema-inflammation of the affected zone and suggests that the patophisiology of this syndrome could be related to diffuse damage of the microcirculation instead of epicardial vessel affection.

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Delayment factors for medical assistance search in patients with chest pain

M. Assad[1], A. Volschan[1], M. Diniz[1], LH. Fonseca[1], M. Santos[1], C. Stipp[1], AK. Sá[1], E. Mesquita[1]. *[1]PRO-CARDÍACO HOSPITAL*

Introduction: The delay in patient attendance with chest pain (CP) has been pointed as one of the factors of worst clinical evolution. The presence of variables that can interfere in time between the CP beginning and its first attendance has been little studied. **Objectives:** This study was designed to evaluate which factors can interfere in time between the CP beginning and its first medical evaluation. **Methods:** Four-hundred thirteen (413) patients with CP (age: 60+/-14y, 60% male) were admitted in a tertiary hospital. The time considered tolerable between the CP beginning and its first attendance was ninety (90) minutes. Sixty (60) minutes were considered the time to make a decision of searching for hospital attendance, and thirty (30) minutes were considered the time to arrive in the hospital. The variables analyzed were: gender, age > = 60y, systolic arterial hypertension (SAH), diabetes mellitus (DM), dyslipidemia, tobaccoism, familial history (FH), coronary arterial disease (CAD) and CP classified as angina at admission. The logistic regression analysis was realized to define the relation between the variables presence and time higher than ninety (90) minutes for first attendance. **Results:** The age >= 60y (p=0,97), male gender (p=0,64), SAH (p=0,78), DM (p=0,10), dyslipidemia (p=0,25), tobaccoism (p=0,053), CAD (p=0,26), and CP characteristics (p=0,54), did not present statistical significance for the analyzed outcome, while the FH (p=0,04) did. **Conclusion:** The FH was the only variable that presented relation with the time between CP beginning and its first medical attendance.

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Acute effect of sildenafil citrate on pulse wave velocity in middle-aged patients

M. Assad[1,2], A. Brandão[2], R. Pozzan[2], E. Magalhães[2], AP. Brandão[2]. *[1]PRO-CARDÍACO HOSPITAL [2]RIO DE JANEIRO STATE UNIVERSITY*

Background: Sildenafil (S) is an effective drug for erectile dysfunction which is a common complaint for hypertensives. Its effects on arterial systems have not been thoroughly studied. Pulse wave velocity (PWV) is a measure of arterial stiffness and has been used as a marker of vascular damage in hypertension. We studied the acute effect of oral sildenafil 100 mg on PWV obtained by the Complior method in middle-aged hypertensive patients **Methods:** ●Design: Prospective, open-label study in a tertiary hospital ●N = Sixty subjects ●Age (range) = 40–59 years old Group 1 (G1) normotensives Group 2 (G2) hypertensives n 30 30 Sex 15 male 15 male Age 46 ± 5.0 49 ± 5.0 ●Exclusion criteria: diabetes, smoking,obesity, total cholesterol 240mg/dl, any cardiovascular disease, or any other condition with endothelial dysfunction. **Results:** 1)Groups did not differ by sex; 2) G2 showed higher age (p<.002), waist (p<.001), plasma glucose (p<0.02), casual systolic (SBP) and diastolic BP (DBP) (p<.001), all mean SBP and DBP, systolic and diastolic load (24h, diurnal, nocturnal) obtained by ABPM (p<.002); 3) In both groups, BP decreased after S (p<.001); 4) PWV adjusted (PWVadj) for age, SBP and DBP was higher in G2, both before and after S (p<0.001); 5) Significant absolute and relative PWVadj reductions after S were also observed in both groups (p<0.001), but they were higher in G2 (p<.001); **Conclusion:** PWV adjusted for BP and age, decreased significantly after acute use of sildenafil. The reduction was greater in hypertensives. These findings suggest that sildenafil has favorable acute effects on arterial distensibility, measured by PWV.

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BAROREFLEX FUNCTION ASSESSTMENT BY A NON-INVASIVE PRESSOR TEST

M. Duarte[1], D.R. Grana[1], C.A. Bellido[2], J. Milei[1]. *[1]INSTITUTO DE INVESTIGACIONES CARDIOLOGICAS (ININCA) UBA-CONICET, ARGENTINA [2]HOSPITAL DE CLINICAS, UNIVERSIDAD DE BUENOS AIRES, ARGENTINA*

Background: Baroreflex avoids blood pressure variability and controls rapid adaptation of cardiovascular system to acute hypotension, postural changes or volemia variations, metabolic disturbances, environmental stress and in response to vasoactive agents. Recently, our group has reported severe fibrosis along with a pronounced narrowing of the arterioles in carotid barochemoreceptors in old patients who had suffered from carotid atheromatosis and died from stroke. **Objective:** To study the baroreflex function in adults >65 years old with and without hypertension. **Methods:** Fifty adults over 65 years old were studied. A non-invasive pressor test was performed by the Valsalva maneuver (15 seconds) while an ECG was recorded. Blood pressure and heart rate were obtained basally, during the maneuver, at the end of the test and every minute until 5 minutes posttest or until the patient reached basal values. Presence of orthostatism was evaluated previously. Based on the immediate chronotropic response to the maneuver the baroreflex function was classified as: normofunction (increase of the heart rate between 10–30 beats per minute at the end of the test); or hypofunction (increase of the heart rate <10 beats per minute). Twelve leads ECG, carotid sinus massage, ambulatory blood pressure monitoring, 24-hs Holter monitoring, cardiac ecoDoppler, Doppler of the neck vessels, arterial distensibility by pulse wave velocity (PWV) (Complior System, Colson, France), and complete urinalysis were performed. **Results:** Of the 50 patients, 33 were hypertensives (74.09±6 years old) and 17 were normotensives (73.29±7 years old; NS). Twenty six hypertensive patients (78.78%) and 2 normotensive patients (11.76%) showed baroreflex hypofunction (p<0.0001; Chi2). The hypertensive group showed a PWV of 10.78±0.61 vs. 9.14±0.45 m/sec for the non-hypertensive group (p<0.0001, t test). Ambulatory blood pressure monitoring of the 33 hypertensives showed that in 11 of them the systolic blood pressure increased (9 dippers and 1 non-dipper), and in 1 there was variability. In the normotensive group the ambulatory blood pressure monitoring recordings were uneventful. ECG, carotid sinus massage, Holter, Doppler of the neck vessels, and complete urinalysis were uneventful. **Conclusion:** Hypertension increases vascular stiffness resulting in a marked baroreflex dysfunction independent from age and increasing the risk for cardiovascular events in adults over 65 years old. Our results suggest that in old hypertensive patients with baroreflex dysfunction the use of antihypertensive agents of short action or of those inducing abrupt hypotension should be discouraged. Similarly counterindicated would be those that interfere with chronotropic autonomic response, since they would cause hemodynamic disturbances and long term increase of blood pressure variability and an increased risk of cerebrovascular events.

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Exercise ventilatory response in diabetic patients

R. Peidro[1], **D Motta** , A Angelino, G Brión, E Navia, P Diaz Uberti, R Favaloro. *[1]Favaloro Foundation [2]Favaloro Foundation [3]Favaloro Foundation [4]Favaloro Foundation [5]Favaloro Foundation [6]Favaloro Foundation [7]Favaloro Foundation*

Introduction: the ventilatory response to exercise (VRE) can be influenced by the blood lactate accumulation. The pulmonary ventilation has two inflection points during incremental exercise. The second point is the ventilatory threshold 2 (VT2). It's associated with respiratory compensation point to the metabolic acidosis. **Aims:** to investigate and to compare the VRE in subjects with and without diabetes. **Material:** treadmill exercise testing with Bruce protocol were performed in consecutive patients (ps) with type 2 diabetes (DBT) and in subjects without DBT (NoDBT). Rest Maximal Voluntary ventilation (MVV) was registered. The VRE was obtained from a calibrated ventilometer and it was plotted against exercise time. Ventilation to VT2 (VEVT2) was established by visually checking the inflection point in the linear VE/time ratio. Maximal exercise ventilation (MVE) and post exercise 1st. minute (PEVE) were evaluated. The treadmill speed (TS) to VT2 and MVE were obtained. Stadistics: t student's test **Results:** 97 consecutive ps were evaluated (69% male); 55 DBT and 42 NoDBT ps: 61.0 +/- 7.6 and 60.1+/-6.1 years old (p 0.57), BMI 30.2 +/-4.6 y 29.1 +/-3.5 (p 0.20), waist circumference 108.9 +/-10.9 y 105.6 +/-8.2 (p 0.10), respectively. **Conclusions:** 1.- DBT ps have less ventilation to VT2. 2.- DBT ps have less exercise capacity (in METs) and treadmill speed to VT2 level. It could be an expression of early metabolic acidosis secondary to pulmonar and peripherical microvascular abnormalities.

	MVVV (L/min)	VEVT2 (L/min)	MVE (L/min)	PEVE (L/min)	TS at VT2	TS at MVE	METs at VT2	METs at MVE
DBT 55 ps	79.9+/-18.5	56.3+/-16.2	76.3+/-20.9	60.1+/-17.3	4.26+/-1.13	4.92+/-1.19	7.49+/-2.43	8.85+/-2.61
NoDBT 42 ps	84.3+/-23.2	63.3+/-17.8	82.1+/-22.8	66+/-18	5.37+/-1.06	6.01+/-1.08	9.86+/-2.29	11.6+/-1.89
p	0.53	0.04	0.2	0.12	0.001	0.001	0.001	0.001

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DEMOGRAPHIC CHARACTERISTICS OF OVER SIX HUNDRED RENAL ARTERIES INTERVENTIONS.

N. Schechtmann, Md Facc[1], E. Polanco Md[2], S Karas, Md Facc[3]. *[1]MIMA (MELBOURNE INT MED ASSOCIATES*

Introduction: Renovascular disease is an important correctable cause of secondary hypertension. The incidence of this disorder is to 10 to 45 percent in patients with acute, severe, or refractory hypertension. In the past two decades the clinical recognition and noninvasive diagnosis of this condition has improved with the wide spread use of magnetic resonance angiography, CT-Scan angiography and Doppler ultrasonography. The net result of this has been an increase in the numbers of patients refers for invasive treatments of this disease as a mean of blood pressure control. Over the last 10 years we have intervened in 605 patients with Renovascular hypertension. The following information described these patient population characteristics. **Observations:** The age range of our population was (38–95). Of the 605 patients 398 were females and 207 were males. The distribution according to age groups was as followed: Age 90–95 (n=6), 80–89 (n=123), 70–79 (n= 283), 60–69 (n=131), 80–89 (n=123), 50–59 (n=48), 40–49 (n=13), 30–39 (n=1). 420 interventions were unilateral and 185 were bilateral interventions. Restenosis of the angioplasty site was seen in 8% of the cases. None of the patients require open surgical revascularization. **Conclusions:** 1.Woman in age group 60–69 and 70–79 represent the majority of our patients with 22% and 47% of our group. 2.Elderly population ages 80–90 represent 20% of our population. 3.Patients less than 60 years of age represent only 11% of the total population. 4.PTA of the renal arteries and stent

placement is a safe procedure with good case selection and optimal pre and post intervention precautions. 5.Renal Arterial Disease is an Integral part of Interventional Cardiology Practice.

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Cardiac Magnetic Resonance Has Advantages Over 2D Echocardiography In Assessment Of Mitral Stenosis Patients.

A. Rapaee[1], CK Liew[2], AYY Fong[2], CK Ang[2], HB Liew[2], WM Chin[2], BSP Chin[3], TK Ong[2], KH Sim[2]. *[1]Faculty Medicine, UNIMAS, Malaysia [2]Department Cardiology, SGH,Kuching, Malaysia [3]IMU, Kuala Lumpur, Malaysia*

Introduction: Cardiac magnetic resonance (CMR) when compared to 2D echocardiography (2DE) has been shown to be feasible and accurate in evaluating mitral stenosis. In addition to measuring mitral valve area using planimetry, this study sought to determine whether CMR offers other advantages in terms of acquisition time, intra and interobserver variability, influence of heart rhythm and presence of left atrial thrombus. **Methodology and Results:** 36 patients (mean age 37.9 +/- 11.25 years) with mitral stenosis underwent transthoracic 2DE(Philips Sonos 7500) and CMR (1.5T Philips Intera). Mitral valve area (MVA) using 2DE was 1.34 +/- 0.43cm2; by CMR was 1.31 +/- 0.39 cm2 with Pearson correlation 'r' = 0.97, p <0.001. Acquisition time using 2DE was 38.60 +/- 8.08 minutes; CMR was 28.89 +/- 1.97 minutes with p < 0.001. Acquisition time in patients with atrial fibrillation (AF) and sinus rhythm (SR) using 2DE was 40.23 +/- 5.79 minutes and 27.20 +/- 4.98 minutes respectively, p <0.001. However using CMR, acquisition time in AF and SR was 29.15 +/- 1.99 minutes and 28.20 +/- 1.81 minutes respectively with p = 0.2. Intraobserver reliability for MVA analysis was higher with CMR compared to 2DE (intraclass correlation; 0.93 vs 0.61). Interobserver reliability for MVA analysis also higher with CMR compared to 2DE (intraclass correlation; 0.92 vs 0.49). Left atrial thrombi were detected in 25.3% using CMR; 10.3% using 2DE with Chi square, p = 0.02. Image quality graded as excellent, good and unsatisfactory was 72.2%, 16.7% and 11.1% respectively using CMR compared to 30.6%, 36.1% and 33.3% respectively using 2DE with Chi square, p = 0.025. **Conclusions:** CMR demonstrated faster acquisition time, better image quality, highly reproducible measurement and higher rate of left atrial thrombus detection over 2DE. It also showed excellent correlation with 2DE in assessment of MVA.

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Impairment of Endothelial Function In Newly Diagnosed Hypertensive and Prehypertensives Patients

A. Rapaee[1], H Nawawi[2], K Yusoff[2]. *[1]Faculty of Medicine, UNIMAS, Malaysia [2]Faculty of Medicine, UiTM, Malaysia [3]Faculty of Medicine, UNIMAS, Malaysia*

Introduction: There is growing evidence that endothelial dysfunction (ED) is the earliest event in artherogenesis and also precedes morphological changes of arterial wall in hypertensive. ED is associated with cardiovascular risk factors; however its occurrence in the newly diagnosed hypertensives and prehypertensives as defined by JNC 7 is yet to be determined. The objective of this study is to assess the flow mediated dilatation (FMD) which is endothelial dependent in newly diagnosed hypertension (NDH) and prehypertensives as compared to normotensives. **Methods and results:** Non invasive method in detection of endothelial dysfunction was used with a 7.5 MHz linear transducer and 2D Echocardiography Sonos 5500. Brachial artery diameter and flow velocity was measured at rest, during reactive hyperemia with increased flow (endothelial-dependent dilatation) and post sublingual glyceryl trinitrate (endothelial-independent dilatation) administration. The classification of hypertension, prehypertension and normotension were made base on the recent JNC 7 guideline. 24hour ambulatory blood pressure monitoring, fasting serum lipid profile and fasting blood glucose were done on all subject. 92 newly diagnosed hypertension, 90 prehypertensives and 90 normotensives with mean aged of 41.9 "b 6.2, 42.7 ± 6.4 and 41.6 "b 5.3 years respectively were enrolled into study. No significant different in all lipid profile parameters and fasting sugar between the NDH, prehypertensives and control. The NDH had significantly higher systolic pressure (SBP) than the controls (151.8 "b 4.7 mmHg versus 110.9 "b 5.4 mmHg, p < 0.0001) and the diastolic pressure, mean 24 hour systolic and diastolic pressure were also significantly different (p<0.0001) between the newly diagnosed hypertension and controls. The mean SBP for the prehypertensives group was 130 ± 5.2 mmHg and diastolic blood pressure of 81.7 ± 5.3 mmHg. (p < 0.001 respectively). Mean FMD for NDH was 4.6 "b 4.3 % and prehypertensive was 6.2 ± 3.3% (p = 0.1). However as compared to controls (FMD = 10.6 ± 4.6) both NDH and prehypertensives have significantly lower FMD. (p < 0.0001 and p = 0.002 respectively) The nitrate response dilatation for NDH was also impaired as compared to control with mean of 18.1 "b 9.7% and 23.7 "b 7.6% respectively (p = 0.005). The nitrate response in prehypertensive (20.1 ± 9.8 %) with p = 0.07 as compared to normortensives. **Conclusion:** Endothelial dysfunction occurs early among NDH and prehypertensives. This observation may have important implication on the future management strategies for these patients particularly stratifying the prehypertensives group. Another important finding is the decreased response to GTN in NDH, suggesting that hypertension, in addition to endothelial dysfunction, also causes dysfunction of smooth muscles.

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Diagnostic and treatment algorithm for sustained ventricular tachycardia in chronic Chagas disease

R. Viotti[1], C Vigliano[1], MG Alvarez[1], B Lococo[1], M Petti[1], G Bertocchi[1], A Armenti[1], A Sinisi[1]. *[1]Hospital Eva Perón*

Chagas disease is the leading cause of infectious myocarditis affecting 25% of the 8–10 million people infected in Latin America. The sustained ventricular tachycardia (SVT) is a complex ventricular arrhythmia associated with a poor prognosis, independently of the origin of the underlying cardiopathy. Clinical studies of SVT in coronary artery disease and non-ischemic cardiomyopathy exist, but are absent in the chronic chagasic cardiomyopathy. It can be estimated a hypothetical number of 13,000 to 22,000 deaths per year due to chagasic ventricular tachycardia that could lead to ventricular fibrillation in Latin America. The aim of the study was to establish the distinguishing characteristics, prognosis, and treatment behaviors for sustained ventricular tachycardia in chronic Chagas disease. **Methods.** We analyzed all the studies available in the medical index among data of our centre experience. The analysis was focalized on: 1-Morphologic substrate of sustained ventricular tachycardia. 2-Mechanisms and triggers of sustained ventricular tachycardia. 3-Prognostic significance of the clinical picture. 4-Detection of the location where sustained ventricular tachycardia originates. 5-Endocardial vs. Epicardial electrophysiological mapping. 6-Parasite persistence of chagasic heart disease and sustained ventricular tachycardia. 7-Empirical treatment with amiodarone. 8-Ablation vs. Implanted cardio-defibrillators. 9-Aneurismectomy. **Results.** 1-Three criteria can be considered as the morphologic substrate for the SVT in Chagas disease: left ventricular segmental lesions, His-Purkinge bundle branch blocks and left ventricular dilation with a decrease of global systolic function. 2-The predominant mechanism is the reentrant circuit originated in areas of transition between scar and normal myocardium. 3-The clinical good tolerance of SVT revealed a better prognosis compared with patients that presented hemodinamic instability. 4-Determining the exact location where SVT originates is an objective to reach because the treatment can differ. 5-The distribution of the fibrosis in the chronic chagasic myocarditis can have subepicardium predominance coincidently with the site of the reentrant circuit. 6-Nests of Trypanosoma cruzi and intense myocarditis can be found in the histology of aneurysms. 7-Amiodarone is the most effective drug to prevent the recurrence of SVT. 8-The programmed electrical stimulation and electrical mapping can select the patients who would benefit from a radiofrequency ablation, whereas for resuscitated patients or for the cases without the exact knowledge of the mechanism and site of the SVT, implants of cardioverter defibrillators would be highly recommended. 9- The most frequently segmental lesion associated with SVT is the basal post-inferior wall, thus aneurismectomy is a limited treatment. The chronic chagasic cardiomyopathy presents clear differences compared with coronary artery disease and other non-ischemic cardiomyopathies. The proposed algorithm for SVT in Chagas disease was adapted to these differential characteristics keeping in mind a criterion of consensus that involves all the aspects of Chagas disease. **Conclusions.** The diagnosis and treatment of chagasic SVT can be established logically according to each patient's characteristics.

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Furosemide induced cardiac alterations in thiamine-deprived rats

S. Cunha[1], J.C. Bastos[1], J.B. Salles[1], M.C.C. Silva[1], V.L.F.C. Bastos[1], C.A. Mandarim-De-Lacerda[1]. *[1]State University of Rio de Janeiro*

Background: In the last three decades experimental and clinical researches suggested furosemide inducing thiamine deficiency and possibly cause or aggravate myocardial dysfunction, but the jury is still out on this. Aim: The present work was undertaken to verify whether long-term furosemide administration can induce myocardial thiamine deficiency with consequential structural alterations. **Methods:** Twenty-four male 75-days-old Wistar rats were divided into four groups: (1) thiamine standard-chow fed rats with intraperitoneal furosemide administration (30 mg.kg-1.day-1); (2) thiamine standard-chow fed rats with intraperitoneal saline; (3) thiamine-deficient chow fed rats with intraperitoneal furosemide; (4) thiamine-deficient chow fed rats with intraperitoneal saline. Furosemide treatment was carried out for 30 days. Free thiamine and its mono and pyrophosphate esters were quantified in plasma, erythrocytes and myocardium, and free thiamine in urine, by high performance liquid chromatography. Erythrocyte transketolase activity and the thiamine pyrophosphate effect to recover transketolase activity were also determined. Thiamine deficiency was defined as the occurrence of simultaneous low erythrocyte thiamine pyrophosphate and transketolase activity levels, and a thiamine pyrophosphate effect >15%. Thiamine urinary excretion was determined on the days 1 and 8 after intraperitoneal injections, and for three periods after the injections: 0–6 h, 6–12 h and 12–24 h. Electrolytes in urine and blood, as well as urea and creatinine were analyzed. Left ventricle mass index (LVmi), intramyocardial arteries-to-cardiomyocyte ratio ([ima]/[cmy]), cardiomyocyte cross-sectional area (A[cmy]) and cardiomyocyte nuclei number (N[cmy]) were estimated by stereological methods. Myocardial structure was also studied by transmission electron microscopy. **Results:** Group 3 showed significantly lower blood and myocardial thiamine levels, which was not observed in group 1. LVmi, A[cmy] and the [ima]/[cmy] ratio were smaller in thiamine-deficient furosemide-treated rats. However, the number of cardiomyocyte nuclei among the groups was not different. We observed in thiamine-deficient rats, membrane-lined vesicles containing mitochondrial debris in the form of recognizable cristae, and giant mitochondria, with swelling and crystal desintegration. Myofibrillary structure did not show any abnormality. Thiamine urinary excretion was augmented by furosemide on the first six hours after its administration. This effect continued on the eighth day in group 1. Greater urine volume in furosemide treated rats than in saline treated rats during nocturnal period was not associated with greater thiamine excretion in the same period. Thiamine urinary excretion on the first day of treatment was: saline groups 1.71 ± 0.33 nmol.h-1; furosemide groups 3.05 ± 0.42 nmol.h-1 (P=0.02). **Conclusions:** Furosemide administration is not the primary cause of thiamine deficiency in rats with adequate thiamine intake. Furosemide aggravates thiamine deficiency only in situations associated with insufficient thiamine intake, causing cardiac structural alterations, such as myocardial fiber hypotrophy, poor microvascularization and mitochondrial degeneration. Furosemide causes thiamine urinary excretion increment in rats associated with sodium, chloride, potassium and calcium urinary excretions. **Keywords:** furosemide. diuretic, vitamin B1, stereology, electronic microscopy.

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Risk stratification in asymptomatic severe mitral regurgitation: clinical, biochemical and echocardiographic variables. Is it possible to determine adverse clinical outcome?

R. Pizarro[1], P. Oberti[1], M. Falconi[1], F. Achilli[1], A. Arias[1], J. Krauss[1], A. Cagide[1].

Background: It is hard to know how to evaluate clinical risk in asymptomatic severe organic mitral regurgitation (MR). Few studies incorporate score stratification with clinical and echocardiographic variables. In the last years, biochemical markers prove to be useful in valvular heart disease, but it is not tested with clinical and echocardiographic data. **Objective:** To evaluate a score risk with clinical, biochemical and echocardiographic variables to identify patients with severe MR and poor prognosis. **Methods:** We evaluated 177 asymptomatic patients (pts.) with severe organic MR (mean age: 64±8 years; 64% male sex; left ventricular ejection fraction: 67±4 %). We elaborate a score with the following variables: 1- age > 60 years (0–1); 2- end – systolic diameter (ESD) ≥ 40 mm (0–1); 3- effective regurgitant orifice area (ERO) > 55 mm^2 (0–1); 4- total exercise time < 7 minutes (0–1); 5- NT- pro BNP > 105 pg/ml; 6- atrial volume >120 cm^3 (0–1). Total score range: 0–6. End – point variables at follow –up were: 1- long-term survival; 2- symptomatic progression; 3- valvular surgery; 4- left ventricular systolic dysfunction (LVSD) (EF > 5% decrease). **Results:** Mean follow-up was 3,5 ± 1,2 years. Five pts. died (3%); 64 pts. (36%) became symptomatic and 19 pts. (11%) had left ventricular dysfunction during follow-up. Mitral valve surgery was done in 71 pts. (40%). Combined event – rate (death, LVSD, symptomatic progression and/or valvular surgery) in relation to the score point system was : 0–1, 2 ± 0.4 % ; score 2–3, 47±6% and score 4–6, 79±7%. In addition, valve surgery rate was 1.5 ±0.6 % with score 0–1; 37 ±5% with score 2–3 and 81±6 % with score 4–6. Receptor Operator Curve analysis discriminate pts. with the combined end-point and valve surgery with an area under curve of 91% and 96 %, respectively. **Conclusion:** In asymptomatic pts. with severe organic mitral regurgitation, score risk stratification with clinical, biochemical and echocardiographic variables provides an adequate identification of pts. with adverse outcome and can be applied in clinical practice.

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Isolated coronary artery disease of the diagonal branch of the left anterior descending artery

V. Kuznetsov[1], I. Bessonov[1], I. Zyrianov[1], G. Kolunin[1], D. Krinochkin[1], M. Semukhin[1], M. Bessonova[1], L. Frazin[2]. *[1]Tyumen Cardiology Center, Tyumen, Russia [2]Chicago's VA Hospital University of Illinois, Chicago, Illinois, USA*

Background: A few data exist concerning the isolated coronary artery disease (CAD) of small coronary vessels. **Aim:** To assess the characteristics of isolated CAD of the diagonal branch of the left anterior descending artery. **Methods:** A total of 6866 symptomatic consecutive subjects underwent clinical investigation, echocardiography and coronary angiography. 777 patients with coronary angiographic atherosclerosis (>50% of lumen) were selected: 720 patients (10.5%) with isolated CAD of the left anterior descending artery (group 1) and 57 patients (0.8%) with isolated CAD of the diagonal branch (group 2). Groups were matched for age and sex. **Results:** Higher rates of alcohol drinking (38% vs 23.9%, ğ=0.018), diabetes mellitus (12.3% vs. 4.9%, p=0.018), arterial hypertension (79% vs 57.5%, p=0.001), silent myocardial ischemia (7.0% vs 0.8%, p<0.001) were found among group 2 than group 1. No difference between groups was observed for severity of heart failure, prevalence of angina pectoris and history of myocardial infarction. According to echocardiographic measurement patients of group 1 had higher left ventricular (LV) dimension (50.1±5.0 mm vs. 49.5±3.3 mm, p=0.02), lower LV ejection fraction (55.3±8.8% vs 58.4±5.9%, p=0.039), higher extent of LV wall motion abnormalities (16±17.1% vs 9.8±11.9%, p=0.02). Thickness of interventricular septum was higher in group 2 (13.1±1.9 mm vs 12.4±2.2 mm, p=0.01) as well as thickness of LV posterior wall (11.6±1.4 mm vs 11.1±1.5 mm, p=0.003). Multivariate analysis showed that both parameters were independently related with arterial hypertension but not with localization of CAD. **Conclusion:** Despite less severity of LV abnormalities in patients with isolated lesion of the diagonal branch compared to patients with isolated lesion of the left anterior descending artery many clinical characteristics were similar between groups. And some of them (risk-factor profile, prevalence of silent ischemia) were more severe in patients with the diagonal branch atherosclerosis.

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Association between polymorphisms of the Renin-Angiotensin System genes and essential hypertension: a community-based study in Southern China

Y. Zhan[1], X. Jiang[1], H. Sheng[2], J. Li[3], P. Xun[4], Y. Cheng[1], J. Huang[1], H. Xiao[2]. *[1]First Affiliated Hospital, Nanjing Medical University [2]National Engineering Center for Biochip at Shanghai [3]Dongtai People's Hospital of Jiangsu Province [4]School of Public Health, Nanjing Medical University*

Objectives Renin-angiotensin (RAS) genes are promising candidate genes for essential hypertension (EH) as a key role in blood pressure regulation by maintaining vascular tone and the balance of water and sodium. Recently, a series of new variations in RAS main component genes have been demonstrated to influence the rate of the gene transcription. Some variations in these genes have been shown to be associated with EH in different population, but the influence of these genetic variations is still to be determined. We investigated 6 polymorphisms in the main component genes of RAS: ACE (I/D), AGT (AGT A- 6G, A-20C, G-217A and T174M) and AT1R (A1166C). This study was aimed to explore the association between variantions in RAS genes and EH in the population of Southern China. **Methods** The study was conducted in the countryside of Dongtai country, Yancheng city, Jiangsu province, China. 455 subjects were recruited. 6 polymorphisms in RAS genes were genotyped by gene chip technology. Association studies were performed in 220 EH patients and 235 normotentives. All the subjects had homogeneity of living surrounding and had not accepted any drug treatment for decreasing blood pressure before enrollment in the study, which eliminated the influence of mixed factors on the attack of EH to the greatest extent. **Results** The results showed that the gene frequencies at AGT A- 6G, T174M and ACE I/D sites were significantly different between case group and normotentive control group(P<0.05). Moreover, AGT A-6G, T174M and ACE I/D were significantly associated with EH (AGT A-6G: AA vs. AG +GG; OR=1.36; 95% CI =1.04–1.77. T174M: CC vs. CT+TT; OR =1.45; 95% CI =1.15–1.90. ACE I/D: II vs. ID + DD; OR=1.171; 95% CI=1.00–1.37). While the logistic regression analysis suggested that the haplotype of AGT -6A, 174C, -217G and -20A might decrease the risk of EH(OR = 0.64; 95%CI = 0.49 – 0.83), after the confounding factors of gender, age and BMI were adjusted. The forward-stepwise multiple logistic regression analysis showed that the factors of ACE-I/D DD and BMI effected on EH independently. **Conclusions** In conclusion, the AGT A- 6G, T174M and ACE I/D may be associated with EH. While the haplotype of AGT composed by -6A, 174C, -217G and-20A alleles may decrease the risk of EH. Larger independent sample studies are warranted to validate our findings in the future.

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Implementation and Results of a Comprehensive Cardiac Rehabilitation Program in a Developing Country.

E Rivas Estany[1], J Alvarez Gomez[1], J Barrera Sarduy[1], S Sixto Fernandez[1], L Rodriguez Nande[1], C Kesser Garcia[1]. *[1]Institute of Cardiology and Cardiovascular Surgery, Havana, Cuba.*

Cardiovascular diseases are the leading cause of death in Cuba, a developing LatinAmerican country, since more than 40 years ago, with a high prevalence and a negative social-economic repercussion. A national and comprehensive cardiac rehabilitation (CR) program developed at community level has been implemented all over the country since 1989. The principal aim of this report has been to analyze and compare the last two years results of the implementation of this CR program. In this study were included all patients with the diagnosis of acute myocardial infarction, unstable angina pectoris or after coronary angioplasty (PTCA), aorto-coronary bypass or valvular surgery discharged alived in the 23 hospitals involved in the Cuban Cardiological Network, sponsored by the Health Ministry. The program included the three phases for comprehensive CR considered by the World Health Organization, also it were included changing life style measures and physical exercises at target training heart rate determined through previous exercise stress testing. Chi-square test was used to analyze the qualitative comparable results. 10611 patients were included in the study in 2006 of whom 5202 (49%) were enrolled in the CR program. 52,4% of myocardial infarction patients were included in the CR program, 28% of angina and PTCA patients and 79% of coronary and valvular surgery patients. In 2005 were included in CR Phase I a higher number of patients than in the last year (14977 vs 8477, p<0,05), nevertheless more patients received psychological support and outwork medical follow-up in 2006. It was observed only a tendency to a higher number of exercise stress test, with diagnostic or evaluative purpose, performed in 2005 compared with the following year (22955 vs 19088, p= n.s.). The best results of the comprehensive CR program were observed in the hospitals and community centers of the western region of the country, where Havana, the capital is located. It was concluded that the national CR program in Cuba is a reality, nevertheless it is required to increase its development in some regions of the country-side.

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Effect of PARP inhibition on young spontaneously hypertensive rat (SHR) hearts

E. Bartha[1], R. Halmosi[1], I. Solti[2], E. Bognar[2], K. Kovacs[3], T. Habon[1], T. Kálai[4], B. Sumegi[2], K. Hideg[4], K. Toth[1]. *[1]University of Pecs, Medical School of Pecs, First Department of Medicine [3]University of Pecs, Medical School of Pecs, Department of Biochemistry and Medical Chemistry [5]University of Pecs, Medical School of Pecs, Department of Pathology [7]University of Pecs, Medical School of Pecs, Institute of Organic and Medicinal Chemistry*

Introduction: The spontaneously hypertensive rat (SHR) is a well established and a suitable model for studies of hypertension and its consequences. Oxidant-mediated activation of poly(ADP-ribose)polymerase enzyme (PARP) is important in the development of endothelial dysfunction and in the pathogenesis of various cardiovascular diseases. Several studies reported that endothelial dysfunction associated with hypertension is also dependent on PARP and can be prevented by its pharmacological inhibition. Therefore we hypothesized that a quinazoline-type PARP inhibitor (L-2286) has preventive effect on the onset of serious alterations on cardiac performance in SHR. **Methods:** 6-week-old SHR male rats were treated with L-2286 (5 mg/b.w. in kg/d, n=9, SHR-L) or placebo (n=8, SHR-C) p. os for 26 weeks. 6-week-old male CFY Sprague-Dawley rats were used as aged-matched control (n=7, CFY). At the end of the 26 week period, echocardiography and gravimetric measurements were performed and plasma BNP activity was determined. In order to detect the extent of fibrotic areas, histologic samples were stained with hematoxylin-eosin. The phosphorylation state of Akt-1, GSK-3β, MAPK and PKC cascades were monitored by Western blotting. **Results:** All the measured gravimetric parameters (heart weight: p<0.05, ventricles/body weight ratio: p<0.05, ventricles/length of tibia: p<0.05) and activity of plasma BNP (p<0.05) were significantly elevated in SHR-L and SHR-C groups compared to the CFY group. The body weights of CFY group was significantly higher (p<0.05 vs SHR-L and SHR-C). The above mentioned parameters did not differ significantly between SHR-L and SHR-C groups. Histological analysis revealed interstitial fibrosis both in SHR-L and SHR-C groups, and this differ significantly from CFY group (p<0.05). The phosphorylation of Akt-1 and GSK-3β were increased significantly (p<0.05) in SHR-L and SHR-C groups compared to CFY group The activation of ERK 1/2, JNK and p38-MAPK were also augmented significantly (p<0.05) in SHR-L and SHR-C groups compared to CFY group. The phosphorylation of PKC(pan), PKC α/β II, δ and ϵ were the lowest in CFY group and became elevated in SHR-L and SHR-C groups

($p<0.05$ vs CFY). Echocardiography study showed that the ejection fraction and fractional shortening decreased significantly ($p<0.05$ SHR-L and SHR-C vs CFY), while left ventricular end-diastolic and end-systolic volumes increased significantly ($p<0.05$ SHR-L and SHR-C vs CFY). The posterior wall and septum were significantly ($p<0.05$) thicker in both SHR groups than in CFY group. In case of posterior wall and septum thickness, and left ventricular mass, these parameters were significantly decreased by L-2286 treatment in SHR-L group ($p<0.05$) compare to SHR-C group. **Conclusion:** Altough SHR shows the signs of myocardial hypertrophy, our results suggest that PARP inhibition with L-2286 treatment had modest beneficial effect on young SHR hearts.

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Significance of determining troponin I levels in the evaluation of patients with isolated form of aortic stenosis before and after aortic valve replacement

A. Nikolic[1], LJ Jovovic, M Vukovic, T Babic, M Balevic, V Maravic, D Brunner.
[1]Cardiovascular Institute Dedinje [2]Cardiovascular Institute Dedinje [3]Cardiovascular Institute Dedinje [4]Cardiovascular Institute Dedinje [5]Cardiovascular Institute Dedinje [6]Cardiovascular Institute Dedinje [7]Interlight laboratory

Introduction: In the absence of angiographically visible coronary lesions, elevated troponin I (cTnI) was seen in up to 15% of those undergoing angiography for suspected coronary artery disease. Cardiac troponin I could be elevated in a number of conditions and could reflect myonecrosis, which is related to different pathology. Degeneration and death of cardiomyocytes contribute to the genesis of postoperative outcomes in patients with aortic valve stenosis (AS). **Aim of the study:** Determination and correlation of cTnI values with clinical and echocardiographic parameters in patients with severe AS before and after aortic valve replacement. We studied whether the ongoing myocyte damage in AS can be detected from circulating cardiac troponin I (cTnI) concentrations in patients without systolic dysfunction. **Methodology:** cTnI were measured in patients with isolated form of AS, before and a month after aortic valve replacement (AVR). Clinical parameters used were mean age, heart rhythm, and NYHA class. Measured and analyzed were the following: end-diastolic (EDD), end-systolic (ESD) diameters of left ventricle (LV) and wall dimensions of LV. End-diastolic and end-systolic volumens of LV, ejection frunction (EF), shortening fruction, LV mass, mean trans-aortic gradient (MnGr) and aortic valve area (AVA) were calculating. **Results:** In the study group were 28 patents (22 male and 6 female, mean age was 53 ± 12 years) with severe AS (MnGr 58 ± 23mmHg and AVA $0,8\pm0,2$cm2) and good systolic function ($56\%\pm15\%$). All patients had good postoperative recovery. All patients except one, were in sinus rhythm. It was predominantly present NYHA class II (64%).The cTnI was elevated before and after operation but significantly elevated before operation ($0,38\pm0,5$ vs. $0,19\pm0,2$. $p<0,05$). Moderate elevation of basal cTnI was present in up to 50% and mild in 29% of patients. According to clinical and echocardiographic parameters statistically significant correlation among cTnI, AVA ($p<0,001$) and EF ($p<0,004$) was found. **Conclusion:** Detectable circulating cTnI is not uncommon in AS and shows moderate associations between the increased pressure overload, LV hypertrophy and myocyte damage. We showed significant correlation among basic levels of cTnI, AVA, EF and basal elevation of cTnI in the majority of patients which tended to decrease after AVR. These points could help us to make special attention in clinical decisions in patients who have severe aortic stenosis without knowledge's of angiography status and were ejection frunction which is still not impaire.

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The effect of aortic valve replacement on B type BNP in patients with isolated form of severe aortic stenosis and not impaired systolic function

A. Nikolic[1], **LJ Jovovic** , M Vukovic, T Babic, M Balevic, S Tomic, D Brunner.
[1]Cardiovascular Institute Dedinje [2]Cardiovascular Institute Dedinje [3]Cardiovascular Institute Dedinje [4]Cardiovascular Institute Dedinje [5]Cardiovascular Institute Dedinje [6]Cardiovascular Institute Dedinje [7]Interlight laboratory

Introduction: The B type BNP is an excellent diagnostic and biohumoral indicators in cardiac disease, especially in heart failure patients. Increased plasma concentration of natriuretic peptides has been demonstrated to be associated with increased pressure and left ventricular (LV) hypertrophy. **Aim of the study:** Determination and correlation values of B type BNP with clinical and echocardiographic parameters in patients with severe AS before and after aortic valve replacement. **Methodology:** B type BNP was measured in patients with isolated form of AS, before and a month after operation. Following clinical parameters were used: mean age, heart rhythm and NYHA class. Measured and analyzed were end-diastolic (EDD), end-systolic (ESD) dimensions of left ventricle (LV), left atrium and wall dimensions and calculating ejection frunction (EF), shortening fruction, LV mass, mean trans-aortic gradient (MnGr) and aortic valve area (AVA). **Result:** In the study group were 28 patients (22 were male and 6 were female, mean age was 53 ± 12 years) with severe AS (MnGr 58 ±23mmHg and AVA $0,8\pm0,2$cm2) and good systolic function ($56\%\pm15\%$). All patients except one were in sinus rhythm. It was predominantly present NYHA class II (64%). All patients had good postoperative recovery. Value of B type BNP was elevated before and after operation (tended to decrease for more then 50% from beginning value) but significantly elevated before operation (270 ± 327 vs. 158 ± 141, $p<0,05$). Before and after operation level of B type BNP was correlated statistically significant with EDD, ESD, MnGr, AVA, FS ($p< 0.001$) and with NYHA class ($p<0.0001$) **Conclusion:** In patients with severe aortic stenosis elevation before and fast decreases of B type BNP level after aortic valve replacement correlate with good postoperative prognosis.

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Using of arterial graft (LIMA) in prediction of frequent occurrences of pericardial effusion after CABG

A. Nikolic[1], **S Tomic** , LJ Jovovic, M Vukovic, LJ Trkulja, M Zlatanovic, B Djukanovic.
[1]Cardiovasculare Institute Dedinje [2]Cardiovasculare Institute Dedinje [3]Cardiovasculare Institute Dedinje [4]Cardiovasculare Institute Dedinje [5]Cardiovasculare Institute Dedinje [6]Cardiovasculare Institute Dedinje [7]Cardiovasculare Institute Dedinje

Introduction: The left internal mammary artery (LIMA) was used very often for coronary artery bypass grafting (CABG). During heart surgery technical preparing of LIMA graft could be reason for mediastinal bleeding and pericardial effusion. **Methodology:** After baypass surgery we separated patients in two study groups (patients with venous or arterial grafts on left anterior descedenting artery (LAD)). First group with venous graft on LAD included 1468 patients and second group with arterial graft (LIMA) on LAD included 461 patients (pts.) and for other native artery stenosis venous grafts were used. Both groups were compared due to occurrences of pericardial effusion, which was determined fifth day after operation by echocardiography. **Results:** In the first group 541 pts. (75,7%) and in the second group 174 pts. (24,3%) did not have pericardial effusion. In the first group 927 pts. (76.4%) and in the second 287 pts (23,6%) had pericardial effusion. There were no differences in occurrences of pericardial effusion between these two groups and no significant differences among patients in the each individual group. **Conclusion:** In the literature we can find data which support potential risk of more frequent occurrences of pericardial effusion during technical preparing of LIMA graft (mediastinal bleeding or pleura opening) but new surgical experiences and better techniques change first opinion and according to that there were no differences in occurrences of pericardial effusion due to grafts type.

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Prolactin inhibition improves clinical outcome in peripartum cardiomyopathy patients presenting with subsequent pregnancy

O. Forster[1], D Hilfiker-Kleiner[2], AA Ansari[3], JB Sundstrom[3], W Tshani[1], A Yip[1], A Becker[1], K Sliwa[1]. *[1]Division of Cardiology, Chris Hani Baragwanath Hospital Soweto, University of the Witwatersrand Johannesburg, South Africa [2]Medizinische Hochschule Hannover, Molecular Cardiology, Hannover, Germany [3]Emory University School of Medicine, Department of Pathology and Laboratory Medicine, Atlanta, USA*

Purpose: Peripartum Cardiomyopathy (PPCM) is characterized by heart failure occurring in women between 1 month ante- and 5 months postpartum. Postpartum prolactin receptor activation in STAT3 knock-out mice results in cathepsin D facilitated cleavage of 24 kDa prolactin into 16 and 8 kDa proteins. In vitro 16 kDa prolactin inhibited endothelial cell proliferation and increased fibroblast proliferation. STAT3-deficient female mice showed increased cardiac apoptosis, reduced cardiac function and survival postpartum. Bromocriptine prevented PPCM in these mice. **Methods:** Since PPCM occurs in previously healthy women who cannot be identified beforehand, we enrolled patients who had recovered from a previous episode of PPCM and presented with a subsequent pregnancy. Echocardiography was performed predelivery, within hours postdelivery and 3 months postdelivery. Patients were on standard heart failure therapy and received in addition bromocriptine 2.5 mg bd. immediately after giving birth and subsequently for 2 months postdelivery. Data were compared to patients who received standard heart failure treatment only. **Results:** All except 1 patient were NYHAFC I at onset of subsequent pregnancy and remained asymptomatic until delivery. One month postpartum a significant decrease of 10% in ejection fraction (EF) was observed in all but 1 patient on standard therapy. At 3 months postpartum, 2 of the 6 patients on standard therapy died due to heart failure, with no improvement in EF in the remaining patients. All patients in the bromocriptine group maintained EF, none died. While differences in EF between groups were non-significant before and immediately postdelivery, significant differences ($p=0.0069$) were found between patients on standard therapy (25.5 ± 5.5) and those with additional bromocriptine (48.8 ± 11.0) 3 months postdelivery. **Conclusions:** The results obtained by the addition of bromocriptine to standard heart failure treatment in this study are encouraging. Bromocriptine may represent a novel therapeutic approach in the treatment of PPCM, but data need to be considered as preliminary and need to be confirmed in a larger cohort of patients.

ADDITION OF BROMOCRIPTINE 4 HOURS POST-DELIVERY TO STANDARD HEART FAILURE THERAPY IN KNOWN PPCM PRESENTING WITH SUBSEQUENT PREGNANCY

Left ventricular EF (%)	Standard therapy (n=6)	Standard therapy + bromocriptine (n=10)	p-value
Baseline	44.4 ± 11.2	51.1 ± 13.2	0.32
Post-delivery	36.4 ± 17.4	43.1 ± 12.2	0.42
Follow-up	25.5 ± 5.5	55.5 ± 5.4	<0.0001

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T-cell mediated autoimmune reaction in peripartum cardiomyopathy might be reflected by activity of pro-inflammatory cytokines

O. Forster[1], AA Ansari[2], JB Sundstrom[2], W Tshani[1], A Becker[1], K Sliwa[1]. *[1]Division of Cardiology, Chris Hani Baragwanath Hospital Soweto, University of the Witwatersrand Johannesburg, South Africa [2]Emory University School of Medicine, Department of Pathology and Laboratory Medicine, Atlanta, USA*

Purpose: Peripartum Cardiomyopathy (PPCM) is characterized by left ventricular failure occurring in women between 1 month antepartum and 5 months postpartum. The aetiology of PPCM is unknown. **Methods:** To identify molecular pathways involved in the pathogenesis of

PPCM, we measured levels of the Th1-like pro-inflammatory cytokines interferon-gamma (IFN-gamma), interleukin-1 β (IL-1 β), interleukin-6 (IL-6), tumor necrosis factor alpha (TNF-alpha) and C-reactive protein in PPCM patients at baseline and after 6 months **Results:** Thirty-eight out of 43 patients completed the follow-up period of six months - three patients had died and two were unavailable. No patients had concomitant inflammatory disease. Mean white cell count at presentation was 6.9±3.6 x109/L. Mean heart rate was 99.7±19 b.p.m., systolic blood pressure was 113.4±20.0 mmHg and diastolic blood pressure was 75.6±13.4 mmHg. Median left ventricular ejection fraction among all patients was 29.5% [13–39], LVESD of 4.9 mm [3.6–6.3] and LVEDD of 5.6 mm [4.3–7.3]. Median baseline levels of all pro-inflammatory markers were significantly higher among than controls. While we were unable to detect significant differences of these markers between improvers and non-improvers at baseline, the kinetics over time revealed a significant reduction of median IFN-gamma levels among improvers (P=0.0181) within 6 months. **Conclusions:** The significant kinetics of IFN-gamma levels between improvers and non-improvers are likely to reflect an ongoing T-cell mediated autoimmune response and insult to the cardiac muscle of these PPCM patients, resulting in failure to improve left ventricular function.

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ERa is expressed in cardiac c-kit+ cells and supports self-renewal after cardiac ischemic injury in rat

M. Brinckmann[1], M. Timm[1], E. Kaschina[1], W. Altarche-Xifró[1], A. Grzesiak[1], C. Curato[1], T. Unger[1], **J. Li[1]**. *[1]Center for Cardiovascular Research (CCR)/Institute of Pharmacology, Charité – University Medicine Berlin, Germany*

Previous studies suggest a protective role of estrodiol in cardiac ischemic injury although the mechanisms underlying this cardioprotection have not yet been clearly defined. Estradiol exerts its actions through the activation of two estrogen receptors (ER): ERa and ERb. We assessed the regulation of cardiac ERa in response to ischemic injury in rat. Seven days after myocardial infarction, Western blot analysis revealed that cardiac ERa was upregulated. Double immuno-fluorescence staining showed that ERa was mainly detected in BrdU incorporating nuclei of new Sca-1+ cells, accumulating in peri-infarct zone. Further, we isolated the c-kit+ cell population from rat infarcted hearts by modified MACS technology and FACS sorting. These ex vivo cardiac c-kit+ cells expressed sca-1/ERa and maintained a stable phenotype under in vitro conditions for more than 18 months after their isolation. Moreover, real-time PCR analysis showed marked upregulation of genes encoding transcription factors implicated in the cardiogenic fate decision of mesodermal cells (GATA-4, Notch-2) and genes required for cell self-renewal and survival (Tbx-3, c-Myc, Akt) in these ex vivo cardiac c-kit+ cells (vs. c-kit- cells). In undifferentiated rat embryo myoblasts (H9C2), which are characterized by their diffentiation potential into myocyte-like cells and predominant ERa expression, 17b-estrodiol (E2) treatment supported self-renewal. In addition, E2 and ERa agonist (PPT) induced Tbx-3, c-Myc and Akt but suppressed GATA-4 and Notch-2 gene expression. By contrast, estrogen receptor blocker ICI 182780 abolished the in vitro effects of E2. The present findings demonstrate that ERa may exert its cardioprotective action through supporting self-renewal of cardiac c-kit+ cells in response to cardiac ischemic injury.

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Time Course Pattern of Immunoglobulin M in HIV Positive and HIV Negative Peripartum Cardiomyopathy Patients

O. Forster[1], AA Ansari[2], JB Sundstrom[2], W Tshani[1], MJ Nel[3], A Becker[1], K Sliwa[1]. *[1]Division of Cardiology, Chris Hani Baragwanath Hospital Soweto, University of the Witwatersrand Johannesburg, South Africa [2]Emory University School of Medicine, Department of Pathology and Laboratory Medicine, Atlanta, USA [3]Department of Laboratory Medicine, University of the Witwatersrand, Johannesburg, South Africa*

Background: Peripartum Cardiomyopathy (PPCM) mainly occurs in developing countries. In addition to PPCM, many patients are HIV positive. An infectious cause of PPCM has been discussed. We studied the time course pattern of immunoglobulin M (IgM) in this population. **Methods:** Single centre prospective study of 45 patients with newly diagnosed PPCM. Clinical assessment, echocardiography and blood analysis were done at baseline and after 6 months of treatment. All patients received standard therapy with carvedilol, perindopril and diuretics. **Results:** 5 patients died and 1 was not available for follow-up. In the overall group of PPCM patients baseline IgM (reference interval 0.4–2.3g/l) averaged at 1.95g/l and decreased insignificantly (p=0.76) to 1.88g/l after 6 months of treatment. HIV positive PPCM patients (n=14) presented with a significantly (p=0.03) higher IgM at baseline (2.4g/l) compared to 1.7g/l in HIV negative PPCM patients (n=31). After 6 months of treatment IgM had decreased insignificantly to 1.68g/l in HIV negative PPCM patients (p=0.72) and to 2.3g/l in HIV positive patients. Difference in IgM levels remained significant (p=0.046) between HIV positive (2.33g/l) and HIV negative (1.68g/l) PPCM patients. **Conclusions:** 1. IgM levels of HIV positive PPCM patients are elevated at baseline and decrease insignificantly over 6 months of treatment. 2. IgM levels of HIV negative PPCM patients are within normal range 3. HIV positive PPCM patients have significantly higher IgM levels than HIV negative PPCM patients.

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acute coronary syndromes in black south african patients with human immunodeficiency virus infection: the clinical and angiographic features

A.C Becker[1], K Sliwa[1], S Stewart[1], E Libhaber[1], AR Essop[1], **MR Essop[1]**. *[1]Department of Cardiology, Chris Hani Baragwanath Hospital [2]Department of Cardiology, Chris Hani Baragwanath Hospital [3]Department of Cardiology, Chris Hani Baragwanath Hospital [4]Department of Cardiology, Chris Hani Baragwanath Hospital [5]Department of Cardiology, Chris Hani Baragwanath Hospital [6]Department of Cardiology, Chris Hani Baragwanath Hospital*

Background: There is increasing evidence that HIV infected patients have a greater risk of acute coronary events possibly due to the disease process itself as well as the treatment. The clinical and angiographic features in a treatment naive group of HIV positive patients have not been defined previously. **Methods:** Prospective single centre study at CH Baragwanath Hospital, Soweto, an area of high HIV prevalence with low highly active anti-retroviral treatment (HAART) usage, comparing the clinical and angiographic features of HIV positive and negative patients presenting with acute coronary syndromes (ACS). **Results:** From March 2004 to September 2007, 26 HIV positive patients were identified with ACS and compared to 26 consecutive HIV negative ACS patients. None of the HIV positive patients were on HAART therapy. During this time, 6(23%) of the HIV positive patients died and 3(12%) HIV negative controls died. **Conclusion:** Treatment naive HIV positive patients with ACS are younger and have fewer traditional coronary risk factors than HIV negative patients. HIV positive patients have more single vessel disease. The angiographic appearance of thrombus in an otherwise normal appearing artery and large coronary thrombus burden may imply a primary abnormality of coagulation or endothelial damage in the pathogenesis of ACS in these patients.

	HIV+ve (n=26)	HIV -ve (n=26)	p value
Mean Age (y):	42+/-7	54+/-12	0.001
Male/female n(%):	17/9(65/35)	16/10(62/38)	N/S
Coronary risk factors n(%):			
Smoking	18(69)	9(35)	0.03
Diabetes Mellitus	1(4)	4(15)	N/S
Hypertension	6(23)	20(77)	0.0001
Total cholesterol (mmol/l)	3.7+/-1.1	4.8+/-1.4	0.001
LDL cholesterol (mmol/l)	2.2+/-1.0	3.2+/-1.0	0.003
HDL cholesterol (mmol/l)	0.8+/-0.3	1.1+/-0.4	0.0005
Triglycerides (mmol/l)	1.4+/-0.8	1.2+/-0.4	N/S
BMI (kg/m2)	25+/-5	29+/- 6	0.03
Other coronary risk factors	2(8)	12(46)	0.002
Angiographic findings n(%):	26	26	
Single vessel disease	20(77)	13(50)	0.04
Mean no. of vessels involved	1.3+/-0.6	1.7+/-0.8	0.05
Thrombus in an angiographically normal vessel	7(27)	1(4)	0.02
Large thrombus burden	11(42)	4(15)	0.04

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Heat shock proteins antibody level and associated disease in patients undergoing cardiac operation.

V. Kecskemeti[1], A. Szebeni, Z. Prohaszka, I. Matko, Z. Szabolcs. *[1]Semmelweis University, Department of Pharmacology and Pharmacotherapy [2]Semmelweis University, Department of Pharmacology and Pharmacotherapy [3]Semmelweis University, III.Department of Internal Medicine [4]Semmelweis University, Department of Cardiovascular Surgery*

Backgroud: Type 1 diabetes mellitus (DM) is an immun mediated disease in which 60 kDa heat shock proteins (hsps) may be involved in the development of the disease. Hsps have been found to provide increased protection during ischemia-reperfusion as well as decreased the incidence of postoperative atrial fibrillation. Aim of this study was to investigate the level of hsp-60 and hsp-65 antibody in the sinus coronarius and pericardium of patients undergoing cardiac surgery and to find the relationship between the hsp antibody levels and the different associated disease (DM, atrial fibrillation). **Methods:** The hsp60. and hsp65-specific antibody levels of sinus coronarius before and after aortic cross-clamping (ACC) and that of pericardial fluid were assessed by ELISA technique during cardiac surgery in patients suffering ischemic, hypertonic heart disease (n=32). Among the patients 13 belongs to Type 2 DM group, 3 were Type 1 diabetic and 13 had atrial fibrillation. The electrophysiological characteristics of right atrial tissue of diabetic and non diabetic patients were analyzed by standard microelectrode technique. **Results:** Both hsp 60- and hsp 65-antibody levels decreased in the sinus coronarius after ACC. There were not any relationships between hsp antibody levels and the original disease. We have not found any correlation between hsp-antibody levels in pericardial fluid and the diabetic disease, however in the case of atrial fibrillation nearly in 90% of the patients the pericardial hsp-antibody levels were significantly increased (p<0.01). Comparing the parameters of atrial action potential (AP) of diabetic with those of non-diabetic patients the significant prolongation of AP duration can be observed in diabetic atrial tissue, similarly to the data from different diabetic mammalian heart preparations. **Conclusion:** This observation suggests a relationship between the decrease of 60kDa hsps antibody and cardiac injury, and a close correlation between the increase of pericardial hsp antibody level and atrial fibrillation. The study was supported by Grant 578/2006 of Ministry of Health of Hungary.

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Circadian Rhythm and Risk Factors in Isolated Nocturnal Hypertension

G. Simonyi[1], RJ Bedros[1], M Medvegy[2]. *[1]Ferenc Flor Hospital, 5th Dept. of Internal Medicine, Hypertension and Lipid Centre [2]National Health Centre*

Introduction The abnormal circadian blood pressure profile associated with increased risk of cerebrovascular complications. The term of isolated nocturnal hypertension was described by Yan et all in 2007. This special type of hypertension we can diagnosed only with 24-hour ambulatory blood pressure monitoring and it might be associated with target organ damage. Our aim was to investigate the distribution of circadian rhythm and associated risk factors of isolated nocturnal hypertension. **Patients and methods** We selected the 621 patients form our ambulatory blood pressure database. In line with published diagnostic threshold of ambulatory normotension, nocturnal hypertension was defined as nighttime blood pressure ≥120 mm Hg systolic or ≥70 mm Hg diastolic. Then we exclude patients with high daytime ambulatory blood pressure (ABP) ≥135 systolic or ≥85 mm Hg diastolic. The diurnal index (DI) categories: extreme dipper ≥20%, normal = 10–20%, non-dipper ≤ 10% and the subcategory reverse dipper ≤ 0%. **Results** The remaining 285 patients: age 49.29±9.19 year, men 51.48%. The 24-hour day systolic blood ABP was 124.93±6.43 mm Hg, the diastolic was 88.66±7.89 mm Hg. The night time systolic ABP was 124.08±10.28 mm Hg and the diastolic was 70.34±7.99 mmHg, the daytime systolic ABP was 125.04±6.11 mm Hg and the diastolic was 73.65±8.33 mm Hg. We found 0% extreme dipper, 7.02% normal dipper and 92.98% non-dipper. In the

non-dipper category we found 43.4% reverse dipper. The pulse was 69.51±10.06 beat/min. The body mass index (BMI) was 28.58±4.54 kg/m^2. The waist circumference was 103.73±12.63 centimeters, the hip circumference was 106.51±9.69 centimeters. The total cholesterol level was 6.75±1.34 mmol/l, the triglycerides level 2.63±1.21 mmol/l, the LDL-cholesterol level 4.07±1.18 and the HDL-cholesterol level 1.09±0.31 mmol/l. The blood glucose level was 5.27±1.36 mmol/l. In patients with isolated nocturnal hypertension we found significant positive correlations between 24-hour diastolic BP and BMI ($p<0.001$) and waist circumference ($p<0.0001$) and hip circumference ($p<0.001$) and blood glucose level ($p<0.05$) and triglycerides level ($p<0,05$). The 24-hour pulse correlated inversely with HDL- cholesterol level ($p<0.05$). **Conclusions** In cases isolated nocturnal hypertension we found more risk factors. Patients had high BMI (overweight), waist circumferences, elevated serum lipid levels and 24-hour diastolic BP. Our findings suggested that when we found isolated nocturnal hypertension we have identified risk factors. Further studies necessary to determine the prognostic significance of isolated nocturnal hypertension.

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Prevalence of Sleep Related Breathing Disorders in Patients with Chronic Heart failure and their Improvement with cardiac resynchronisation therapy

K. Seidl[1], M. Strauß[1], T. Kleemann[1], T. Becker[1]. [1]*Heart Center Ludwigshafen*

Background: About 40–50% of patients (pts) with advanced heart failure (CHF) present with sleep related breathing disorders (SRBD) primarily they present with central sleep apnoa syndrome. Aim of the study was 1) to assess, how many pts with CHF have additionally a SRBD. 2) to evaluate the effecf of cardiac resynchronisation therapy (CRT) on SRBD in these pts. **Methods:** Overnight polysomnography was performed in 55 pts. with CHF and left bundle branch block (41 male; 65 +/- 11 years, reduced ejection fraction (26 +/- 6%) and NYHA III). If the apnea/hypopnea index (AHI) was > 10 during baseline polysomnography "with CRT off", a second overnight polysomnography was performed "with CRT on". **Results:** 21 pts (38%) had a AHI > 10, in 15 pts (71%) a central and in 6 pts (29%) a obstructive form of SRBD was present at baseline. Compared to baseline values AHI was significantly improved from 49 +/- 35 to 14 +/- 10 ($p = 0.01$), whereas the noctural minimal oxygen saturation significantly increased from 85 +/- 6% to 91 +/- 5% ($p = 0.02$) with "CRT on". The most pronounced improvement was seen in pts with a noctural bradycardia (< 60 bpm). No improvement was seen in pts with an obstructive form of SRBD. **Conclusion:** 1) SRBD was observed in about 1/3 of pts with advanced CHF. 2/3 had a central form of SRBD. 2) CRT significantly improves AHI and noctural minimal oxygen saturation in pts with CHF and "CRT on".

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Prevalence of Complete Electrical Pulmonary Vein Isolation Using an Anatomically Guided Approach Assessed by a Novel High Density Circumferential Mapping Catheter

K. Seidl[1], T Becker[1], T Kleemann[1], M Strauß[1]. [1]*Heart Center Ludwigshafen*

The purpose of this prospective study was: 1) to assess the completeness of electrical isolation of the PV using the anatomical approach and 2) to assess the usefulness, safety and feasibility of a novel new high-density mapping catheter (HD Mesh Mapper; BARD Electrophysiology) to evaluate the completeness of electrical isolation.I **Method:** In 17 patiens with AF circumferential PV isolation was performed using the anatomical approach. Thereafter complete electrical isolation of the ipsilateral pulmonary veins (PVs) was assessed using a novel high density mapping catheter with a 32-poles. If PV conduction persisted, circumferential mapping guided isolation of the ipsilateral PVs was performed. Target sites for ablation were identified by assessing sites of earliest PV activity. **Results:** At the completion of anatomical left atrial circumferential ablation (LACA), complete electrical isolation was achieved in 41% of the right-sided PV and in 35% of the left sided PVs. Total additional time to disconnect electrically all left PVs was 23 +/- 13 min, and 27 +/- 17 min for the right PVs. Overall complete isolation of all PV was achieved in 88% of patients. During 12 +/- 7 months 71% of patients were in sinus rhythm. New left atrial tachycardia was observed in 23%. **Conclusion:** Complete electrical isolation of the PVs was achieved in less than 50% of patients using the anatomical approach. Incomplete lines were responsible for new atrial macro-reentry. Therefore every effort should be made to achieve a complete electrical PV isolation. The high density mapping catheter allowed a stable and segmental longitudinal mapping of the PV and was helpful to identify and close gaps in the ablation line.

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Interraction in changes of an endothelium status and clinical current in patients with CHF on a background of therapy ACE inhibitors

M. Sitnikova[1], T. Maximova[2], C. Kchmelnitskaya[2]. [1]*Almazov Heart, Blood and Endocrinology Centre* [2]*Pavlov's Medical Institute*

Objectives. To assess the changes of an endothelium function depending on clinical current in the patients with chronic heart failure (HF), who were treated with ACE inhibitors. **Methods.** In 47 male (EFLV≤40%) with HF class II-IV (NYHA) during 6 month duration with ACE inhibitors were studied parametres of endothelium function: as contents in blood of circulating endotheliocytes (EC), levels of tissues activator of plasminogen (TAP) type 1, Willebrands factor, interleucin-8 (IL-8), endothelium dependent vasodilatation (EDV) of brachial arteria. The changers of these parameters were analysed depending on their initial size, and also - from clinical current of chronic heart failure. **Results.** In 22 patients (the group 1), who were treated with ACE inhibitors was marked the reduction of functional class of HF, there were no adverse events (AE) ((hospitalisations due to the destabilisation of heart failure, myocardial infarction, stroke, pulmonary thromboembolia). The 2-nd group included 25 patients, in which the therapy with ACE inhibitors was not resulted in improvement of current of heart failure or the patients with AE. The average age in subgroups, average parameters of an index of weight of a body, amount of previous hospitalisations, functional class of a stable angina, durations of HF sympthoms, EF of left ventricle, distance of the 6-minute walking test, levels of heart rate and blood preassure were not differs. The changes of EDV did not correlate with clinical current CHF on a background of therapy ACE inhibitors in both groups and higher parameters EDV on a background of therapy by ACE inhibitors were achieved in patients with initially more by high level endothelin-1 ($r=0.54$; $p=0.04$) and lower meanings EDV ($r= -0.31$; $p=0.01$). In 1 group had positive significant changes: decrease of a level EC, IL - 8, Willebrands factor and the contents of Willebrands factor in the 2-nd group was increased significantly. **Conclusion.** 1. The positive influence of therapy by ACE inhibitors on clinical current CHF in patients with CAD associates with decrease protrombogenical (level EC, Willebrands factor) and proinflammatory (IL - 8) of properties of endothelium more, than with improvement of its vasoactive function. 2. The degree of positive changes EDV on a background of therapy ACE inhibitors depends on an initial endothelium function.

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Locally delivered Tetradecylthioacetic acid (TTA) reduces inflammation and collagen formation after coronary balloon injury in a porcine model

RP Reidar Pettersen[1], MS Mohamed Salem[1], SR Svein Rotevatn[1], KK Karel Kuiper[1], TL Terje Larsen[2], PB Pavol Bohov[2], RB Rolf Berge[2], JEN Jan Erik Nordrehaug[1]. [1]*HAUKELAND UNIVERSITY HOSPITAL, DEPARTMENT OF HEART DISEASE, 5021 BERGEN, NORWAY* [2]*HAUKELAND UNIVERSITY HOSPITAL, DEPARTMENT OF CLINICAL BIOCHEMISTRY, 5021 BERGEN, NORWAY*

Purpose. The sulfur containing Tetradecylthioacetic acid (TTA) has potent antioxidant and anti-inflammatory properties. TTA has been shown to reduce negative remodeling after balloon angioplasty injury after a single bolus local delivery. We tested the hypothesis that local drug delivery of TTA inhibits vascular inflammation, cell proliferation, and collagen deposition after balloon angioplasty as possible mechanisms for reducing constrictive remodeling and neointimal formation. **Methods.** Thirty four domestic pigs undergoing percutaneous balloon injury were randomly assigned in separate experiments to either TTA (9 mmol solution) or placebo delivered via a local drug delivery balloon into the wall of the right (RCA) and left circumflex (LCX) coronary arteries. The pigs were sacrificed after four weeks. In 18 pigs RCA with surrounding tissue was isolated and perfusion fixed with formaldehyde, while LCX was immediately frozen in liquid nitrogen and stored at -80 degrees C. Collagen density was assessed by histomorphometric analysis using picrosirius red staining in adventitia, media, and intima. Inflammatory cytokines; interleukins (IL2, IL6), gamma interferon (IFNG), and tumour necrosis factor alpha (TNFα) were assessed, in the vessel wall, using immunohistochemistry analysis. Lipid fractions in the arterial wall were extracted and analyzed by gas chromatography. The anti-inflammatory fatty acid index was calculated as C20:3n-6+C20:5n-3+C22.:5n-3+C22.n-6/ C20:4n-6. In16 pigs, BrDU was administered before and during 7 days after the procedure. Coronary arteries were prepared for immunohistochemistry using antibodies against α- actin and BrDU. **Results.** Collagen particle count was significantly lower in the vessel wall of TTA-treated animals ($n=9$) compared to placebo ($n=9$) (177±11n/area vs 225±13n/area, $p=0.007$). IL2 concentration was significantly lower in the coronary wall of the TTA group than in placebo group (1.6 pg/ml (1.4–1.6) vs 1.7 pg/ml (1.6–5.4), $p=0.01$). IL6, IFNG, and TNFα levels were not significantly different. The anti-inflammatory index was increased with TTA compared to placebo, 46.28±12.06 vs 34.66±4.54, $p=0.025$. This was due to reduced C20:4n-6, the precursor for prostaglandins. Both EPA ($p=0.002$) and DHA ($p=0.034$) were significantly increased. Analysis of cell proliferation markers did not show differences between groups, neither in α-actin (TTA: 136±16μm2, placebo: 101±10μm2, p=NS), nor in BrDU (TTA: 31±3μm2, placebo: 29±3μm2, p=NS). **Conclusions.** Local delivery of TTA reduced the inflammatory response after coronary overstretch injury for at least 4 weeks and was associated with significant inhibition of collagen accumulation, but had no effect on cell proliferation.

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The Age-BNP Survival Model: Prediction of survival in old (>75 years) patients with heart failure

E. Shlyakhto[1], M. Sitnikova[1], T. Lelyavina[1]. [1]*Almazov Heart, Blood and Endocrinology Centre*

Aim. The purpose of the study was to improve the prognosis of patients with heart failure, and to develop and validate the Age-BNP Survival Model to predict 2,5-years survival in old heart failure patients. **Methods.** In first group 104 CHF patients > 75 years old (80±0,4 y, 81% men) were included. Following parameters were studied: data of medical history, physical examination, 6-min walking test, chest X-ray, ECG, echocardiography, blood test (including BNP), quality of life was assessed using MLHFQ (in all 150 variables). All patients were followed up for a median period of 2,5 years. Cox proportional hazards model was used to assess the association of variables with mortality. Than we used the Age-BNP Survival Model to assess survival in second group of 54 patients > 75 years old (78±0,7 y, 75% men) with NYHA class II to IV. **Results.** After 2,5 years follow-up 41 deaths occurred in first group. Age and plasma BNP level were independently related to survival in multivariate analysis (Cox). Age-BNP Survival mathematical model is defined in the following way: S=e(0,143*Â+0,001*Ê)*Í(t), where S is a survival probability, B is the age in years, K – plasma BNP level, H(t) is basic risk function evaluated at time t. Knowing patient's age and his plasma BNP level we can, with use of Age-BNP Survival Model, define his 2,5-year prognosis (survival probability) since day of BNP blood analysis. During 2,5 years follow-up 27 death occurred in second group. According Age-BNP Survival Model 75–77,5 years old patients with 100–1500 pg/ml plasma BNP level had from 85% to 50% survival probability for 2,5 years and they are still alive. Those with 1501–4000 pg/ml plasma BNP level had from 50% to 20% survival probability for 2,5 years,

30% of them died. 82,5–87,5 years old patients with 100–1000 pg/ml plasma BNP level had from 60% to 25% survival probability for 2,5, 40% of them died. Those with 1001–4000 pg/ml plasma BNP level had from 25% to 0% survival probability for 2,5 years, 80% of them died. **Conclusion.** The Age-BNP Survival Model provides an month accurate estimate of 2,5 years survival in old (>75 years) heart failure patients with easily obtained parameters: age and plasma BNP level.

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Interaction between the ACE polymorphism genes (insertion/deletion) and the particular clinical features of congestive heart failure, structural and functional indexes of the heart and mortality

M. Sitnikova[1], S. Ivanov[1], O. Krasnova[1], E. Shlyakhto[1]. [1]*Almazov Heart, Blood and Endocrinology Centre*

Aim: We designed this study to analyze the particular clinical features of congestive heart failure (CHF), structural and functional indexes and mortality during 5 years of follow-up according to ACE I/D gene polymorphism. **Methods:** We were studied 158 patients with CHF II-IV class (NYHA) during 5 years of follow-up (men-148, women-10, mean age 58± 9, mean left ventricle ejection fraction (LVEF) 36± 0,1). 144 patients had coronary heart disease, 10 patients had dilatation cardiomyopathy. Structural and functional indexes of the heart, particular clinical features of CHF and frequency of mortality were analyzed. All the patients received standard therapy of CHF the time of follow-up. They were divided into 3 groups according to polymorphism genes ACE (insertion/deletion). ACE genotype was determined by polymerase chain reaction (PCR) using special primers. All patient underwented echocardiography and LV EF (Simpson) was evaluated. **Results:** 32 (20,2%) patients were homozygous for the I-allele, 79(50%) had the I and D allele (ID) and 47(29,8%) were homozygous for the D-allele. The group of the patients with DD-genotype was authentically younger (55,4±9,6 vs 60,4±9,3 correspondently; p=0,01) and the heart rate was authentically lower (75,2±14,9 vs 79,8±15,1 correspondently; p=0,05) than in patients homozygous for the I-allele. There was no difference in particular clinical feature, structural and functional indexes of the heart among genotypes. 39(25%) patients died during 5 years. More patients with ID and DD- genotypes died (28, 3% and 31, 3% correspondently) comparing to those homozygous for the I-allele (9,1% died). Patients who died and who stayed alive had authentically differences only for level of systolic blood pressure (syst.BP) (121±17 and 131±23 correspondently; p=0,03) and LV EF (0,32±0, 09 and 0,37±0,09 correspondently; p=0,03). When we analyzed clinic and functional parameters of living and died patients with CHF we revealed that the frequency of I-allele of living patients was more prevalent then in patients who died (72% vs 50%, p<0,05). **Conclusions:** 1. The patient's survival with DD polymorphism genes ACE was three times worse during 5 years of follow-up then in those homozygous for I-allele; despite of younger age, lower heart rate and severity of CHF. 2. The patients with CHF who survived during 5 years of follow-up had more higher syst.BP, LV EF and rate of I-allele gene ACE.

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IMPROVEMENT IN SIX-MINUTE WALK TEST PERFORMANCE AFTER A SINGLE DOSE OF SILDENAFIL IN CHRONIC HEART FAILURE PATIENTS

J. Curotto Grasiosi[1], A. Paragano[1], M. Pelliza[1], D. Cordero[1], R. Machado[1], A. Abdala[1], G. Bertelle[1], R. Perez[1], C. Magallanes[1], R. Esper[1]. [1]*HOSPITAL MILITAR CENTRAL*

Background: according to our experience, in ambulatory patients (pts) with chronic heart failure (CHF) and functional class NYHA II-III, the prescription of sildenafil showed high level of safety and few adverse effects. **Aims:** the current study was designed to assess whether the administration of sildenafil in CHF pts NYHA class II-III, improves the functional capacity compared to placebo. **Material and methods:** we selected at random 70 CHF pts of any etiology, under intensive follow up and optimal treatment. All showed a left ventricular diastolic diameter (LVDD) >55 mm, ejection fraction (EF) <35% and systolic blood pressure (SBP) >90 mmHg. Patients with surgical indication for any cause, aenemic or unable to walk were excluded. They were distributed as follows: placebo group (PG) and sildenafil Group (SG), both included 35 cases. After a first six-minute walk test (6MWT), they were randomly allocated to receive either sildenafil in a single 50 mg oral dose or placebo, and underwent a second 6MWT two hours later. The following variables were collected: SBP, diastolic blood pressure (DBP) and heart rate (HR), before and after first and second 6MWT and the meters walked were recorded after each test. **Results:** group characteristics: PG vs SG, men 74% vs 88%, coronary etiology 71% vs 77%; CFII 37% vs 34% and CFIII 63% vs 66%; Age 68±10 vs 68±12; EF 26.5±7.8 vs 26.5±6.5; LVDD 65±6 vs 66±9, all p=ns. The PG variables vs SG before first walk were: SBP 115±1 vs 115±2 (p=ns), DBP 71±10.5 vs. 68±13 (p=ns) and HR 74±13 vs 64±6 (p< 0,001). After first walk without administration of drugs: SBP 126±20 vs 133±26, DBP 68±11 vs 72±2, and HR 84±2 vs 80±9, all p=ns. Before second walk, after this drugs administration: PG vs SG: SBP 112±14 vs 95±18, (p<0,001), DBP 69±8 vs 57±12 (p<0,001) and HR 73±11 vs 75±10 (p= ns). Finally after second walk: SBP 123±17 vs 115±26 (p<0,05), DBP 65±7 vs 60±12 (p<0,02) and HR 84±13 vs 86±12 (p=ns). Four patients (11%) reported headache in the SG group and none in the PG. No pts experienced any major event. The SG walked 222±69 meters before and 313±76 after administration of drug, difference in meters 91±19. The PG walked 233±67 meters before and 242±67 after administration of drug, difference in meters 9±5 (p<0.0001). **Conclusion:** in patients with CHF NYHA class II–III, under optimal treatment and intensive follow up, sildenafil proved to be safe and it improved the functional capacity compared with placebo.

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SERUM MATRIX METALLOPROTEINASE-9/TISSUE INHIBITOR OF MATRIX METALLOPROTEINASE-1 AND LEFT VENRICLE PERFORMANCE IN PATIENTS WITH AORTIC STENOSIS

N. Goncharova[1], O. Moiseeva[1], G. Aleshina[2], E. Shlykhto[1]. [1]*Federal Centre of Heart, Blood and Endocrinology* [2]*Federal Centre of Heart, Blood and Endocrinology* [3]*Research Institute of Experimental Medicine* [4]*Federal Centre of Heart, Blood and Endocrinology*

Objective: Recent data support the importance of myocyte- extracellular matrix interactions in maintaining systolic function and suggest that fibrosis may contribute to systolic dysfunction by altering this interaction. Metalloproteinases (MMP) are proteolytic enzymes, which decompose the extracellular matrix, influence cardiac remodeling. Evidence exists that deranged ratio MMP/tissue inhibitor MMP (TIMP) can facilitate collagen accumulation in developing hypertrophy. However, little is known about the role of MMPs and TIMP in myocardial remodeling in patients with aortic stenosis. **Design and methods:** 34 patients with severe aortic stenosis were examined (age 60.6±9.7 yrs; mean transvalvular gradient 87±26, 4 mm Hg) before aortic valve replacement (AVR) and six months after it. Left ventricular mass (LVM) was calculated using an automatically validated formula by Devereux et al. (1977). Serum MMP-9 and TIMP-1 were measured by ELISA. **Results:** Concentric LV hypertrophy was observed in 92% patients (LVM index 194.5±51.1 g/m^2, RWT 0.55±0.09). Serum MMP-9 content was in normal range (259.1±124.9 ng/ml; normal range 169–705 ng/ml), but direct correlation was revealed between LVM index and MMP-9 level before AVR (r=0.55; p=0.003). Serum TIMP-1 level was markedly increased (586.8±123.5 ng/ml; normal range 92–116 ng/ml) and had inverse correlation with the LV ejection fraction (r=-0.51; p=0.01). MMP-9/TIMP-1 ratio was shifted towards TIMP-1 abundance (0.45±0.21). LVM index reduction was observed six months after the operation (152.2±33.6 vs. 194.5±51.1 g/m^2; p=0.03). TIMP-1 content decreased after AVR (586.8±123.5 vs. 445.1±151.5 ng/ml; p=0.002). High initial TIMP-1 level was associated with increased LVM after AVR (r=0.45; p=0.04). Increased LVM had inverse correlation with LV ejection fraction after surgery (r=-0.49; p=0.01). **Conclusion:** Exuberant matrix accumulation due to the serum TIMP-1 abundance is one of the reasons of the LV systolic function deterioration and inadequate postoperative LVM regression in patients with aortic stenosis. Serum TIMP-1 could be used as a marker of left ventricle fibrosis in pressure overloaded heart.

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HYPERTRIGLYCERIDEMIA: AN INDEPENDENT PREDICTOR STRONGLY CORRELATED WITH OTHER CARDIOVASCULAR RISK FACTORS?

A. Paragano[1], J. Curotto Grasiosi[1], R. Machado[1], D. Cordero[1], A. Abdala[1], P. Merlo[1], J. Lopez Diez[1], D. Alasia[1], C. Magallanes[1], R. Esper[1]. [1]*HOSPITAL MILITAR CENTRAL*

Background: although triglyceride (TR) levels may play an important role in atherosclerosis, their association with cardiovascular disease (CVD) remains controversial. Even though many studies have demonstrated that elevated serum TR levels are associated with increased risk for CVD, this independent association may not be true due to the interaction with other factors, lipidic or not, which increase the risk for CVD. **Aims:** this report aims to prove that hypertriglyceridemia is a marker connected with other factors that increase the risk for CVD. **Material and Methods:** 823 individuals were recruited (37±8 years, 62% male) without demonstrable CVD and not subject to treatment. Following variables were recorded, age, sex, body mass index (BMI) and in fasting total cholesterol (TC), high and low density lipoproteins (HDL-LDL), serum TR and glycemia (GL). Normal values, in kg/m2 and mg/dl, were accepted according to the standards of the ATPIII and IDF. Statistical analysis: differences between baseline characteristics of participants within each TR category were analyzed using Student's t and chi-square or Fisher's exact tests, depending on the nature of variables. Two-sided P<0.05 was considered statistically significant. **Results:** the study cases were distributed as follows: group 1 (G1) TR>150 made up of 140 individuals (39±9 years, 85% males), and group 2 (G2) TR<150 of 683 individuals (36±8 years, 58% males). Males G1 vs G2 (85% vs 58%, p<0,001). BMI>25 G1 vs G2 (77% vs 46%, p<0,001). Males BMI>25 G1 vs G2 (82% vs 62%, p<0,001). Females BMI>25 G1 vs G2 (48% vs 25%, p<0,03). TC>200 G1 vs G2 (66% vs 31%, p<0,001). Males TC>200 G1 vs G2 (67% vs 34%, p<0,001). Females TC>200 G1 vs G2 (57% vs 28%, p<0,008).HDL<40 in men G1 vs G2 (65% vs 38%, p<0,001). HDL<50 in women G1 vs G2 (57% vs 54%, p=0,82). LDL>130 G1 vs G2 (52% vs 38%, p<0,003). Males LDL>130 G1 vs G2 (54% vs 41%, p<0,02). Females LDL>130 G1 vs G2 (43% vs 34%, p<0,47). GL>100 G1 vs G2 (11% vs 6%, p= 0.067), and no significant differences were found within groups according to genders. **Conclusion:** hypertriglyceridemia, particularly in men, has strongly related to many others risk factors for CVD. Thereby, increased levels of triglycerides might only indicate the presence of other atherogenic factors.

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Right coronary artery morphology by 64-row MDCT in patients with left dominant system.

P. Carrascosa[1], C Capuñay[1], A Deviggiano[1], E Martin Lopez[1], J Vallejos[1], J Carrascosa[1]. [1]*Diagnostico Maipu*

Objective: to evaluate the angiographic appearance of the right coronary artery (RCA) by 64-row MDCT in patients with left-dominant coronary circulation. **Background:** morphology variations on the RCA must not be misdiagnosed as a pathological finding in patients with left-dominant coronary circulation. **Methods:** One hundred consecutive patients with known or suspected coronary artery disease refered for 64-row MDCT coronary angiography were evaluated. MDCT scans were performed with a 64-row CT scanner (Brilliance 64; Philips Medical Systems) and the following parameters: 64x0,625 collimation; 0,67-mm slice thickness; 0,3-mm reconstruction interval; 0.2 pitch; 0.4-sec rotation time; 120 kV; 800

mAs/slice; using80-mL of non-ionic intravenous contrast using a dual-source power injector. Triggered tube-current modulation was used. Patients were pre-medicated with beta-blockers to reduce their heart rate below 60 beats per minute. The coronary arteries were reconstructed and evaluated on a workstation using available cardiac software. A 17-segment coronary model was used for evaluation. **Results:** From the 100 patients, 91 had a right-dominant circulation. In the rest 9 patients with left-dominant coronary circulation, we found 3 different appearances of RCA: 1) hypoplastic RCA (n=2) ; 2) RCA with normal segment 1and hypoplastic segments 2–3 (n=6); 3) RCA with small diameter. The posterior descending left ventricular branch is supplied by the circumflex artery (n=1). **Conclusions:** Variations in RCA appearance must be considered in patients with left-dominant coronary circulation and should not be confused with completely occluded or stenotic vessels.

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Clinical perception of MS vs. Diagnosis according to ATPIII criterion. CARISMA (Characterization and risk analysis of individuals with metabolic syndrome) study group.

G. Cerezo[1], A. Vicario[1], N. Vainstein[1], E. Biasin[1], D. Ricon[2], D. Piskorz[3], I. Nocetti[4], C. Brommer[5], M. Miragaya[5]. *[1]Buenos Aires Society of Cardiology [2]Buenos Aires West Society of Cardiology [3]Rosario Society of Cardiology [4]Neuquen Society of Cardiology [5]Corrientes Society of Cardiology*

Introduction: Metabolic Syndrome prevalence is estimated at 20% of the general population. ATP III and IDF definitions are the most commonly used to diagnose patients. **Objective:** Evaluate correlation between clinical perception for MS diagnose and diagnostic criterion according to ATP III and IDF definitions. **Material and methods:** Cross-sectional, observational and multicentric study. **Researchers:** Cardiologists associated with several federated societies across the country (FAC). Subjects ≥21 years of age, male and female in their first visit. Patients with diabetes mellitus defined according to ADA criterion were excluded. A sample of n=1850 patients belonging to CARISMA study were evaluated. The information was summarized in a chart which includes: backgrounds, reason of visit, vital signs, anthropometry and biochemical information (fasting glucose, total cholesterol, HDL cholesterol and triglycerides). The study's information was centralized in SCBA (Buenos Aires Cardiological Society). **Results:** MS prevalence according to ATP III was 20,54% (380 subjects, age 50.9±7.7 years, 61,3% male) and according to IDF was 49,7% (920 subjects, age 47.6±11.2 years, 67% male). Positive correlation between perception of clinical diagnose and ATP III criterion was 84.7%, and 45% with IDF. Negative correlation was 64% for IDF criterion and 82% for ATP III criterion. Vascular event score measured by Framingham scale in the studied group was: Low risk (<10%) 65%, moderate (10–20%) 22.6%, high (>20%) 15.2%. **Conclusions:** Clinical perception is a useful tool for MS diagnosis. Clinical perception shows greater correlation with ATP III definition than with IDF definition.

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Estrogen-dependent gene expression in human cardiac tissue

G. Kararigas[1–3], E. Becher[1–2], V. Regitz-Zagrosek[1–3]. *[1]Center for Cardiovascular Research, Charité – Universitätsmedizin Berlin [2]Center for Gender in Medicine, Charité – Universitätsmedizin Berlin [3]German Heart Institute Berlin*

Background: Cardiovascular diseases (CVD) are the major cause of morbidity and mortality for both men and women. Although considerable progress has been made in CVD research, little is known about the molecular and cellular aspects of the healthy and diseased heart and vasculature. Sex steroid hormones are believed to play an important role in the development of cardiovascular sex differences. Additionally, the incidence of CVD is relatively low in premenopausal women, while it rises sharply after the menopausal transition. For this reason, it is generally believed that the loss of ovarian steroid hormones at the time of menopause plays an important role in the higher development of heart disease in these women. Transcriptional regulation is a key player in many biological processes. Estrogen, a sex steroid hormone, is involved in a number of biological processes, such as reproduction, development, cell proliferation, differentiation, apoptosis and metabolism, and its transcriptional regulation of several genes has been well established. **Aim:** The study of the effect that estrogen has on the myocardium in terms of the estrogen-dependent gene expression in human heart tissue. **Methods:** Fresh human cardiac tissue from the right atrium of patients undergoing coronary artery bypass, following approval by the ethics committee and the patients' written consent, was cultured in appropriate conditions and stimulated with estrogen. Specific estrogen-target genes were selected and their expression was studied by real-time RT-PCR. **Results:** The selected target genes were successfully amplified and oestrogen-dependent effects were seen in human atrial samples following estrogen stimulation. **Conclusion:** Following the culture of excised human cardiac tissue and its stimulation with estrogen in vitro, we are able to show that estrogen-target genes are regulated also in this multicellular tissue. Therefore, we provide additional evidence that the particular sex steroid hormone has a direct effect on the myocardium. Lastly, one would expect that estrogen regulates the transcription of many more genes than those that are currently known to be under its regulation, mediating both "positive" and "negative" effects through its receptors; thus making it necessary to identify currently unknown estrogen-target genes, which may lead to the discovery of novel therapeutic targets.

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Dobutamine dynamic intraventricular gradient and hypertrophic cardiomyopathy: morphologic and functional evaluation by cardiac magnetic resonance

M. Ferreira[1], P. Donato[1], S. Monteiro[1], T. Pereira[1], R. Martins[1], F. Caseiro-Alves[1], L.A. Providência[1]. *[1]COIMBRA UNIVERSITY HOSPITAL*

Background: The development of a dynamic left intraventricular gradient (IVG) during the performance of dobutamine stress echocardiography (SE) has been described but the pathophysiological significance of this observation is still under investigation. Hypertrophic cardiomyopathy (HC) is a genetic transmitted disorder in which obstruction to LV blood flow can occur at the outflow tract or midventricular level. Cardiac magnetic resonance (CMR) is a non invasive diagnostic technique unrivalled in its ability to assess myocardial architecture, tissue characteristics and function. The aim of this study was to compare left ventricle (LV) by CMR in patients with a dynamic intraventricular gradient (IVG) during the performance of dobutamine SE and patients with primary hypertrophic cardiomyopathy. **Methods:** The characterization was made concerning the LV ejection fraction (EF), LV mass, end-diastolic volume and the existence of myocardium areas of scarring not suggestive of ischemic heart disease (intramyocardium and/or subepicardium areas of late gadolinium enhancement). The relationship between the myocardium and the peripheral muscle concerning T2 intensity signal and T1 signal enhancement was also evaluated. Delayed enhancement was depicted using an inversion recovery gradient echo T1 sequence 10 minutes after intravenous infusion of gadolinium chelate contrast material (0,2mmol/kg). **Results:** Twenty-seven patients were studied, 14 with an IVG during dobutamine SE and 13 with HC. Patients with an IVG were older (54.8 ± 13.9) than those with HC (35.2 ± 21.7) $p \leq 0.01$. The EF was normal in all patients and with no significant differences between the groups (IVG 68.3 ± 4.5; HC 67.7 ± 8.2; p = ns). The LV mass was augmented in the group with HC (IVG 162.0 ± 42.4; HC 251.5 ± 79.8; $p \leq 0.001$). The LV mass was above the normal range in 14.3% of the IVG patients and in 69.2% those with HC ($p \leq 0.005$). LV volume in the group with an IVG was of 146.1 ± 40.1 and in patients with HC was of 159.2 ± 47.4 (p = ns). The LV volume was above the normal range in 33.3% of patients with HC and in the normal range in patients with an IVG ($p \leq 0.05$). In patients with a dynamic IVG, scarring areas were seen in 64.3%. They were also observed in 54.5% of patients with HC (p = ns). **Conclusion:** According to these results it seems that the development of an intraventricular gradient during dobutamine stimulation could be related, in some patients, to structural changes (scarring areas) in myocardium tissue. This is also common in patients with hypertrophic cardiomyopathy. The augmented LV mass and of left ventricular volume was a feature of hypertrophic cardiomyopathy rarely seen in patients with a dynamic intraventricular gradient during dobutamine stress echocardiography. Further studies are required to decipher the mechanisms of myocardium adrenergic hyper responsiveness and the role of myocardium fibrosis in these patients.

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Cardiac magnetic resonance in the study of patients with a dynamic intraventricular gradient during dobutamine stress echocardiography

M. Ferreira[1], P. Donato[1], S. Monteiro[1], R. Martins[1], F. Caseiro-Alves[1], L.A. Providência[1]. *[1]COIMBRA UNIVERSITY HOSPITAL*

Background: The development of a dynamic left intraventricular gradient during the performance of dobutamine stress echocardiography (SE) has been described and according to some investigators may play a role in the mechanisms of chest pain. The pathophysiological significance of this observation is still under investigation. Cardiac magnetic resonance (CMR) is a non invasive diagnostic technique unrivalled in its ability to characterize myocardium soft tissue structures. The aim of this study was to characterize left ventricle (LV) by CMR in patients with a dynamic intraventricular gradient (IVG) during the performance of dobutamine SE. **Methods:** The studied population had no history of myocardium infarction or myocardium revascularization. Fourteen patients were included; with a mean age of 52.8 ± 13.9 years and predominantly males (88%). The characterization was made concerning the presence of coronary risk factors, angina during SE, LV ejection fraction (EF), LV mass, end-diastolic volume and the existence of myocardium areas of scarring not suggestive of ischemic heart disease (intramyocardium and/or subepicardium areas of late gadolinium enhancement). The relationship between the myocardium and the peripheral muscle concerning T2 intensity signal and T1 signal enhancement was also evaluated. Delayed enhancement was depicted using an inversion recovery gradient echo T1 sequence 10 minutes after intravenous infusion of gadolinium chelate contrast material (0,2mmol/kg). **Results:** Hypertension was referred by 58.8% of the patients, dyslipidemia by 35.3%, 17.6% had diabetes and 5.9% were smokers. During SE, 52.9% referred angina and no motion abnormalities suggestive of ischemia were seen. An intraventricular gradient occurred in all patients, 137.8 ± 70.2 (min 31 – max 269 mmHg). By CMR the EF was of 68.3 ± 4.5 (61 – 74), the LV mass was of 162.0± 42.4(108 – 251) and the LV end diastolic volume was of 146.1 ± 40.1(80 – 194).Scarring areas were seen in most of the patients, 64.3%. **Conclusion:** According to these results it seems that the development of an intraventricular gradient during dobutamine stress echocardiography could be related, in some patients, to structural changes in myocardium tissue. Further studies are required to decipher the relation between myocardium adrenergic response and the structural changes seen in these patients through CMR.

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Tumor necrosis factor alpha, interleukin 1 and interleukin 1 receptor antagonist polymorphisms in Mexican patients with myocardial infarction.

G. Vargas-Alarcón[1], J.M. Fragoso[1], J.M. Rodríguez-Pérez[1], N. Pérez-Hernández[1], D. Cruz-Robles[1], E. Chuquiure[1], C. Martínez[1], M.A. Martínez-Ríos[1], P.A. Reyes[1]. *[1]Instituto Nacional de Cardiología Ignacio Chávez*

Background: Inflammation plays an essential role in the development of insulin resistance and type 2 diabetes mellitus, the initiation and progression of atherosclerotic lesions, and plaque

disruption. Tumor necrosis factor alpha (TNF-α) and interleukin-1 (IL-1) family are central regulators in immunoinflammatory mechanisms. TNF-α is a pleiotropic proinflammatory cytokine produced mainly by activated macrophages with important effects on the cardiovascular system. IL-1, released by macrophages, platelets, and injured endothelium, promotes the interaction of endothelial cells with circulating leucocytes, induces the activation and proliferation of monocytes/macrophages, and stimulates smooth muscle cell mitogenesis and the synthesis of plasminogen activator inhibitor. It is believed to play a key part in atherogenesis and thrombosis. The IL 1 receptor antagonist (IL 1ra) is a soluble antagonist of IL 1 that binds without activity to the IL 1 signaling receptor type I. Some polymorphisms located in these genes have been associated with susceptibility to cardiovascular diseases. **Objective:** The aim of the present study was to evaluate the role of *TNF-α*, *IL-1* and *IL-1* receptor antagonist gene polymorphisms as susceptibility markers for myocardial infarction in a group of Mexican patients. **Methods:** Two promoter polymorphisms (positions *–238* and *–308*) of the *TNF- α* gene and six polymorphisms (*IL-1B-511*, *IL-1F10.3*, *RN.4T>C*, *RN.6/1C>T*, *RN.6/2C>G* and *IL-1RN VNTR*) of the *IL-1* family genes were analyzed by 5' exonuclease TaqMan genotyping assays and polymerase chain reaction in a group of 160 patients with myocardial infarction (mean age=57.9±12.0 years) and 200 healthy unrelated controls (mean age=55.9±4.24 years). Allele and genotype distribution of the polymorphisms in patients and controls was evaluated using chi-square, Fisher's exact test, and Woolf method for odds ratio (OR). The Hardy-Weinberg equilibrium was evaluated by chi-square test. **Results:** Observed and expected frequencies in the studied polymorphisms were in Hardy-Weinberg equilibrium. Distribution of *TNF-238*, *TNF-308*, *IL-1B-511*, *IL-1F10.3*, *RN.4T>C*, *RN.6/2C>G* and *IL-1RN VNTR* polymorphism's was similar in patients and healthy controls. However, the analysis of *RN.6/1C>T* polymorphism showed differences between patients and healthy controls. Patients with myocardial infarction showed increased frequencies of *RN.6/1 T* allele and *TT* genotype when compared to healthy controls (p=0.018, OR=1.54, 95%CI=1.06–2.24 and p=0.013, OR=1.75, 95%CI=1.10–2.80, respectively). **Conclusion:** The preliminary results suggest that *RN.6/1C>T* polymorphism of the IL-1 receptor antagonist gene could be involved in the risk of developing myocardial infarction in Mexican individuals.

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Gender differences in presentation and prognosis in population with acute chest pain suspected to be related with acute cardiac ischemia

M. Ferreira[1], V. Rodrigues[2], F. Santos[1], L.A. Providência[1]. [1]*COIMBRA UNIVERSITY HOSPITAL* [2]*COIMBRA UNIVERSITY MEDICAL SCHOOL*

Background: Published studies had reported gender differences in management of acute ischemic heart disease. Differences in presentation and disease manifestations exist and should be considered in the evaluation of chest pain patients. **Objective:** The aim of this study was to determine gender differences in prognosis of patients with acute chest pain suspected to be due to acute cardiac ischemia, in the emergency department. **Methods:** A retrospective cohort study and chart reviews were performed concerning the emergency visits in a month period. Consecutive patients referring chest pain, suspected to be caused by ischemic heart disease, were selected. Clinical and ECG variables were compared in their relation with the occurrence of myocardial infarction, myocardial revascularization and death, during 180 days of follow-up. Cox regression model analysis was used (Hazard ratio=HR). The analysis was performed in male and female patients. **Results:** 137 consecutive patients were included: 86 men (62.8%) and 51 women (37.2%) significantly older than men (69.9 ± 14.5 vs 61.7 ± 12.9; $p \leq 0.001$). During follow-up events occurred in 15 women (29.4%) and in 40 men (46.5%) (p = ns). To perform the survival analysis the following variables were considered: age, type of chest pain(angina-like), previous history of CAD, diabetes and the first ECG. In women, Cox univariate analysis show that, age (HR = 1.1, $p \leq 0.05$), the presence of diabetes (HR = 4.9, $p \leq 0.005$) and the ECG suggestive of ischemia (HR = 8.7, $p \leq 0.005$) were related with cardiac ischemic events. In a multivariate approach the independent variables were diabetes and the ECG. In men in a univariate analysis, angina-like chest pain (HR = 2.1, $p \leq 0.05$) and an ECG suggestive of ischemia (HR = 4.7, $p \leq 0.0001$) were associated with the occurrence of events. In a multivariate approach the ECG was the only independent predictor of events. **Conclusions:** In women, an older population, age, the presence of diabetes and the ECG pattern were related with events. Other clinical variables, such as angina-like chest pain or even a previous history of CAD were not related with prognosis. In men, typical chest pain and the ECG suggestive of myocardial ischemia were predictors of events and the ECG assumes the independent role in a multivariate survival model.

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Sudden Cardiac Death and Defibrillators in Latin America. Primary and. Secondary Prevention. Data from the ICD Registry Latin America.

R Keegan , R Eloy Pereyra, F Colombo, W Uribe, J Cordero Cabra, C Tentori, V Moraes , K Griffith, J Maloney, C Muratore. [1]*Hospital Privado del Sur, Argentina* [2]*Hospital Santa Isabel, Brasil* [3]*Sanatorio Trinidad Quilmes, Argentina* [4]*Clínica Medellín, Colombia* [5]*Hospital Bernardette, México* [6]*Hospital Fernandez, Argentina* [7]*Clínica Endocardio, Brasil* [8]*Gov Juan F Luis, Virgin Island* [9]*Medtronic Latin America* [10]*Medtronic Latin America*

The Medtronic ICD Registry was designed to collect data related to indications and follow-up of patients (pts) receiving an implantable cardioverter defibrillator (ICD) in Latin America. **Objective:** To evaluate the characteristics and outcomes of pts treated for primary prevention in comparison with secondary prevention of sudden cardiac death. **Methods:** Five hundred seven pts who received a Medtronic ICD or CRT-D in the ICD Registry were included. Clinical features, indications, mortality, hospitalization and device interventions were analyzed. **Results:** One hundred eighty nine pts (37.3%) were implanted for primary prevention and 318 pts (62.7%) for secondary prevention. In the primary prevention group there was a greater predominance of men (88% vs 72%, P<0.0001); they were older (62±11 years old vs 58±15 years old, P<0.0006); had more frequently ischemic and idiopathic dilated cardiomyopathy (65% vs 31%, P<0.0001 and 28% vs 20%, P<0.03 respectively). In the secondary prevention group there was a higher frequency of Chagas' disease (26% vs 3%, P<0.0001), hypertrophic cardiomyopathy (8% vs 2%, P<0.002) and Brugada syndrome (3% vs 0%, P<0.01); more pts were in NYHA class I/II (77% vs 67%, P<0.01); had better mean left ventricular ejection fraction (41±15% vs 24±10%, P<0.0001) and left ventricular end diastolic diameter (58±10 mm vs 64±9 mm, P<0.0001); received more amiodarone (46% vs 22%, P<0.0001) and less beta-blockers (52% vs 79%, P<0.0001). In a similar follow-up period (11± 7 months in both groups) no differences were found in total and cardiac mortality in primary prevention vs secondary prevention groups (8 pts; 4.2% vs 12 pts; 3.8%, P=NS and 3 pts; 1.6% vs 5 pts; 1.6%, P=NS) and hospitalizations (26 pts; 13.8% vs 36 pts; 11.3%, P=NS). Patients in secondary prevention received more appropriate interventions from the ICD (21% vs 9%, P<0.0004). **Conclusions:** A high proportion of pts are implanted for primary prevention in Latin America. Considering the follow-up period (almost 1 year), no differences were found in mortality and hospitalizations between primary and secondary groups and the rate of interventions was higher in the secondary prevention group.

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BENEFICIAL EFFECTS OF TRIMETAZIDINE, GIVEN BEFORE PERCUTANEOUS CORONARY INTERVENTION, ON MYOCARIAL DAMAGE DURING THE PROCEDURE

A. Yilmaz[1], **A. Erdem**[1], K. Yalta[1], S. Sarikaya[1], M.B. Yilmaz[1], O.O. Turgut[1], I. Tandogan[1]. [1]*CUMHURIYET UNIVERSITY MEDICAL SCHOOL CARDIOLOGY DEPARTMENT, SIVAS, TURKEY*

Background: A common acceptance exists that the myocardial damage appeared after percutaneous coronary intervention (PCI), is related to adverse events in patients short and long term follow-up. Post-PCI creatin kinase and troponin serum levels are helpful to determine the size of myocardial damage. In order to decrease the damage, several agents had been tried. Trimetazidine is an anti-ishemic agent with metabolic effects. Drug regulates the energy metabolism of damaged myocardial cells which encountered hypoxia and ischemia. In this study, we sought to determine the beneficial effects of trimetazidine on myocardial damage, when given before the PCI **Methods:** One hundred and nineteen patients underwent elective PCI enrolled to our study. Patients randomized into two groups, patients group 1 (n:59, 71% men, 54±9 years) had 3x20 mg trimetazidine a week before procedure. Remaining patients formed group 2 (n:60, 68% men, 52±10 years) and did not take trimetazidine before procedure. All patients baseline creatin kinase-MB (CKMB), troponin I (tnI) and high-sensitive C-reactive protein (hsCRP) samples were obtained. After the procedure, 6., 12. and 24. hour CKMB and tnI and only 24. hour hsCRP samples were also obtained and the highest values were recorded. **Results:** Two groups were matched by basic demographic characteristics (p>0.05). Post-procedure CKMB values were significantly different between two groups (Group 1: 4.8±3.9, Group 2: 11.21±10.3, p<0.05). TnI levels were also different but showed no significance (p>0.05). Group 1 had higher post-procedure hsCRP values than group 2 (Group 1: 1.37±2.43 mg/dl, Group 2: 8.62±9.43 mg/dl; p<0.001). After two moths follow-up, no myocardial infarction or death detected in the study population. **Conclusion:** In our study, we found that trimetazidine decreases the insidance of myocardial damage after PCI. We think that this positive effect deserves larger controlled studies to be clarified, yet we think it would be reasonable to use trmetazidine to prevent myocardial damage done, during PCI.

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ABDOMINAL OBESITY: AN INDICATOR OF EXTENSIVE CORONARY ARTERIAL DISEASE IN NSTEMI PATIENTS ?

A. Erdem[1], O.C. Yontar[1], S. Sarikaya, A. Yilmaz, K. Yalta, M.B. Yilmaz, I. Tandogan. [1]*CUMHURIYET UNIVERSITY MEDICAL SCHOOL CARDIOLOGY DEPARTMENT, SIVAS, TURKEY*

Background: Obesity, which is classified by means of body mass index (BMI) and/or waist circumference, is an important risk factor for coronary arterial disease (CAD). In several studies, it was shown that abdominal (central) obesity is related to insulin resistance and so, is a part of metabolic syndrome. In our study, we sought to determine the relationship between abdominal obesity and the extensive CAD in patients who admitted to our hospital with unstable angina (UA) and non-ST segment elevated myocardial infarction (NSTEMI). **Method:** Ninety-four patients (42 female, 52 male) admitted to our hospital with non-ST segment elevated acute coronary syndromes between February 2005 and May 2006 enrolled for the study. 61 patients were diagnosed as UA and 33 were NSTEMI. All patients underwent coronary angiography (CA) on their median sixth day of hospitalization. CA results were scored according to Gensini and Reardon Indexes by a blinded physician. **Results:** Among UA patients, waist measurements were 102.31±15.09 cm for male (n=35), 106.15±9.82 cm for female (n=26) patients. Male patients had lower Gensini score (mean:23.71±25.5 vs 29.38±32.5) but the Reardon scores were similar for both sexes (mean:7.2±4.9 vs 7.23±4.20, for male and female, respectively). Among NSTEMI patients, waist circumferences were 102.00±14.90 cm for male, 107.69±16.37 cm for female (n=16) patients. Male patients had higher Gensini scores (mean: 43.71±52.15 vs 25.06±19.11, for male and female, respectively) and also higher Reardon scores (mean: 8.23±4.9 vs 7.5±4.73, for male and female, respectively) than females. For both sexes there was a significant correlation between waist circumferences and Gensini and reardon sores (for men: r=0.659, r=0.530, p<0.001 for both; for women: r=0.697, p<0.001 and r=0.498, p=0.001, for Gensini and Reardon scores, respectively). When it was controlled for sex, diagnosis, hypertension, diabetes and hyperlipidemia, statistical significance remained (r=0.6678, p<0.001, r=0.5153, p<0.001). **Conclusion:** Significant relationship was found between increased waist circumference and Gensini and Reardon scores for both sexes. We think that abdominal obesity is an indicator of extensive CAD in NSTEMI and UA patients.

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EFFECTS OF CHRONIC WATER RESTRICTION ON CARDIOVASCULAR

M.P Da Rosa[1], P Arza[1], A Fellet[1], M Toscani[1], C Arranz[1], M.A Costa[1], A.M Balaszczuk[1]. *[1]Department of Physiology, School of Pharmacy and Biochemistry, University of Buenos Aires.IQUIMEFA-CONICET. Buenos Aires, Argentina.*

Water deprivation is a physiological stress that triggers a different sequence of events to conserve body fluids and cardiovascular homeostasis. It is known that nitric oxide (NO) is involved in the cardiovascular adaptative response in several physiological and pathological conditions. However, the exact role played by NO in the pathogenesis of hypovolemic state induced by chronic dehydration remains to be defined. Therefore, this study was designed: 1) to evaluate the effect of chronic water deprivation on cardiovascular NO system in rats, and 2) to study the potential effect of a subsequent hydration on the alterations induced by this hypovolemic state. Male Sprague-Dowley rats (200g) were divided in: E1: water restriction during 3 days + 1 day of hydration (1 cycle), the cycle was repeated 8 times (32 days); C1: water ad libitum during 32 days; E2: 8 cycles of water restriction + water ad libitum during 1 month. We determined: body weight, systolic blood pressure (SBP) and hematocrit before and at the end of each experiment. At the end of experimental time the animals were sacrificed for evaluating NOS activity (14C L-arginina) in right atria (A), left ventricle (V) and thoracic aorta (Ao). **Results:** The results are expressed as the mean ± SEM. *p< 0.05 vs C1, **p<0.01 vs C1, ***p<0.001 vs C1; #p<0.001 vs E1. Chronic water restriction decreased body weight (32%) and plasmatic volume (18%) associated with a reduction in SBP and NOS activity in the cardiovascular system. These parameters recovered basal values after one month of oral hydration. According to our results, we suggest that cardiovascular NO system activity depends on individual hydration state.

				NOS	Activity	(pmol/g tissue. min)
Groups	Body weight (g)	SBP (mmHg)	Hematocrit (%)	Au	V	Ao
C1	285±10	108±2	48±1	352±18	283±17	326±14
E1	195±6***	78±4***	53±1**	277±17**	198±14**	356±12**
E2	325±8#	102±3	49±2	319±15	249±19	306±16

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The Interleukin 1B –511 polymorphism is associated with the risk of developing restenosis after coronary stenting in Mexican patients.

G. Vargas-Alarcon[1], E. Malpica-Miranda[1], J.M. Fragoso[1], H. Delgadillo-Rodríguez[1], J.M. Rodríguez-Pérez[1], C. González-Quesada[1], N. Martínez-Rodríguez[1], M.A. Peña-Duque[1], M.A. Martínez-Ríos[1]. *[1]Instituto Nacional de Cardiología Ignacio Chávez*

Inflammation is the primary response to vessel wall injury caused by stent placement in coronary arteries. Cytokines of the interleukin-1 (IL-1) family are central regulators in immunoinflammatory mechanisms, and intensive work has been focused on IL-1 modifiers that may influence the inflammatory response. Data from several studies support IL-1 regulation of endothelial and smooth muscle cell mitogenesis, thrombogenic response of endothelial cells, leukocyte adherence, lipoprotein metabolism, extracellular matrix production and vascular permeability. With these actions, IL-1 occupies a key place in the cascade of autocrine and paracrine mediators that promote restenosis after percutaneous coronary interventions. The objective of this study was to test for association between IL-1 and IL-1 receptor antagonist gene polymorphisms and risk for restenosis after coronary stent placement in a group of Mexican patients. The *IL-1B-511*, *IL-1F10.3*, *RN.4T>C*, *RN.6/1C>T*, *RN.6/2C>G* and *IL-1RN VNTR* polymorphism's were analyzed by 5' exonuclease TaqMan genotyping assays and PCR in a group of 133 patients who underwent coronary artery stenting. Basal and procedure coronary angiography were analyzed looking for angiographic predictors of restenosis and follow up angiography looking for binary restenosis. Using a >50% stenosis at follow-up (a greater than 50% reduction in the luminal diameter of the stenosis compared with the coronary angiography findings immediately following angioplasty) as the criterion to define restenosis, we selected 52 patients with restenosis and 81 without restenosis for the analysis. Differences in genotyping distribution were assessed by chi-square and Fisher's exact test. Odds radios (OR) with 95% confidence intervals (CI) were also calculated. Analysis by subgroups were done dividing the patients or lesions treated with bare metal stent (BMS) or drug eluting stent (DES). Multiple logistic regression was used to assess the association between the presence of a particular genotype and the presence of restenosis. We tested for independent association in multiple variable models (multiple logistic regression) of restenosis. Distribution of *RN.4T>C*, *RN.6/1C>T*, *RN.6/2C>G*, *IL-1F10.3* and *IL-1RN VNTR* polymorphisms was similar in patients with and without restenosis. However, patients with *IL-1B-511 TT* genotype had a 2.58-fold increased risk to developing restenosis (p=0.012, OR=2.58, 95%CI=1.26–5.28). When the analysis was done considering the type of stent, the risk of developing restenosis was increased in patients with the *TT* genotype (p<0.01, OR=7.64, 95%CI=3.22–18.13), but only in those patients with bare metal stent (BMS). After multivariate adjustment, the independent predictors of restenosis were the presence of *IL-1B–511 TT* genotype, the type of stent (BMS), the diameter of the stent (IL-1B-511 CC genotype. The preliminary results suggest that *IL-1 –511* polymorphism has an important role in the risk of developing restenosis in Mexican patients who underwent bare metal stent implantation.

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ENDOTHELIAL FUNCTION AND HORMONE REPLACEMENT WITH TIBOLONE IN MENOPAUSAL WOMEN

J. Gomez-Mancebo[1], M Navarrete, L A Sanchez, A Pinzon. *[1]Universidad Central de Venezuela. Clínica El Avila Caracas [2]Clinica El Avila Caracas [3]Organon Caracas [4]Organon Netherlands*

Purpose: To establish the effects, if any, of the administration of tibolone to healthy, post-menopausal women, on endothelial function and on lipid, haemostatic and inflammatory risk markers (IRM) for cardiovascular disease, we designed a prospective, randomized, double-blind, placebo-controlled study. **Methods:** Forty one healthy at least one year post-menopausal women, younger than 60 years old, after signed a consent form, were randomized to receive tibolone (T)2,5 mg/d(n=21, mean age 50,5)or placebo(P)(n=20, mean age 51,9) for a period of 3months. Women who took hormone replacement, smokers, hypertensive or diabetic were all excluded. Medications not allowed during the study: estrogen, ACE inhibitors,Statins, calcium antagonists,thiazolidine derivatives, L-arginine, vitamins E and C, probucol. There were no differences at basal demographic findings. A reactive hyperemia test (RHT) was performed for estimating endothelial function, at entering and at the end of the protocol, between 6 and 8 pm, 6 hours fasting, with a 7,5 MHz vascular transducer. Three baseline brachial artery diameters were recorded and mean was obtained; After 5 minutes of external brachial artery occlusion above the left antecubital fossa, three determinations of brachial artery diameter between 60 and 120 seconds post end of occlusion were obtained. The change in diameter cause by flow-mediated dilatation was expressed as the percent change relative to that at the initial resting test. Additionally were measured: total cholesterol, HDL-cholesterol, LDL-cholesterol, triglycerides, plasminogen activator inhibit- or-1 (PAI-1), fibrinogen, tissue plasminogen activator-1, high sensitivity C-reactive protein, and intercellular adhesion molecule(ICAM-1). **Results:** There were not significant differences between groups after treatment in RHT (T 11,47% vs P 8,27%, p=0,23). Use of T was associated with significant increase in levels of PAI-1 at the end of study (41 ng/mL vs 47 ng/mL, p<0,03). Alternatively, ICAM (620 ng/mL vs 346 ng/mL, p<0,003) and HDL (63 mg/dL vs 49 mg/dL, p<0,01) decreased significantly in this group. **Conclusions:** tibolone does not seem to impair endothelial function by RHT. Laboratory cardiovascular IRM changed in a protective way: ICAM-1 and in an opposite way: HDL-C, PAI-1.

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Coronary artery bypass surgery in diabetes

E. Gabe[1], M Santos[1], E Dulbecco[1], J Abud[1], H Raffaelli[1], M Rodriguez Acuña[1], A Arnedo[1], F Robles[1], R Boughen[1], RR Favaloro[1]. *[1]ICYCC. Favaloro Foundation.Argentina*

Purpose: The aim of this study was to compare clinical characteristics and in-hospital outcome between diabetic and nondiabetic patients undergoing isolated coronary artery bypass grafting. Secondarily we attempted to assess the effect of bilateral mammary grafting in diabetic patients. **Methods:** We analysed prospective data of 4.955 patients admitted between January 1997 and June 2003 in a single hospital. **Results:** From 4995 patients, 1145 (23 %) had history of diabetes. Diabetic patients were significantly older (mean age 61+ 10 vs. 62 + 8.8 years, p<.0001) and had more incidence of arterial hypertension (p<.0001), smoking (p.01), stroke (p<.0001), peripheral vascular disease (p<.0001), chronic renal failure (p.002), severe left ventricular dysfunction (p.0001) and multivessel disease (p.04) than nondiabetic patients. Hospital mortality rate was similar in both groups. Compared with nondiabetic patients, diabetics had a higher incidence of: atrial fibrillation (p.017), acute renal failure (p<.0001), stroke (p.018) and deep sternal wound infection (p<.0001) in the post-operative course of surgery. Length of in-hospital stay was higher in diabetic group (mean 8 vs. 9 days, p<.003). The use of left internal mammary artery graft was similar in both groups. No differences were observed in the post-operative course of bilateral mammary grafts between diabetic and nondiabetic patients. **Conclusion:** The present series demonstrated that diabetic patients who underwent coronary artery bypass graft constitute a high-risk population due to associated comorbilities and a greater extension of atherosclerotic disease. Although this group mortality was not higher, there was an increased incidence of post-operative complications. The use of bilateral internal mammary artery grafts did not increase the risk of the procedure in diabetics.

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Relationship between inflammatory biomarkers, oxidative stress and morpho-functional mitochondrial changes in experimental atherogenic model

MC Baez[1–3], M Tarán[2–3], V Campana[1–3], P Pons[4], JC Simes[3], DF Comay[5], JA Palma[3], M Moya[1–3]. *[1]Cátedra de Física Biomédica-UNLAR [2]Fundación F. Fiorini [3]Cátedra de Física Biomédica-Facultad de Ciencias Médicas-UNC [4]Centro de Miscroscopía Electrónica-UNC. [5]INCOR (La Rioja).*

Having in mind that the most frequent cardiac diseases can be prevented in most cases, studies for the identification of early markers of atherogenesis become very relevant. Recent large clinical prospective trials point towards hiperfibrinogenemia as being an independent risk factor for atherogenesis. Besides, clinical trials have shown an association between fibrinogenemia and oxidative stress, but the mechanisms are still unknown. **Objective:** Our purpose was to study the mechanisms that involve hiperfibrinogenemia as a cardiovascular risk factor in atherogenesis, in relation to its repercution to oxidative stress, analyzing nitrotyrosine levels, superoxide dismutase and citrate synthase activity and the morpho-functional mitochondrial changes that could occur in early stage atherogenesis. **Material and Methods:** Twenty four male Wistar strain rats were divided in: (A) Control (uninjuried) and (B) Multiple Injuries(MI) for 30 days. The proinflammmatory process was induced by adrenaline injection (0,1ml/rat/day). Blood was obtained after animal sacrifice, previously ketamine anaesthesiated, 72 hours after the last injury, in coincidence with 30 days post the initial injury. Plasmatic fibrinogen(PF) levels (mg/dL), superoxide dimustase (SOD)(U/ml) and citrate synthase activity (SC)(μmolCoA·min·mgprotein) were determine by spectrophotometry. Nitrotyrosine (nM) levels were determinated by ELISA. Morphological mitochondrial changes were study by electronic microscopy(EM). Results were statistically analysed by an ANOVA for the continuous variables. For the mitochondrial cuantification we use the Axiovision 3.0 program and the results were analized by chi Square test, a p<0.05 level of significance was established in all cases. **Results:** In the MI group (B), plasmatic fibrinogen (353±17mg/dL) incremented significantly when compared to the control (A)(207±3 mg/dL)(p<0.001). Nitrotyrosine showed a similar behaviour in the injured group increasing significantly (5.03±0.04 nM), however nitrotyrosine it's not usually produced under physiological conditions. SOD concentration also increased in

the injured group (267,5±12.17U/ml) respect to control group (A)(139.44±4.74U/ml)($p<0.001$). And when comparing the citrate synthase activity between groups (A) and (B) we found that it was significantly diminished in groups (B):(0.16±0.18μmolCoA·min·mgprotein) compared to the control (A)(0.29±0.04 μmolCoA·min·mgprotein). EM showed in the injured group: larger mitochondria, dilated intermembrane space and cristae disorganization with the presence of electrodense granules. This lesions correspond grade 3 morphological alterations (73.41% of the lesions) and are associated with mitochondrial dysfunction. **Discussion:** Fibrinogen produces endothelial dysfunction and therefore facilitates nitro oxidative stress, an indirect marker of the presence of peroxinitrite. This results show that the artery wall is an important site for nitrooxidative protein modification in atheromathosis. The higher values of SOD have been correlated to this concept since a higher concentration of substrate for this enzyme could generate an increment of SOD, whitch would reflex an oxidative stress state. The morphofunctionaly mitochondrial alterations observed in our results have demonstrated that the mitochondria may also be important targets for reactive oxygen species. We propose that mitochondrial dysfunction, together with endothelial dysfunction, represents an important event associated with fibrinogen leading to atherosclerotic disease.

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HYPERTROPHIC CARDIOMYOPATHY AND PREGNANCY RELATED COMPLICATIONS.

F. Landeta[1], A. Fernandez[1], J.H. Casabe[1], F. Vaisbuj[1], C. Lopez[1], R. Coronel[1], R. Bianco[1], E. Guevara[1]. *[1]ICYCC - FAVALORO FOUNDATION*

Objectives: To investigate the clinical course of women with Hypertrophic Cardiomyopathy (HCM) during pregnancy and its influence on physicians in selecting the mode of delivery. **Background:** As a result of increasing awareness and familial screening, HCM is being diagnosed more frequently. Therefore, it is important to study the risk associated with pregnancy. **Methods:** 75 women with MCH were included. They were asked if they had been pregnant and how often, if they had experienced dyspnea, angor, palpitation, syncope or sudden death before, during or after their pregnancies, medication taken as well as mode of delivery. The x^2-test was used for group comparison. All p values of less than 0.05 were considered to indicate statistical significance. **Results:** There were 170 pregnancies in total. MH was diagnosed in seven women (9%) before their first pregnancy and in seventy (91%) women after. Seven patients had already reported cardiac symptoms before pregnancy but none of them described symptomatic deterioration. Seven (9%) women were symptomatic during pregnancy; 57% of them had already been symptomatic before pregnancy and no symptomatic progression was reported. Only three (2%) asymptomatic women had symptoms during pregnancy ($p < 0.01$). Delivery was accomplished by a caesarean section due to obstetrical problems in 13.6% of the patients without statistical difference in the frequency between women diagnosed before pregnancy and those in whom the diagnosis of HM was unknown at the time of pregnancy (18.2% vs 13.3%, $p > 0.05$). **Conclusions:** Most women with HCM tolerate pregnancy well. The diagnosis of HM before pregnancy did not influence the physicians in selecting the mode of delivery.

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EFFECTS OF A COX-2 ANTAGANONIST ON VASCULAR INFLAMMATION ASSOCIATED TO A MODEL OF METABOLIC SYNDROME

NF Renna[1–2], ES Gonzalez[1–2], MC Lama[1], RM Miatello[1–2]. *[1]Laboratory of Cardiovascular Pathophysiology. IMBECU-CONICET. Argentina [2]Department of Pathology. School of Medicine. U.N.Cuyo.*

Introduction: Inflammation appears to have a major role in development of vascular remodelling and atherosclerosis. Ciclooxigenase-2 (COX-2) is involved in the inflammatory response via the generation of prostanoids that, in turn, could be implicated in the expression of matrix metalloproteinases (MMP). **Objective:** to examine the effect of COX-2 inhibitions and its relationship with vascular remodelling through the administration of lumiracoxib (L), a COX-2 antagonist, in a metabolic syndrome experimental model (MS). **Methods:** Male spontaneously hypertensive rats (SHR) and Wistar Kyoto (WKY) controls were distributed in 4 groups (n=16 each). 10% fructose solution was administrated along 12 weeks (FFHR and FFR respectively). For the last 6 weeks groups were divided (n=8 each) and received 20 mg/kg lumiracoxib (L) by gavage. The data (media±sem) were processed by ANOVA and Bonferroni post-test. Symbol * indicates $p<0.01$ v WKY and # $p<0.01$ v FFHR. **Results:** FFHR developed MS compared to their control WKY: increased systolic blood pressure (SBP-mmHg): 182±1 v 118±0.05 *; basal glycemia (BG-mg/dL) 140±5 v 86±5*; HOMA index 2.3±0.0 v 0.4±0.0*; plasma triglyceride (TG-mg/dL) 120±30 v 50±2*; and decreased HDL-col (HL-mg/dL) 10±3 v 18±2*. Moreover, FFHR developed cardiac hypertrophy: increased relative heart weight (RHW) 4.1±0.02 v 2.5±0.01*, left ventricular myocardiocyte cross-sectional area (MCA-μ2): 1550±29 v 800±20*. The coronary artery lumen/media (L/M) ratio decreased: 11±0.5 v 14±1* and the expression of MMP-2 and MMP-9 by western blot in left ventricular homogenates was incremented in FFHR. Vascular inflammation was demonstrated immunohistochemically (IHC) by determination of NF-kB and VCAM-1 in coronary arteries, and high-sensitive Reactive C protein (hsRCP) in plasma: 1.5±0.1 v 5.1±0.2*. Most of these changes were reverted by chronic administration of L: SBP reduced to 165±0.9# and the coronary artery lumen/media (L/M) ratio was reverted. Cardiac remodelling was also prevented: RHW decreased to 3.5±0.01# and MCA: 1050±29#. The MMP-2 and MMP-9 expression decrease by lumiracoxib administration. Vascular inflammation markers were also reduced: hsRCP: 2.5±0.1# and local expression of NF-kB and VCAM-1 disappeared. **Conclusion:** These data confirm the development of the pathological experimental model and suggest that consequent activation of genes participating in the inflammatory process takes actively part in the end organ damage at vascular level in this pathology. Additionally, this study demonstrates that the COX-2 antagonist was able to prevent the structural and inflammatory changes associated to the MS experimental model, suggesting the participation of this enzyme in the development of the changes above mentioned.

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Characteristics of Hypertrophic Cardiomyopathy in the elderly

J. H. Casabe[1], A. Fernandez[1], **F. Landeta**[1], G. Fava[1], F. Vaisbuj[1], R. Peidro[1], R. Laguens[1], R. R. Favaloro[1], C. Lopez[1], E. Guevara[1]. *[1]ICYCC - FAVALORO FOUNDATION*

Characteristics of Hypertrophic Cardiomyopathy in the elderly **Background:** Hypertrophic Cardiomyopathy (HCM) may cause death and disability in patients of all ages although is also frequently compatible with normal longevity. **Objective** The aim of this study was to analyze the clinical and echocardiographic characteristics and the evolution of elderly patients and to compare them to younger patients. **Method** From 11/1992 to 8/2007, 296 consecutively HCM patients were enrolled. They were retrospectively analyzed divided in 2 groups: group I (patients ≥ 75 years) and group II (patients < 75 years). Median/quartiles follow up period was 2.2 (0.8–5.6) years. Categorical variables were compared with the use of the chi-square test, and continuous variables were compared with the use of Student's t-test. All p values of less than 0.05 were considered to indicate statistical significance. **Results** Elderly were more symptomatic (84.8 % vs 60.4%, $p < 0.05$) than younger people, due to dyspnea predominantly (72.7 % vs 44.8 %, $p < 0.05$). Most of them were women (65.2 % vs 42.6 %, $p < 0.05$), had a higher prevalence of left ventricular outflow tract obstruction (LVOTO: 54.5 % vs 34.3 %, $p < 0.05$) (although there was no difference in the LV-wall thickness: 19.27 "b 5.28 mm vs 19.48 "b 6.14 mm, $p < 0.05$), and had more requirement of dual chamber pacing (10.4 % vs 3.9 %, $p < 0.05$). They had less major risk factor for sudden death (SD) (19.7 % vs 32.6 %, $p < 0.05$), implantation of ICD (0 % vs 16.5 %, $p < 0.05$) and a tendency of less history of SD (0% vs 4.8 %, p 0.07). There were less patients in end-stage phase (0 % vs 7.4 %, $p < 0.05$) and a trend to less death from heart failure (0 % vs 5.2 %, $p < 0.058$). **Conclusions** Compared with younger patients, elderly patients with HCM are predominantly women with more LVOTO and dyspnea. In them dual chamber pacing is more often used. It seems to be a population with lower risk for SD, because of less major risk factor for sudden death, history of SD and implantation of ICD. Indeed they are less likely to progress to end-stage phase and a trend to less death from heart failure.

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Early and late outcome in patients with End Stage Renal Failure under chronic dialysis undergoing cardiac valve surgery: mechanical versus biological prosthetic valve

A. Hershson[1], **M Cabello** , R Coronel, G Stampone, P Roura, P Raffaelle, J Abud, E Dulbecco, H Raffaelli, R Favaloro. *[1]Favaloro Foundation [2]Favaloro Foundation [3]Favaloro Foundation [4]Favaloro Foundation [5]Favaloro Foundation [6]Favaloro Foundation [7]Favaloro Foundation [8]Favaloro Foundation [9]Favaloro Foundation [10]Favaloro Foundation*

Introduction The morbidity and mortality of cardiac valve surgery is increased in patients with end stage renal failure (ESRF). There is not definite agreement regarding the best valve substitute to be offered to this high risk subgroup of patients. **Objective** To compare the in-hospital and long term outcome of patients (p) with ESRF undergoing heart valve replacement. We intended to seek if there were differences when comparing mechanical versus biological heart valve substitutes. **Material and Methods:** We included 27 ESRF patients under chronic hemodialysis treatment who underwent heart valve replacement (aortic and/or mitral) with or without concomitant coronary artery bypass graft surgery (CABG) from 1998 to 2007. The follow up period was 2.2 ± 2 years. Test U of Mann Whitney was used to evaluate numerical variables. Long-term survival was estimated by the Mantel-Cox test. For the categorical variables was used the Fisher exact test. **Results** 74% were men. The causes of the ESRF were similar in both groups: diabetes (DBT) 11.1%, hypertension 18.5%, glomerulonephritis 18.5%, polycystic kidney disease 11.1%, and collagen disease 3.7%. Global in-hospital mortality was 26% (7p). There were no differences regarding in-hospital mortality or post operative complications between groups. During follow up there were 9 deaths: 2 native valve endocarditis (both were treated medically and died from sepsis) and 1 prosthetic valve endocarditis (he was operated and died on day 3 postop), 4 deaths were considered as complications of nephropathy, and 2 neoplasia (p=ns). On the biological group, 1 p developed severe aortic regurgitation (homograft dysfunction) and required reoperation; and on the mechanical group 2p suffered a stroke. The rate of global readmission was 22.2% (p=ns). One p received renal transplant. None of these variables were statistically different between groups. **Conclusion:** There are no significant outcome differences in this high risk population, irrespective of the valve substitute choosen.

SURGICAL STRATEGY AND PROSTHESIS IMPLANTED

	Isolated Valvular	With CABG	Total
Mechanical aortic valve replacement (AVR)	3	1	4
Biological AVR	8 (4 Homografts)	9 (2 Homografts)	17
Mechanical mitral valve replacement (MVR)	2	3	5
Mechanical AVR + MVR	0	1	1
Total	13	14	27

	Biological valve replacement n=17	Mechanical valve replacement n=10	
Age (average) years	51	53	ns
Previous time of dialysis to surgery (years)	5.6 ± 1.38	3.46 ± 0.99	ns
DBT (%)	5.9	40	0.047
Fraction Ejection (ECHO) (%)	47	53	ns
Previous acute myocardial infarction (%)	23.5	0	ns
Periferical vascular disease (%)	11.8	20	ns
AVR	17 (100%)	5 (50%)	0.003

	Biological valve replacement n=17	Mechanical valve replacement n=10	
MVR	0	6 (60%)	0.001
Postoperating complications			
Mediastinitis (%)	11.8	0	ns
Septic shock (%)	17.7	0	ns
In-hospital mortality (%)	29.4	20	ns
Catheter associated infection (%)	0	20	ns
Evolution			
Death (%)	29.4	40	ns
Long-term survival average (years ±SD)	4.3 ± 1.1	4.1± 0.7	ns

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Is there any difference at presentation in infantile dilated cardiomyopathy regarding the age?

Vitor Manuel Pereira Azevedo[1], Marco Aurélio Santos[1], Márcia Bueno Castier[2], Maria Cristina C. Kuschnir[1], José, Geraldo De Castro Amino[1], Maria Ourinda Mesquita Cunha[3], Rogério Brant Martins Chaves[1], Bernardo Rangel Tura[1], Francisco M. Albanesi Filho[2], Regina Maria De Aquino Xavier[1]. *[1]National Institute of Cardiology [2]Rio de Janeiro State University [3]National Institute of Cancer*

Background: infantile dilated cardiomyopathy is normally expressed by heart failure at presentation. It remains doubtful if there are differences at presentation regarding the age of the children. **Objective:** to investigate if there are differences at presentation regarding the age of the children. **Patients and Methods:** this is a retrospective study of 179 children with dilated cardiomyopathy diagnosed from 1979 to 2006. It was select two groups of age at presentation: less than 2 years old and greater than or equal to 2 years old. Statistical analysis was performed by chi-square, Student t test and multiple regression logistic with Alfa=0.05 and Beta=0.80. **Results:** 56.4% were girls (p=0.015) and 72.6% less than 2 years old (p=0.0001), but there was no differences regarding death and age group (p=0.79). In univariate analysis, it was more frequent in children less than 2 years old: malnutrition (p=0.0013), functional class III and IV (p=0.0002), anemia (p=0.0002), tachypneia (p=0.023), dyspneia (p=0.028), hepatomegaly (p=0.0012); in EKG: right ventricle overload (p=0.03), heart rate (147.8"b25.3 vs 116.1"b32.5) (p=0.0001), ÂQRS (61.3"b35.9 vs 44.0"b37.0) (p=0.024), Sokolov index (47.5"b22.0 vs 38.4"b11.0) (p=0.03), and R wave in aVL (6.6"b4.4 vs 3.3"b2.5) (p=0.0003); in chest x-ray: cardiomegaly (p=0.003), pulmonary congestion (p=0.04) and cardiothoracic ratio (0.673"b0.0683 vs 0.606"b0.088) (p=0.0001); in laboratory hematocrit (31.3"b5.8 vs 37.4"b5.6) (p=0.0001) and in echocardiogram left ventricle ejection fraction less than 0.35 (p=0.008). In children greater than or equal to 2 years old: fourth cardiac sound (p=0.0004), hyperfonesis of pulmonary component of second sound (p=0.015), ascites (p=0.002) and peripherical edema (p=0.045) and in EKG left atrium overload (p=0.044) and ventricular arrhythmias (p=0.005). In multiple regression logistic they were significant in less than 2 years old: functional class III and IV (p=0.0169), heart rate (p=0.0006) and cardiothoracic ratio (p=0.0184), and in children greater than or equal to 2 years old: left atrium overload (p=0.0056), fourth cardiac sound (p=0.0042), hyperfonesis of pulmonary component of second sound (p=0.0259), ascites (p=0.0463). **Conclusion:** The clinical and laboratorial presentation of dilated cardiomyopathy is dependent from the age of diagnose and the physician need recognize these particularities to make a correct diagnosis.

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Inappropriate ICD shocks: Incidence, predictors and prevention of recurrence. COMPAS registry.

N. Galizio[1], S. Schanz[1], L. Medesani[1], P. Montoya[1], M. Ramirez[1], L. Soriano[1], G. Fava[1], R. Raña[1], H. Fraguas[1], J.L. Gonzalez[1]. *[1]FAVALORO FOUNDATION*

Introduction: ICD have shown to be the most effective therapy for prevention of sudden cardiac death (SCD). Nevertheless, inappropriate shocks (IS) are frequent and affect quality of life. Different strategies were proposed to reduce them. There is not enough data of the incidence of IS and the efficacy of actions to reduce them and their recurrence. **Objectives:** To describe the incidence of IS, their recurrence and the efficacy of preventive strategies. To identify potential predictors of IS. **Methods:** Prospective descriptive study. Between January 2004 and May 2007, 185 consecutive patients (pt) with first implanted ICD were enrolled. They were followed during 14±10 months by a standard schedule. At each control, clinical information and ICD stored data were collected. Occurrence of IS was analyzed and pt were divided into 2 groups: Group A (gA), with IS and Group B (gB), without IS. **Results:** IS occurred in 37 pt (20.5%). They had 53 episodes of IS, 31 of them (58%) within 3 month post-implantation. Etiologies were supraventricular tachycardia (SVT) in 42 episodes (79%), sinus tachycardia in 2 (3.7%), electrical noise in 5 (9.4%), T oversensing in 2 (3.7%), far field in 1 (2%) and QRS double sensing in 1 episode (2%). Pt with Amiodarone (AM) did not have less incidence of IS (19% vs 21.6% with and without AM. p 0.6). Pain Free II trial- like ICD settings (PFT) did not prevent IS (21.4% vs 20% with and without PFT. p 0.8). Recurrence occurred in 28% of the pt. Radiofrecuency catheter ablation (RCA) of a SVT in 2 pt suppressed IS. Changes in ICD parameters and AM prescription after an IS were ineffective to avoid new episodes. **Conclusions:** The Incidence of IS resulted high even when preventive measures were established. The principal cause was SVT, not previously diagnosed in most of the cases. A high incidence of asymptomatic SVT in this population may explain the early detection of these arrhythmias by IS after the ICD implantation. Only the history of syncope was associated with a higher risk of IS. Recurrence was also high. Only RCA, when it was possible, showed to be effective to suppress new IS.

BASELINE CHARACTERISTICS:

	gA	gB	p
Male gender	84%	75%	0.2
Age (years)	50±16	56±17	0.1
Primary prevention	52.6%	62%	0.2
VVI	73.7%	62.6%	0.2
DDD	15.8 %	23%	0.3
CRT	10%	14.3%	0.5
Coronary disease	47.4%	48.3%	0.9
Idiopathic cardiomyopathy	18.4%	21.8%	0.6
Hypertrophic cardiomyopathy	13.2%	11%	0.7
Syncope	50%	26.5%	0.04
Heart Failure	52.6%	48.3%	0.6
Atrial Fibrillation	8.8%	18.4%	0.09
QRS width	120±36 ms	131± 30 ms	0.4
LVEDD	62± 14 mm	61.6% mm	0.9
LVEF	30.6%	32%	0.6
Beta-blockers	86.8%	86.4%	0.9

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Use of a Selective Beta-Blocker in Pediatric Patients with Long QT Syndrome

J. Moltedo[1], NJ Kertesz[2], MS Abello[1], RA Friedman[2], AL Fenrich[3], BC Cannon[2]. *[1]FLENI [2]Texas Children's Hospital [3]FLENI [4]Texas Children's Hospital [5]DeVos Children's Hospital [6]Texas Children's Hospital*

Objectives: There is limited and controversial data on the efficacy of selective beta blockers, like atenolol, in Long QT Syndrome (LQTS). The purpose of this study is to evaluate its use in pediatric patients with LQTS. **Methods:** Retrospective observational study on all patients with LQTS treated with atenolol in 2 institutions. Atenolol is administered twice a day, and patients are routinely evaluated with 24 hour Holter monitors and exercise stress test (EST). **Results:** 57 patients (23 male) were identified. Mean age at diagnosis was 9 ± 6 years with a mean QTc of 521 ± 54 ms. Clinical manifestations included: asymptomatic (33, 58%), ventricular tachycardia (10, 17.5%), syncope (6, 10.5%) resuscitated sudden cardiac death (4, 7%), AV block (2, 3.5 %), pre-syncopal episodes (1, 1.7%), and bradycardia (1, 1.7%). There was a family history of sudden death in 13 (22%). Patients were followed for a mean of 5.4±4.5 years; 8 were lost to follow-up. The mean dose of atenolol was 1.4 ± 0.5 mg/kg/day. Mean maximum heart rates in Holter monitors and EST were 132 ± 27 bpm and 155 ± 16 bpm, respectively. During follow-up, 1 patient died (not compliant with atenolol at the time of the demise), and the rest were asymptomatic. Four (8%) had recurrent ventricular arrhythmias; 3 of them received an AICD (they were all symptomatic at the time of diagnosis). In 3 (6%) it was necessary to rotate to a different β-blocker due to either side effects or inadequate heart rate control. **Conclusions:** Atenolol administered twice a day, with a rate of arrhythmic events and side effects comparable to other β-blockers, constitutes a valid and effective alternative for the treatment of pediatric patients with LQTS.

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Radiofrequency ablation in patients with congenital heart disease

J. Moltedo[1], M Abello[1], A Ithuralde[1], C Seara[1], H Grancelli[1], M Campos[1], N Fernandez[1], S Waldman[1], M Ithuralde[1]. *[1]FLENI [2]FLENI [3]FLENI [4]FLENI [5]FLENI [6]FLENI [7]FLENI [8]FLENI [9]FLENI [10]FLENI*

Objectives: To evaluate the efficacy and safety of radiofrequency ablation (RFA) in different arrhythmic substrates in patients with congenital heart disease (CHD). **Methods:** Our prospective data base for RFA procedures was reviewed and all the patients with CHD who underwent RFA between December 2004 and October 2007 were identified. Data analyzed included: demographics, type of CHD, clinical presentation and the results of the electrophysiology study (EPS) and of the RFA. **Results:** Fifteen patients (9 male) were identified. Mean age at the time of the procedure was 22 ± 10 (range 10–40) years. Five had Ebstein's anomaly, two VSD-pulmonary stenosis, two tetralogy of Fallot, two tricuspid atresia status post Fontan, one coarctation of the aorta, 1 aortic stenosis status post Ross-Konno procedure, 1 D-TGA status post Senning procedure and 1 an unrepaired ASD. Clinical manifestations included palpitations with documented tachycardia in 13 patients (one with recurrent syncopal episodes). Two were asymptomatic. During EPS 7 accessory pathways were diagnosed in 6 pts. (2 postero-septal, 3 right free wall and 2 left free wall), 5 atrial flutters (2 typical and 3 atypical), 2 atrial tachycardias and 2 ventricular tachycardias. RFA was successful in 13 patients. Three had late recurrence (2 had no clinical recurrence of tachycardia). There were no procedural complications. **Conclusions:** Radiofrequency ablation of different arrhythmic substrates in patients with CHD is a highly effective and safe option in the management of patients with congenital heart disease..

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Predictor factors for death in coronary artery bypass surgery patients. Which could be modified before surgery?

Renato Kaufman[1], Vitor Manuel Pereira Azevedo[1], Maria Cristina C. Kuschnir[1], José Geraldo De Castro Amino[1], Marco Aurelio Santos[1], Rogério Brant Martins Chaves[1], Carlos Alberto Moreira Magalhã[1], Arn Migowski Rocha Dos Santos[1], Bernardo Rangel Tura[1], Regina Maria De Aquino Xavier[1]. *[1]National Institute of Cardiology*

Background: Coronary artery disease is the main cause of cardiovascular surgery in adulthood. It remains doubtful about the clinical factors and laboratories markers of death in the subset of patients submitted to the coronary artery bypass graft surgery (CABG). **Objective:** To study the clinical factors and laboratories markers of death in the patients submitted to CABG in a tertiary hospital refer center. **Patients and Methods:** Cohort of 364 patients submitted to CABG (2004 to 2006). Based on history, clinical examination, surgery and post-operatory data, 76

parameters were included in analysis. Statistics: qui-square, mean and standard deviation, Student t test, Pearson's correlation and multiple regressions. For significance: alpha=0.05 and beta=0.80. **Results:** the mean age was 62.2±9.8 years and 69.0% were men (IC95% - 63.9% 73.6%) (p<0.0001). Predictors factors of death were using univariate analysis: age (p=0.0013), body surface area (BSA) (p=0.0267), left atrium/BSA (p=0.0046), clamping (p=0.0001) and perfusion (p< 0.0001) times, low creatinine clearance index (CreatClear) before CABG (p=0.0062), previous stroke (p=0.0122), heart failure (p=0.0094), moderate to severe mitral regurgitation (p=0.0121), use of intra-aortic balloon (IAB) (p<0.0001), re-intubation (p<0.0001) and postoperative pneumonia (p=0.0485). Moderate correlation between age and CreatClear was observed (r=0.63) (p<0.0001). Therefore, to prevent bias, age was excluded from the multiple regression analysis. The multivariate analysis showed as independent factors for death low CreatClear index (p=0.0015), perfusion time (p<0.0001), postoperative use of IAB (p<0.0001) and re-intubation (p=0.0172). **Conclusion:** These clinical and laboratorial parameters stress for the possibility of death in patients submitted to CABG. Amongst these factors, the ones that can be modified are creatinine clearance and the perfusion time, depending on the per-operative risk.

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The relationship between serum lipids and quartiles of the omega-3 index in a beef eating population in Argentina as compared to a fish eating ACS population in Norway.

R. Leòn De La Fuente[2,3], **H. Aarsetoey[1,2]**, P. Gallo[3], V. Pönitz[1,2], T. Aarsland[1], ST. Nilsen[1,2], L. Woie[1,4], H. Staines[5], WS. Harris[6], DWT. Nilsen[1,2]. *[1]Stavanger University Hospital, Stavanger, Norway [2]University of Bergen, Norway [3]Cardiovascular Center of Salta, Salta, Argentina [4]Universidad Catolica de Salta, Salta, Argentina [5]Sigma Statistical Services Ltd., Balmullo, Scotland, UK [6]Sanford School of Medicine, University of South Dakota, Sioux Falls, SD, USA*

Background: Serum lipids consisting of total cholesterol, HDL-cholesterol and triglycerides reflect the background diet. We chose to evaluate these lipid fractions in a beef eating population in inland Argentina as compared to a coastal population in Norway. All study subjects presented with an acute coronary syndrome (ACS). We related serum lipids to the quartiles of the omega-3 index comprising eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) in red blood cells, expressed as percent of total fatty acids. **Methods:** Only non-statin treated ACS patients with a similar median increase in troponin-T were included; 160 (mean age 64.1, males 65.6%) from Salta, Argentina, and 330 (mean age 72.1, males 62.4%) from Norway. Blood samples were drawn immediately after admission. **Results:** Median (percentile 25–75) of omega-3 index in the Argentineans was 2.85 (1.47–4.10) as compared to 6.53 (5.45–8.04) in the Norwegians. The distribution of the lipid fractions within the quartiles of the omega-3 index is illustrated in Table 1. **Conclusion:** We found significant lower HDL levels and higher triglycerides in the Argentineans, but the atherogenic impact of these changes may be balanced by the lower total cholesterol as compared to the Norwegians. The highest quartile of omega-3 index in the Norwegian population contained significantly higher HDL-cholesterol as compared to the lowest within-country quartile (p =0.011), and a similar but opposite trend for triglycerides was noted in the Argentineans (p=0.09), suggesting that the level of these lipid fractions is related to the cellular content of n-3 FA's.

TABLE 1

Omega-3 index quartile	Total cholesterol			HDL-cholesterol			Triglycerides		
	Mean	95%CI; Lower bound	95%CI; Upper bound	Mean	95%CI; Lower bound	95%CI; Upper bound	Mean	95%CI; ĽLower bound	95%CI; Upper bound
Norway Q1	5.67	5.44	5.91	1.27	1.19	1.35	1.73	1.47	2.00
Q2	5.60	5.30	5.90	1.40	1.31	1.49	1.66	1.31	2.00
Q3	5.69	5.43	5.95	1.32	1.21	1.42	1.74	1.53	1.95
Q4	5.71	5.48	5.94	1.44	1.34	1.54	1.50	1.23	1.77
Total	5.67	5.54	5.79	1.35	1.31	1.40	1.66	1.52	1.80
Argentina Q1	4.82	4.45	5.19	0.95	0.86	1.05	2.33	1.82	2.84
Q2	5.29	4.87	5.71	1.04	0.93	1.15	2.38	1.56	3.20
Q3	4.88	4.41	5.34	0.91	0.79	1.04	2.14	1.72	2.55
Q4	4.63	4.28	4.99	1.01	0.89	1.13	1.67	1.40	1.94
Total	4.91	4.71	5.11	0.98	0.92	1.03	2.14	1.87	2.40

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Early Arrhythmic Events and Quality of Life after Radiofrequency Catheter Ablation of Atrial Fibrillation

T. Balabanski[1], V. Traykov[1], T. Shalganov[1], B. Dinov[1], M. Protich[1]. *[1]National Heart Hospital, Sofia, Bulgaria*

Objectives: We report our experience in radiofrequency catheter ablation of 14 patients with highly symptomatic, drug resistant atrial fibrillation (AF). **Patients and Methods:** Mean patient age was 50.4 +/- 8.8 years (range 39 – 67). The clinical characteristics of the enrolled patients included mild arterial hypertension in 3 patients, and moderate hypertension in 4 of 14 patients. 7 of 14 the patients (50%) had persistent AF with duration from 2 to 11 months (mean 6.7 +/- 3.6 months). Paroxysmal AF was found in 7 patients (50 %) with recurrent AF episodes from 2 to 11 daily (mean 6 +/- 2.9 episodes). Mean number of antiarrhythmic drug failures was 3 (range 1–5). The follow-up period after ablation of atrial fibrillation was from 3 to 11 months (mean 6.3 +/- 3.2 months). The main outcome measures included incidence of any kind of atrial arrhythmias and symptom severity. Quality of life (QoL) score was formed by the outcome measures and 5-point scale that ranged from 'very bad' (score 1) to 'very good' (score 5). **Results:** We were able successfully to achieve complete electrical isolation of 2 pulmonary veins (PV) in 4 patients, 3 PV in 3 patients, 4 PV in 6 patients, and 1 PV in 1 patient. Linear lesions proved complete by mapping of the left atrial roof and the mitral isthmus in all the 14 patients. No complications occurred during or after the procedures. Overall, 24 hour Holter monitoring proved freedom from atrial arrhythmias in the absence of antiarrhythmic drug therapy in 5 of 7 patients (71%) with paroxysmal AF and in 2 of 7 patients (29%) with persistent (less than 3 months) AF. Successful outcome was influenced by complete electrical isolation of 3 or 4 PV (p<0.01). QoL was good (score 4) and very good (score 5) also in patients with 3 or 4 isolated PV. **Conclusions:** We conclude that complete electrical isolation of 3 or 4 PV combined with complete linear lesions on the left atrial roof and the mitral isthmus can be considered safe and effective option for achieving stable sinus rhythm in patients with paroxysmal AF.

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PREVALENCE OF PROLONGED QT INTERVAL IN LEFT VENTRICULAR HYPERTROPHY.

M. Orellana[1], P. Adriazola[1], F. Bello[1], P. Trejo[1], P. Gonzalez[1], E. Escobar[1]. *[1]Telemedicina de Chile*

Left ventricular hypertrophy (LVH) and prolonged QT are well recognized as risks factors of cardiovascular events, particularly of arrhythmic ones. The aim of this study was to quantify the association of both conditions in a sample of electrocardiograms of the database of the Telemedicine system, using the Integrated Telemedicine Platform (PIT). 60,747 tracings from all over the country were analyzed, registered between March 1 and August 29, 2007. There were 2,503 tracings(1383 women, 1120 men) with criteria for LVH (4% of the total) which were compared to 6,500 tracings with normal morphology, selected at random. LVH diagnosis was done using Sokolow's index for LVH by voltage criteria (group 1); the same plus negative asymmetric T wave: LVH by voltage plus repolarization abnormality (group 2); and negative asymmetric T wave in D1, aVL, V5 and V6: LVH only by repolarization abnormality, (group 3). QT interval was manually measured at 100 mm/sec speed tracing from the beginning of QRS complex to the end of the T wave in D1, aVL, V5 and V6 leads. Prolonged QT interval was defined as a value of ≥ 440 msec as corrected by heart rate (QTc) **in all four leads**, without making difference between men and women. 16% of the normal tracings and 34% of the tracings with LVH had prolonged QTc (p<0,001). Out of the 377 tracings of group1, 104 had prolonged QTc (28%); 453 of 1,083 (42%) in group 2 and 300 of 1,043 (29%) in group 3 (p<0,001 group 2 vs group 1 and 3). No differences were observed comparing the averages values of QTc between the three groups of LVH (465, 468 and 466 msec), neither between men and women. (QTc average, 468 and 466 msec respectively). Age distribution did not show differences between normal tracings and LVH and in both cases 70% of the patients were over 50 years of age. In summary, LVH is associated with a significant number of cases of QTc prolonged, especially when voltage and repolarization changes are combined, which could be important for the prognosis of these patients.

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Stepwise algorithm. Diagnostic accuracy of the supraventricular tachycardia mechanism.

P. Montoya[1], J.L. Gonzalez[1], N. Galizio[1], G. Fava[1], S. Schanz[1], L. Medesani[1], L. Soriano[1], R. Raña[1], M. Ramirez[1]. *[1]FAVALORO FOUNDATION*

Background: During an electrophysiologic study, the supraventricular tachycardia (SVT) mechanism is usually identified by tachycardia features, but in most of the cases an alternative mechanism can not be excluded. Multiple pacing maneuvers are often required for an accurate diagnosis. Although many of them have shown to be useful, there is not a standardized application. **Objective:** To evaluate the diagnostic yield of a stepwise algorithm that includes 3 tachycardia features and 3 pacing maneuvers in patients (pts) with SVT. **Methods:** Prospective observational study of 85 consecutive pts with SVT referred to our electrophysiology laboratory between October 2006 and August 2007. Forty nine pts with inducible sustained and regular SVT with narrow QRS complex were analyzed. Thirty six pts were excluded because of the absence of inducible sustained, regular and reproducible SVT or wide QRS complex tachycardia. Stepwise algorithm: First step: atrial (A) - ventricle (V) relationship 1:1 or not, VA interval and atrial activation sequence (Seq). Second step: tachycardia entrainment from the right ventricle apex (E) with 6 possible responses: same Seq with 1) V-A-V, 2) V-A-His-A-V, 3) V-A-A-His-V response upon cessation of E; 4) E with different Seq; 5) inability to entrain because dissociation of the ventricle from the tachycardia with pacing and 6) SVT termination without atrial depolarization. Third step: right ventricular extrastimuli delivered during His bundle refractoriness and/or entrainment from the atrium. To confirm the diagnosis, other features, maneuvers and results of catheter ablation were took into account. **Results:** After the first step, no pts were definitely diagnosed. After the second step, 33 pts (67,3 %) were diagnosed: 13 pts AV nodal reentrant tachycardia (AVNRT), 15 pts orthodromic reciprocating tachycardia (ORT) and 5 pts atrial tachycardia (AT). Following the third step, 46 pts (94%) were properly diagnosed: 15 pts AVNRT, 26 pts ORT and 5 pts AT. **Conclusion:** In this study population, this stepwise algorithm could identify accurately up to 94% of SVT mechanism and could be a useful tool for cases in which a certainty diagnosis is required.

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THE EFECT OF SIMVASTATIN ON THE DECREASE OF INTIMOMEDIAL COMPLEX OF CAROTIDAL ARTERIES IN PATIENTS WITH ARTERIAL HYPERTENSION

D. L. Lovic Dragan[1], B.L. Lovic Branko[1], M.L. Lovic Milan[2], D.DJ. Djordjevic Dragan[2], I.T. Tasic Ivan[2]. *[1]Clinic for Internal disease" [3]Inter medica-dr Lovic" [6]Institute for cardiology" [8]Niska Banja"*

Introduction: The diseases of carotidal arteries present a significant section in the pathology of arterial blood vessels.This research includes the patients with the detected arterial

hypertension as well as with the disturbance in the status of lipids.The above mentioned factors led to increase of intimomedial complexes of the blood vessels in the neck, which resulted in the disturbance in the endothelia dysfunction of the arterial blood vessels and development of atherosclerosis. **The aim of the study:** The aim of the study was to determine the significance of the various doses of simvastatin on the decrease of intimomedial complexes (IMC) of carotidal arteries in the patients with arterial hypertension. **Method:** The study analyzed 48 patients (24 man and 24 women), of average age raning 65,9±8,7 with the arterial hypertension and with the changes on the carotidal arteries in terms of a bump of IMC from 1,1 to 1,6 mm. Each patient underwent the laboratory research as well as Doppler of the blood vessels in the neck (TOSHIBA ultrasound apparatus with the probe of 7,5 MHz), as the onset of the research and after six months from the beginning of the therapy treatment. The patients underwent antihypertensive therapy that wasn't being altered in the course of treatment. **The result:** 24 patients of average years of age 63,5± 8,6 and with IMC of 1,21±0,09 mm were treated with 10 mg of simvastatin. The other group (24 patients) of average years of age 68,3 ± 8,29 and with the bump of IMC (1,283±0,12 mm) was treated with 20 mg of simvastatin. Six mounths after the onset of the treatment with this medicine, the thickness of IMC in group treated with 10 mg simvastatin was 1,13±0,23 mm, while in the group with 20 mg it amounted to 1,23±0,094 mm. There was a decrease of IMC (p=0,05) in the group of patients with 10 mg of simvastatin, followed by a little statistical significance, whereas there was a considerable decrease of IMC in the group of patients with 20 mg, which had a more important statistical significance (p<0,05). **The conclusion:** The therapy with simvastatin led to the decrease of IMC in the treated patients, statistically larger with 20 mg dose of simvastatin in comparison to the dose of 10 mg.

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Aspirin resistance and cardiovascular events after Percutaneus Coronary Intervention.

I. Santos-Rodriguez[1], I. Gonzalez-Mendia[2], C. Alonso-Buron[3], V. Ramirez-Castro[1], M.J. Ruiz-Olgado[1], M.L. Lopez[2], M. Cascon-Bueno[1], J. Rodriguez-Collado[1], M. Diego-Dominguez[1], I. Alberca[2]. *[1]Department of Cardiology, University Hospital. [2]Department of Haematology, University Hospital. [3]Associate Professor, Faculty of Pharmacy, University of Salamanca.*

Aspirin is the cornerstorne in the secondary prevention of cardiovascular events. Laboratory Aspirin Resistance (LAR) has been described as having a normal closure time (CT) by platelet function analyzer (PFA-100) assay despite confirmed treatment with aspirin. There is no standard definition of LAR by PFA-100, with a variety of cut-off values having been used. The prevalence of LAR ranged from 5% to 65% in several studies. The aim of the present study was to evaluate the prevalence of LAR and its predictive value of recurrent major cardiovascular events (MACE) in patients treated with aspirin and clopidogrel undergoing percutaneous coronary intervention (PCI). **Materials and methods:** Closure-times of collagen/epinephine (CT-EPI) and collagen/ADP (CT-ADP) cartridges were measured 1 month after PCI in 106 consecutive patients treated with aspirin (100 mg/day) and clopidogrel (75 mg/day) and with a diagnosis of acute coronary syndrome (ACS) (81%) or stable angina (19%) and prospectively followed up for a mean period of 10± 3,4 months..MACE including mortality, myocardial infarction (MI) and repeat revacularization during follow-up were assessed Patients with LAR were defined when CT-EPI were < 160 seconds (high range of normal value in our laboratory). **Results:** Baseline Characteristics & outcomes are presented in Table. The CT-EPI were 121±43 s and 157±68 s in patients with and without events respectively showing a stastically significant trend (p = 0,08) **Conclusion:** Accord to the definition the prevalence of LAR was 64%.The incidence of cardiovascular events after PCI was three-fold higher in patients with LAR relative to those without aspirin resistance. Nevertheless, definition of aspirin resistence by PFA-100 must be standardized and its utility as a predictor of cardiovascular events needs to be further investigated.

Table	Total n=106	LAR n =69	Non-LAR n =37	P-value
Age m±sd	66±13	65±13	66±13	0,7
Sex M/F %	81/19	81/19	81/19	1
Diabetes %	24	19	35	0,06
Hypertension %	64	61	68	0,5
Smoking %	22	25	16	0,3
Hypercholesterolemia %	51	49	64	<0,2
Body Mass Index m±sd	27,5±4	27.3±3,7	27,9±4,5	0,4
Symptoms ACS %	81	80	84	0,6
CT-EPI m±sd seconds	156±68	113±20	231±55	n.a.
CT-ADP m±sd seconds	117,5±78	86±49	179±95	0,000
Months follow-up, m±sd	10±3,4	9,8±3,4	10,2±3,5	0,3
MACE n (%)	7±6,6	6±8,7%	1±2,7%	<0,3
- Stent thrombosis with MI	1±0,9	1±1,4	0	0,3
- non-Q MI	1±0,9	1±1,4	0	0,3
- non-target lesion PCI	2±1,8	2±2,9	0	0,3
- Target lesion PCI	1±0,9	0±1,4	1±2,7	0,3
- Deaths	2±1,8	2±2,9	0	0,3
9 months Survival %	93	91	97	<0,3

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CARDIAC INVOLVEMENT IN SYSTEMIC SCLEROSIS

M. E. Isasi Capelo[1–2], E.S. Isasi Capelo[1–2]. *[1]Cardiology Center, Maciel Hospital, Montevideo, URUGUAY [2]Uruguayan Scleroderma Society and Related Syndromes*

Background: Systemic Sclerosis (SSc) is a multisystemic disorder characterized by the fibrosis of the skin and internal organs. Patients with SSc may have cardiac involvement, but no cardiac symptoms. Objective: to evaluate the frequency and type of cardiac involvement and other organs in a population of patients with SSc. **Patients & Methods** Two hundred patients (176 F, 24 M, mean age 49 + 15 years) who fulfilled the criteria for systemic sclerosis according the American Rheumatism Association criteria were included in the study. According to skin involvement 59 patients had diffuse cutaneous sclerosis dSSc (involvement of the trunk and face in addition to the extremities) and 141 pts had limited cutaneous sclerosis (involvement of the extremities distal to the elbows and knees + face) according the criteria of Le Roy et al. Screening of cardiac involvement included 12 lead ECG, 24-h ECG Holter monitoring and echocardiography with echo-Doppler. Lown classification for ventricular premature beats (VPB) was used. **Results.** The female/male ratio was 7:1, the mean age at onset of symptoms was 44 (range 1–82), and the mean age at recruitment was 49 years (range 2–85). The duration of the disease was 8 + 7 years (range 9 months - 35yrs). In this population Raynaud's phenomenon was present in 182 pts (91%), digestive tract disorders evidenced by endoscopic studies in 134 (67%), lung affection evidenced by CT chest and pulmonary function tests in 44 (22%), joint affection in 106 (53%), high blood pressure in 23 (11,5%), diabetes mellitus in 3 (1,5%). Only 6 pts (3%) had cardiac symptoms. Abnormal ECG was seen in 47 patients (23%) and abnormal echocardiograms in 24 patients (12%). ECG abnormalities included conduction system disturbances 21 (10,5%), low voltage in 3 (1,5%), signs of infarction 2 (1%), non-specific ST and T-wave changes in 11 (5,5%), supraventricular arrhythmia in 20 pts (10%), atrial premature beats (APB) were found in 19 pts (9,5%) and paroxysmal supraventricular tachycardia in 1 pt (0,5%), ventricular arrhythmia in 33 pts (16,5%), simple ventricular premature beats (VPB-Lown I) in 24 pts (12%), bigeminy of VPB Lown II 2 pts (1%), multiformes of VPB Lown III 4 pts (2%), complexed arrhythmias (> III°): 1 patient couplets of VPB- Lown IVa, and 2 pts ventricular tachycardia Lown IVb. In one patient of 27 years old with diffuse SS, presyncopal episodes, left posterior and right heart bundle block and a permanent pacemaker was implanted. Echocardiographic abnormalities included: LVH in 8 pts (4%), RVH in 5 pts (2,5%) pulmonary hypertension in 8 pts (4%), systolic and / or diastolic dysfunction in 10 pts (5%) and pericardial effusion in 11 pts (5,5%). **Conclusion:** Patients with SSc may have cardiac involvement, but no cardiac symptoms. ECG, 24 h ECG Holter monitoring and ECHO examination were valuable methods for detection of clinically silent cardiac involvement in patients with systemic sclerosis.

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MAGNETIC RESONANCE EVALUATION OF PULMONARY REGURGITATION

R. Parra[1], F. Heusser[1], G. Urcelay[1], P. Becker[1], E. Villanueva[1], J. Otero[1], C. Toledo[1], C. Garcia[1]. *[1]CATHOLIC UNIVERSITY OF CHILE*

Objective: The aim of this study is to evaluate the utility of Magnetic Resonance (MR) in the evaluation of pulmonary regurgitation and the anatomical and functional repercussions for cardiovascular function. **Materials and Methods:** The study included patients evaluated from June 2003 to October 2007 at Catholic University Hospital for pulmonary regurgitation with cardiac MRI. A total of 12 MRI were performed in 10 patients, with ages varying between 4 and 35 years old. In our patients, the principal indications were the evaluation of pulmonary regurgitation and right ventricular function for postoperative control of Tetralogy of Fallot and pulmonary atresia. All MRI studies were performed on a 1.5 Tesla scanner. The study protocols included cine gradient sequences in distinct planes with study of ventricular function, MR Angio and flow measurements with phase contrast. **Results:** Characterization of intracardiac anatomy was obtained in all patients and morphology of extracardiac vascular structures in almost all cases with the exception of 2 patients, in which it was not possible to obtain a complete visualization of the left pulmonary artery due to the presence of artifacts caused by coils or stents. It was also possible to determine functional parameters like pulmonary regurgitation fraction, right ventricular end diastolic volume and systolic function of both ventricles in all patients. Additionally we were able to obtain the differential pulmonary flow and to evaluate the tricuspid valve function, displacement of interventricular septum and detection of left ventricular dyskinesia in most of the cases. **Conclusions:** Cardiac MR is a useful technique in the evaluation of pulmonary regurgitation fraction and right ventricular function, parameters to consider when deciding pulmonary valve replacement. It also may be useful in post pulmonary valve replacement follow up since it indicates the absence of pulmonary regurgitation and the degree of recovery of right ventricular function. Only two patients had a partial visualization of the left pulmonary artery due to the presence of artifacts caused by coils or stents.

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Early identification of preserved systolic function in acute decompensated heart failure.

E. Fairman[1–2], V. Mauro[1–2], A. Charask[1–2], Y. Castillo Costa[2], L. Rodriguez[1], M. Ferrer[1], C. Barrero[1–2]. *[1]CLINICA BAZTERRICA BS AS ARGENTINA [2]CLINICA SANTA ISABEL BS AS ARGENTINA*

Early recognition of preserved systolic function (PSF) in pts admitted with acute decompensated heart failure (ADHF) is useful for guiding therapy. The objective of the study was to evaluate if simple clinical markers at admission may help to prompt identification of PSF in pts with ADHF. 204 consecutive pts admitted to the CCU with clinical diagnosis of ADHF were included. **Results:** 2D echo evaluation of ventricular function in the first day was available in 202p; 34.7% had PSF, median age 79 yr (68.5–85), 52% men. Previous MI was seen in 31.4% of pts, hypertension in 79.4%, 58.3% had < 1 month of heart failure onset. By multiple logistic regression analysis no previous MI (noMI) OR 4.51; (95% CI, 1.94–10.51), no history of heart failure (noHF)2.99 (95% CI, 1.55–5.76) and history of hypertension (HT) 5.41(95% CI, 1.9–5.76) were independently associated with PSF. We analyzed the positive likelihood ratio (LR+) and positive predictive value (PPV)of these variables individually and in combination. In pts admitted with ADHF simple clinical markers may help to suspect PSF, and their combination adds more predictive capacity. Nevertheless the positive predictive value is still limited due to the homogeneous distribution of these markers among pts with various degrees of ventricular impairment.

VARIABLE	NoMI	NoHF	HT	NoMI +NoHF	NoMI +HT	NoHF +HT	HT +NoHF +NoMI
LR(+)	1.5	1.7	1.3	2.5	1.8	2.3	2.9
PPV	0.44	0.47	0.41	0.57	0.48	0.55	0.61

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IMPLANTABLE CARDIOVERTER DEFIBRILLATOR IN HIGH RISK PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY. FOLLOW-UP.

G. Fava[1], N Galizio[1], JL Gonzalez[1], H Casabe[1], A Fernandez[1], E Guevara[1], L Medesani[1], P Montoya[1], S Schanz[1], F Landeta[1]. [1]*Favaloro Foundation*

Background: Sudden death (SD) is the most catastrophic complication of hypertrophic cardiomyopathy (HCM). Implantable cardioverter defibrillator (ICD) has shown to be effective in prevent it. **Objective:** To analyze the efficacy of ICD in high risk patients (p) with HCM. **Methods:** Single center retrospective cohort study. From 1992 to 2007, 296 p with HCM were evaluated. Thirty seven p (12.5%) were judged to be at high risk of SD. They received an ICD for secondary prevention (SP) (aborted SD or sustained ventricular tachycardia) or primary prevention (PP) (1 or more risk factors: Non-sustained ventricular tachycardia, syncope, history of premature SD in first degree relative, interventricular septum thickness $\geq$ 30 mm, abnormal blood pressure response at exercise; left ventricle outflow tract obstruction (LVOTO): gradient $\geq$ 30 mmHg; atrial fibrillation). ICD therapy was considered appropriate (AT) when it was triggered by ventricular fibrillation/tachycardia (rate $>$ 200 bpm) and inappropriate (IT) when it was by another causes. Baseline characteristics: Age: 34$\pm$17 years; male: 22 p (59%); interventricular septum thickness: 25$\pm$8 mm; LVOTO: 15 p (40%); Left ventricle eyection fraction $<$ 50: 6 p (16%); Symptomatic: 25 p (67%); PP: 28 p (75.6%), SP: 9 p (24.4%) (SD: 7 p; sustained ventricular tachycardia: 2 p.). PP total risk factors: 2.7$\pm$0.9; major risk factors: 2.1$\pm$0.8; possible risk factors: 0.6$\pm$0.5. AT free survival curves were constructed according to the Kaplan-Meier method and compared between both subgroups by log rank test **Results:** Follow up: 30$\pm$35 months (PP: 16$\pm$24 months; SP: 67$\pm$42 months). AT: 9 p (24%) PP: 4 p (14.2%) SP: 5 p (55%). Time to the first AT was 31$\pm$31 months (0.5–79). IT: 11 p (30%) PP: 8 p (25.5%) SP: 3 p (33%). Causes of IT: Atrial fibrillation 4 p; sinus tachycardia 5 p; T wave oversensing 1 p; electrical noise 1 p. Survival at 24 months showed no statistical difference (PP: 77%; SP: 66%; p= 0.5). **Conclusion:** In this high risk study population, there were more AT in the SP group but AT free survival, at 24 months, showed no statistical difference. IT were high in both groups.

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The relationship between BNP and hsCRP and quartiles of the omega-3 index in a beef eating ACS population in Argentina as compared to a coastal ACS population in Norway.

R. Leòn De La Fuente[2,3], H. Aarsetoey[1,2], T. Brügger-Andersen[1,2], V. Pönitz[1,2], SA. Dib Ashur[3], ST. Nilsen[1,2], L. Woie[1,4], H. Staines[5], WS. Harris[6], DWT. Nilsen[1,2]. [1]*Stavanger University Hospital, Stavanger, Norway* [2]*University of Bergen, Norway* [3]*Cardiovascular Center of Salta, Salta, Argentina* [4]*Universidad Catolica de Salta, Salta, Argentina* [5]*Sigma Statistical Services Ltd., Balmullo, Scotland, UK* [6]*Sanford School of Medicine, University of South Dakota, Sioux Falls, SD, USA*

Background: B-type natriuretic peptide (BNP) is a counter-regulatory peptide hormone predominantly synthesized in the ventricular myocardium. This marker of neurohormonal activation and inflammation plays a pivotal role across the spectrum of ACS. C-reactive protein (CRP) is an acute-phase reactant that is produced in response to acute injury, infection or other inflammation stimuli. It is a marker for underlying systemic inflammation and plays an important role in the initiation and propagation of atherosclerosis and ultimately to plaque rupture and the ensuing thrombotic complication. We have investigated whether these two markers measured immediately after admission for an acute coronary syndrome (ACS) differ by quartiles of the omega-3 index [percentage of eicosapentaenoic acid (EPA) and docosahexaenoic acid acid (DHA) of total fatty acids (FA's) in red blood cells] in two ACS populations with diets either poor or rich in omega-3 FA's. **Methods:** We included 190 Argentinean patients (Salta, Argentina) (mean age 64.1y, males 65.6%) and 398 Norwegian patients (Stavanger, Norway) (mean age 72.1y, males 62.4%) hospitalized with chest pain and a documented ACS as defined by a troponin-T (TnT) $>$0.01. Blood samples were drawn immediately after admission in both populations. **Results:** Median (percentile 25–75) omega-3 index in the Argentinean population was 2.85 (1.47–4.10) as compared to 6.53 (5.45–8.04) in the Norwegian coastal population. The distribution of BNP and high sensitive CRP (hsCRP) through the quartiles of the omega-3 index in the two populations is shown in Table 1. **Conclusion:** There were no significant differences in BNP and hsCRP within and between country quartiles of the omega-3 index.

TABLE 1

	BNP			hsCRP		
Omega-3 index quartile	Mean	95%CI; Lower bound	95%CI; Upper bound	Mean	95%CI; Lower bound	95%CI; Upper bound
Norway Q1	273.18	183.17	363.20	18.40	8.99	27.80
Q2	400.63	281.00	520.27	19.59	11.47	27.71
Q3	473.52	333.75	613.30	28.24	18.00	38.48
Q4	358.34	266.92	449.76	25.10	10.55	39.65
Total	385.58	327.91	443.25	23.34	17.70	28.98
Argentina Q1	246.69	135.82	357.57	30.06	12.75	47.37
Q2	259.63	166.51	352.76	20.86	4.36	37.37
Q3	361.91	190.63	533.18	16.61	6.40	26.81
Q4	399.49	217.62	581.37	19.33	7.79	30.88
Total	316.87	246.11	387.62	21.68	14.73	28.63

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Assessment of Anemia and Renal Function in Patients with Heart Failure: A Comparison of Patients with Left Ventricular Systolic Dysfunction Versus Preserved Systolic Function

B. Sáenz[1], E Barcellos[1], H Villacorta[1], L Costa Lima[1], P Soares[1], C Wiefels[1], R Steffen[1], A Salles[1], E Tinoco[1]. [1]*Universidade Federal Fluminense*

Objective: To study the prevalence of anemia and its interaction with renal function in patients (pts) with heart failure (HF) according to the type of the ventricular dysfunction. **Methods:** We prospectively studied 209 outpatients with stable chronic HF. Pts with ejection fraction $<$ 50% were considered as having systolic dysfunction (SD). Anemia was defined according to WHO criteria as hemoglobin levels $<$ 13 g/ dl. in men and 12 g/dl in women. Renal function was assessed according to sMDRD (Simplified Modified Renal Diet Disease) criteria. Pts with anemia and at least moderate renal dysfunction named anemia cardiorenal syndrome. (ACRS). Hospitalizations, emergency and death for cardiovascular causes were considered as cardiac events.**Results:** There were 90 pts with SD and 119 with PSF. Mean age was 60,1$\pm$ 13,22 years in pts with SD and 61,17 $\pm$ 13,77 in those with PSF (p= NS). The prevalence of female gender was higher in the PSF group (66,4% vs. 43, 3%, p= 0,0007). Mean creatinine was higher in the SD group (1,19 $\pm$0,59 vs. 0,99$\pm$0,88; p= 0,004). GFR was lower in SD group (87,67 $\pm$6616 vs. 94,84$\pm$ 36,58 ; p=0,34). There was no difference in the prevalence of anemia in both groups. (23,30% vs. 18,50% ; p= 0,24). The prevalence of moderate or severe renal dysfunction was higher in SD group (31,1% vs. 16,8 % ; p=0,01). ACRS was more frequent in the SD group.(13,4% vs. 7,2%; p= 0,09). Moderate and severe renal dysfunction were associated independently with cardiac events (p=0,01). **Conclusion:** Although the prevalence of at least renal dysfunction was lower in patients with PSF, the prevalence of anemia did not differ between groups, suggesting that other factors might be involved in the genesis of anemia in pts with HF and PSF. Patients with at least moderate renal dysfunction were associated with cardiac events.

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PROGNOSTIC UTILITY OF STRESS (99M)Tc-SESTAMIBI SPECT IN RISK STRATIFICATION OF NON-ST-SEGMENT ELEVATION ACUTE CORONARY SYNDROMES

A. Dos Santos[1], C. Cortes[1], M. Daicz[1], J. Peirano[1], O. Cendoya[1], G. Marrero[1], I. Merlo[1], E. Duronto[1], E. Gurfinkel[1]. [1]*FUNDACION FAVALORO*

Background: In the last decade, a routine invasive approach has been the standard of care for non-ST-elevation acute coronary syndromes (ACS). Limited data is available on the value of stress myocardial perfusion imaging (MPI) in risk stratification of this patients. The purpose of this study was to evaluate the prognostic information of stress (99m) Tc-sestamibi myocardial SPECT to predict the long-term outcome of patients with non-ST-elevation ACS. **Methods:** We studied 203 consecutive patients who were admitted to our coronary care unit with non-ST-elevation ACS and subsequently underwent MPI before discharge. Of this, 44 patients were revascularized within one month of the study and were therefore censored from the prognostic analysis. For each patient the Thrombolysis In Myocardial Infarction (TIMI) and Global Registry of Acute Coronary Syndromes (GRACE) risk scores were determined using specific clinical variables collected at admission. Perfusion summed stress score (SSS), summed rest score (SRS) and summed difference score (SDS) were calculated using 17 segment scoring system. An abnormal study was defined as the presence of fixed and/or reversible perfusion defects (SSS $>$/=2). Cardiac death, non-fatal myocardial infarction and new admission to coronary care unit with an ACS were considered as end-point events. **Results:** The final study population consisted of 159 patients. Mean age was 64+/-11, 61% male. Low to moderate clinical risk (TIMI score $<$5) was present in 94% of the study cohort, with 13% presenting elevated troponin levels. Pharmacological stress (dipyridamole) was performed in 50% of the patients. Mean time to study acquisition was 1.9$\pm$1.5 days from admission. An abnormal MPI scan was present in 54% of the patients. During a mean follow up of 1.5 years (93% completed), 22 patients sustained either cardiac death (n = 5), nonfatal myocardial infarction (n = 3) or new admission for ACS (n = 14). Parametric survival (Kaplan-Meyer) analysis showed an elevated risk of events in patients with abnormal scan (P $<$0.003). In a multivariable stepwise Cox proportional-hazards model, the presence of abnormal MPI (hazard ratio 4.2; 95% confidence intervals 1.4–12.4; P$<$0.01) and a moderate or severe TIMI risk score (hazard ratio 3.7; 95% confidence intervals 1.03–13.2; P=0.04) were the only variables independently associated with an increased risk of events. **Conclusion:** In patients hospitalized with non-ST-elevation acute coronary syndromes of predominantly low to moderate risk, stress (99m) Tc-sestamibi myocardial SPECT is a useful imaging method for long term risk stratification, providing incremental prognostic information to clinical data.

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GRAVITATIONAL STRESS IN RAYNAUD'S PHENOMENON.

M.E. Isasi Capelo[1–2], E.S. Isasi Capelo[1–2]. [1]*Gravitational Therapy Center* [2]*Cardiology Center of Maciel Hospital, Montevideo, URUGUAY*

Background: Recurrent digital ulcers, Raynaud's painful attacks and critical ischemia allowing digital loss are major clinical problems in patients with systemic sclerosis (SSc), occurring in about one third of patients per year. In previous studies we demonstrated that: a) the endothelium critically situated at the blood-tissue interface, is an important target of gravitational stress (GS), b) GS constitutes a mechanical stimulus over the vessel wall that enhances Prostacyclin and nitric oxide (PGI2 & NO) synthesis, causes sustained vascular dilation, induces endothelial cell (EC) desquamation of impaired cells and improves the functional capacity of patients with CAD and OPA, with or without diabetes mellitus. The fact that EC damage and impaired PGI2, NO synthesis have been identified to be underlying causes

of digital ulceration and critical ischemia in patients with SS and RPh, led us to the present study. **Materials and Methods:** We analyzed the peripheral circulation and clinical evolution of 59 patients (7 male, 52 female, mean age 47±21 yrs) with SS and RPh and critical ischemia and 10 normal volunteers (NV) at baseline and after GS (protocol of hypergravity). Fourteen of the enrolled patients had prior partial or total digital amputation of 31 fingers and 65 finger necrosis occurring in 41 patients at the entrance of the study. Digital photoplethysmographic studies (DPHG) and quantification of EC in venous samples at rest and after GS were performed at the beginning of the study. Blood samples were processed with MGG for optic microscopic observation and the number of ECs was assessed counting 100 white cells. The Ethical Committee of the Center approved the study and all patients gave their informed consent. GS procedure: After training, all subjects run on the couch of a human centrifugation machine and were exposed to accelerative and decelerative profiles (0–6 "g") of rapid onset at peak acceleration and a rapid ramp back to control (protocol ROR+GZ hypergravity) for one hour, three times a week, during six weeks. **Results:** 1) An increase in pulse amplitude ($P < 0.001$) was registered after GS in both groups. 2) There was a significant difference in endothelial cell desquamation between both groups. EC in SS increased from 4.57+3.08 to 9.43+3.27 Ecs/100 WC ($P < 0.001$). In NV no significant EC desquamation was observed. 3) Clinical evolution. Since the beginning of the treatment, patients achieved pain relief, reduced the Raynaud's Attacks, had beneficial effects in healing their ulcers and avoiding the digital amputation of 58 fingers. The follow-up of these patients was 43+15 months and all received between 10 to 20 sessions of gravitational therapy by year prior to winter as a maintenance treatment. In 54 patients (91.5%) ulcers or new digital necrosis did not recur during the follow-up. **Conclusions:** GS as a therapy had notorious beneficial effects in painful Raynaud's attacks, healing digital ischemic lesions and avoiding the digital amputation in patients with systemic sclerosis.

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Heart rate recovery after a cardiovascular rehabilitation program

R. Peidro[1], **P Diaz Uberti** , G Brión, A Angelino, E Navia, D Motta, F Peidro, M Santa María, R Lowenstein, R Favaloro. *[1]Favaloro Foundation [2]Favaloro Foundation [3]Favaloro Foundation [4]Favaloro Foundation [5]Favaloro Foundation [6]Favaloro Foundation [7]Favaloro Foundation [8]Favaloro Foundation [9]Favaloro Foundation [10]Favaloro Foundation*

Introduction: the abnormal heart rate recovery post exercise (HHR) has demonstrated to be a strong predictor of cardiovascular and all cause mortality in patients with and without cardiovascular disease (CVD). Exercise training could improve the HRR through increasing vagal tone. **Objectives:** evaluate the impact of a cardiovascular rehabilitation program (CRP) on the HHR in patients with CVD. **Method:** a prospective study was performed in patients (p) with CVD included in 12 weeks CRP. Exercise testing (ET) was performed at entry and after CRP. HRR at first (HRR1) and second minute (HRR2) were registered (HHR1 & 2: maximal exercise HR – HR at 1° and 2° minute post exercise, respectively). **Results:** 33 p (82% males) with age 61 ± 9.9 years completed 12 weeks CRP. **Conclusions:** The improvement of HRR 1 and 2 could reflect the effect of training on the vagal and sympathetic tones. The HRR after exercise testing is a parameter that should be registered in patients during CRP to evaluate autonomic tone improvement and to stratify risk of cardiovascular events.

	Basal	12 weeks CRP	p
Resting heart rate (bpm)	68.27± 12.77	68.61± 11.45	0.863
Peak heart rate (bpm)	135.45± 20.81	137.48± 19.09	0.506
HRR 1 (bpm)	26.61± 9.27	26.3± 11.61	0.007
HRR 2 (bpm)	36.55± 11.32	43.82± 14.49	0.001
Exercise capacity (METs)	9.59± 2.44	10.55± 2.6	0.0001

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NON-PHARMACOLOGICAL PREVENTION OF ATRIAL FIBRILATTION AFTER OFF-PUMP CABG: TEMPORARY ATRIAL EXTERNAL STIMULATION

F. Silva[1], P. Brofman[1], R. Milani[1], D. Précoma[1], M. Guimarães, L. Barbosa, A. Sartori, J. Augusto Souza. *[1]PONTIFÍCIA UNIVERSIDADE CATÓLICA DO PARANÁ,.*

Background: Postoperative atrial fibrillation (AF) occurs in 30% of patients undergoing CABG, increasing risk for stroke and heart failure, delaying patient discharge and, consequently, increasing hospitalization cost. Pharmacological strategies frequently fail to prevent AF and are not fully safe. We hypothesized that temporary bi-atrial pacing with an external device can be a safe and effective approach for AF prevention **Methods:** We developed an external Pacebox, using Integrity™ DR pacemaker (St Jude Medical), programmed with AF Suppresion™ Algorithm. After off-pump CABG, two electrodes were placed in each atrium and two in right ventricle, and all connected to the external device. Ninety-eight patients were randomly assigned for continuous bi-atrial pacing (pacemaker on) or no pacing (pacemaker off). **Results:** In 49 non-paced patients, 18 (36,73%) presented AF, whereas only 7 (14.29%) out of 49 in the paced group ($p=0.0194$). Length of stay at the hospital was significantly higher in patients who presented AF. In paced group, patients with AF stayed 9.2"b2,87 days vs. 6.8"b2.7 days compared to those without AF ($p=0.04$). In non-paced patients, stay was 9.6"b2.2 vs. 6.9"b2.4 in patients with and without AF respectively. **Conclusion:** There was a trend for reduction in AF incidence in patients who received temporary atrial stimulation. Patients who developed AF had a longer hospitalization. Since there's a considerable cost increase for each additional day at hospital, temporary external atrial stimulation with AF Suppression algorithm can be a safe and cost-effective option for reducing costs related to off-pump coronary artery bypass surgery.

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Predicting Elevated C-Reactive Protein Levels by Body Mass Index and Waist Circumference in Type 2 Diabetes Patients

A. C. Cordeiro[1], I. Castro[2], C. C. Gonzaga[1], M. G. Sousa[1], F. O. Borelli[1], O. Passarelli Jr[1], L. Lotaif[1], L. S. Piegas[1], C. Amodeo[1]. *[1]Instituto Dante Pazzanese de Cardiologia [2]Universidade de São Paulo*

Body adiposity, in type 2 diabetes subjects (DM2), is an important C - Reactive Protein (CRP) levels determinant. Body Mass Index (BMI) and Waist Circumference (WC) are reliable fat indicators that can be easily determined in clinical practice. Thus, we aimed at evaluate in DM2 patients (pts) whether elevated CRP levels can be predict by clinical assessment of BMI and WC and establish the best cut-point for this purpose. Ninety DM2 pts (40 males, age 61±9 years) were evaluated. According to the high-sensitivity CRP levels (< 3.0 mg/L or ≥3.0 mg/L) we performed a ROC analysis to determine the best cut-points to differentiate BMI and WC between pts with normal or elevated CRP. There were 52 pts with CRP levels < 3.0 mg/L and 38 with ≥3.0 mg/L. CRP levels were positively correlated with BMI and WC ($p<0.001$). The area under the ROC curve was 0.749 ±0.054 for BMI and 0.733±0.056 for WC ($p<0.001$± for both). We found a cut-point of 31 Kg/m2 for BMI (sensitivity/specificity= 68% / 73%) and 106 cm for WC (sensitivity/specificity=76% / 67%). Pts were divided according the presence (Group A, n=36) or not (Group B, n=54) of both parameters. The groups were different regarding CRP levels (3.4mg/L vs 1.1mg/L; A vs B respectively, p=0.02), BMI (36 Kg/m2 vs 28 Kg/m2, $p<0.001$), WC (118cm vs 99cm, $p<0.001$), creatinine clearance calculated by Cockroft-Gault equation (91ml/min vs 60 ml/min, A vs B respectively, $p<0.001$) and metformin use (32 vs 34 pts, A vs B respectively, p=0.007). There were no other differences in clinical or laboratorial parameters. We conclude that BMI and WC are reliable predictors of CRP elevation in DM2 pts, and in this set BMI 31Kg/m2 has more specificity and WC 106cm more sensitivity.

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Nocturnal blood pressure pattern in obese patient with and without sleep apnea

G. Simonyi[1], JR Bedros[1], M. Medvegy[2]. *[1]5th Dept. of Internal Medicine, Hypertension and Lipid Centre, Kistarcsa, Hungary [2]National Health Center, Cardiology, Budapest, Hungary*

Introduction The role of hypertension in the cause of vascular disease and the beneficial effects of antihypertensive treatment in preventing cardiac disease and stroke are well known. Kario et al demonstrated a J-shaped relationship between nocturnal BP decline, silent cerebrovascular damage, and stroke incidence in elderly asymptomatic hypertensive patients divided into nondippers, dippers, and extreme dippers, with the extent of cerebrovascular damage being most advanced in the extreme dipper group and least severe in the dipper group. Our aim was to investigate the prevalence of extreme dipping pattern with ambulatory blood pressure monitoring (ABPM). **Patients and methods** We investigated 1417 patients with ABPM. The criteria of extreme dipping were nocturnal blood pressure fall ≥20%. We assessed the circadian pattern of blood pressure BP); we measured the body mass index, waist and hip circumferences, serum lipids. **Results** From this population we found 81 patients (5.72%) with extreme dipping pattern. Age 46.8±13.01 years, body mass index was 29.7±5.95 kg/m^2. The waist circumference was 108.3±10.56 cm. The 24-hour systolic BP was 126.17±14.93 mm Hg whereas diastolic was 73.61± 10.95 mm Hg, the pulse was 70.70±8.72 beat/min. The systolic diurnal index (DI) was 23.14±2.89% and diastolic DI was 27.08±5.07%. The serum cholesterol level was 6.9±1.53 mmol/l, the LDL-cholesterol level was 4.01±2.02 mmol/l, the HDL-cholesterol level was 1.17±0.31 mmol/l and the triglycerides level was 3.47±2.52 mmol/l. We found significant difference between dipper and extreme dipper group between 24-hour systolic and diastolic blood pressure variability ($p<0.0001$), daytime systolic blood pressure ($p<0.05$), waist circumferences ($p<0.001$). **Conclusions** ABPM is only the choice to investigate (non-invasive) the circadian rhythm of blood pressure. If we found extreme dipping pattern of BP we must seek other risk factors for cardiovascular events.

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Glutathione peroxidase, superoxide dismutase, TNF-alpha, CRP and VCAM-1 are markers of metabolic syndrome

T. Francuz[1], **J. Gminski[1]**, K. Siemianowicz[1], M. Goss[1], J. Kopec[1]. *[1]Silesian Medical University, Katowice, Poland*

Metabolic syndrome is defined as a constellation of dyslipidemia, elevated blood pressure, impaired glucose tolerance, and central obesity. The prevalence of metabolic syndrome varies by definition used and population studied; the etiology of the metabolic syndrome has not been established definitively, yet. The aim of the study was to compare the concentration of biochemical markers of oxidative stress and inflammatory status in patients with newly diagnosed metabolic syndrome and matched controls; the other aim was to found predictors of the syndrome with additional value to the present diagnostic criteria. **Patients and methods:** In the study we enrolled 40 non-smoking patients: 20 patients with newly recognized metabolic syndrome with fulfilled all NCEP ATP III diagnostic criteria, and 20 age, BMI and WHR-matched patients without the syndrome. In all patients glutathione peroxidase (GPx), catalase (CAT), superoxide dismutase (SOD), VCAM-1, hsCRP and TNF-alpha were determined using commercially available kits. Inter group comparisons were conducted using Kruskal-Wallis ANOVA. For choosing the best predictors of metabolic syndrome among checked parameters discriminant function analysis was performed. **Results:** Patients with the syndrome had statistically significant elevations of VCAM-1 (886,38±237,2 vs. 1029,89±177,8; $p<0,05$), CRP (0,20±0,12 vs. 0,44±0,37; $p<0,05$) and TNF-alpha (18,83±7,24 vs. 25,18±11,0; $p<0,05$), SOD (1072±173 vs. 1303±326; $p<0,01$) and decrease of GPx (44,04±16,38 vs. 31,19±12,01; $p<0,01$). CAT was not statistically different between groups (216,9±48,3 vs.

205,6±26,4; p=n.s.). Using discriminant functions analysis we found that HDL glucose, diastolic pressure, SOD, TNF-alpha and catalase were the strongest predictors of metabolic syndrome in tested groups and had the best distinguishing power. **Conclusions:** In conclusion, patients with newly diagnosed metabolic syndrome had disturbed antioxidant status and elevated levels of proinflammatory factors, such as TNF-alpha, CRP and VCAM-1. Some of the measured parameters could be used as predictors of metabolic syndrome with additive value to present criteria such as HDL, triglycerides concentration, obesity and blood pressure.

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LDL-c, HDL-c and glucose optimization using phytonutrient combination therapy in diabetes

I. Martinez[2], B. Horne[2], **P. Verdegem[1]**. *[1]Unicity International, Orem, UT, USA [2]Blue Mesa Medical Associates, Katy, TX, USA*

Introduction: Phytonutrient therapy options to management of lipid and glucose parameters in diabetes is gaining popularity among patients. Monotherapy with dietary ingredients has shown positive effects, but with limited clinical relevance. Our research focuses on using a phytonutrient combination in optimizing lipid and glucose parameters. All four ingredient groups have individual data supporting their use for optimizing lipoprotein fractions in hypercholesterolemia. This pilot study evaluates their combined efficacy in type-II diabetes. **Methods:** A group of 34 subjects with established type-II diabetes and hypercholesterolemia added the product to their diet. The drink was taken thrice daily 15–20 minutes before meals. The fiber drink consists of viscous soluble fiber, minerals, vitamins, policosanol, phytosterols, an aqueous Chrysanthemum morifolium extract and vitamins and minerals at or close to the RDA level. The ingredients combine 4 mechanisms to lipid lowering, including bile acid sequestration, dietary absorption inhibition, and HMG-CoA reductase inhibition. Lipid and glucose parameters were measured at baseline, 4 and 8 weeks. **Results:**

Parameter	Inclusion at BL	BL (mg/dl)	t=8 wks (mg/dl)	change (%)	p-value
TC	All	208	178	-14.2	<0.01
TC	>200	245	195	-21.5	<0.001
LDL-c	All	127	104	-18.3	<0.05
LDL-c	>160	197	141	-28.9	<0.005
HDL-c	All	46	48	+3.5	n.s.
HDL-c	<40	35	40	+14.4	n.s.
TG	All	182	143	-21.3	n.s.
TG	>150	242	163	-32.5	<0.05
Glu	All	162	134	-17.3	<0.05
Glu	>175	218	155	-28.9	<0.05
HbA1c	All	7.2	6.6	-9.4	<0.05
HbA1c	>8	9.2	7.8	-15.8	<0.05

HbA1c measurements after 12 weeks.

Conclusion: BiosLife, a phytonutrient combination drink, shows potential in optimizing parameters associated with cardio vascular disease risk in type-II diabetes. These findings are well in line with previously reported clinical results. The fiber component has reduced the post-prandial glucose levels and the resulting lower HbA1c levels indicate that BiosLife provides a natural option to improve diabetes management. This test product shows promise in offering an alternative for patients that can not tolerate or voluntarily refuse to take statin medication.

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Influence of myocardial ischemia and the number of obstructed coronaries at major coronary events in patients submitted to medical treatment only.

T. Carvalho[1], M. Benetti[2], A. L.C. Hallal[3], A.J. Mansur[4]. *[1]Universidade do Estado de Santa Catarina [2]Universidade do Estado de Santa Catarina [3]Universidade de São Paulo [4]Universidade de São Paulo*

Purpose: To evaluate the influence of myocardial ischemia and the number of coronaries with obstructions in main outcomes incidence at major coronary events (myocardial infarction and death of cardiac cause), in patients recruited to a cardiac rehabilitation program, who were previously submitted to medical treatment only. **Method:** A cohort study of 118 patients with critical coronary obstructions, 97 (82%) men, 56.5 + 9.6 years old, without previous interventional treatment, who regularly attended a supervised cardiac rehabilitation program, for at least three months. The patients were categorized by the evidence of ischemia on exercise stress testing and by number of coronaries with critical obstructions on arteriography. **Results:** The incidence of events was 7, 9% and the probability did not differ statistically when the two groups were compared by ischemia and number of obstructed coronaries. Respectively, in groups with and without events, the prevalence of ischemia was 55, 9% and 57, 2% (p=0, 95 NS, CI 95%). Respectively, in groups with and without events, the prevalence of uniarterial disease was 44, 2% and 44, 4% (p=0, 99 NS, 95% CI), biarterial disease was 37, 9% and 33, 3% (p=0, 80 NS, CI 95%) and triarterial disease was 16, 3 and 22, 2% (p= 0, 77 NS, CI 95%). **Conclusion:** Exclusively medical treatment administered to patients with coronary artery disease in a supervised cardiac rehabilitation program is shown to be a therapeutic option without additional risk of adverse result for patients with evidence of ischemia and obstruction in more than one vessel.

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Acute Coronary Sindromes without significant coronary lessions: clinical profile and long term outcome.

C. Cabrera[1], D. Barranco[2], A Spinelli[3], G Vignolo[4], J.C Hiriart[5]. *[1]Centro Cardiológico del Sanatorio Americano, Montevideo,Uruguay [2]Centro Cardiológico del Sanatorio Americano, Montevideo, Uruguay [3]Centro Cardiológico del Sanatorio Americano, Montevideo, Uruguay [4]Centro Cardiológico del Sanatorio Americano, Montevideo, Uruguay [5]Centro Cardiológico del Sanatorio Americano, Montevideo, Uruguay*

Objective: identify clinical variables associated with acute coronary sindromes (ACS) without significant coronary lessions and establish the outcome of this entity. **Methods:** 160 consecutive patients with ACS submitted to coronary angiography in a tertiary cardiology center, with no significant coronary lessions (less than 20% diameter stenosis) were included between january 2003 and june 2004 and followed-up for 3 years. Clinical presentation, cardiovascular risk factors, ventricular function assessed by echocardiography and medical treatment were analized. **Statistical Analysis:** cualitative variables are expressed in percentages and Chi square and Fischer exact test were used. Cualitative simetric variables are expressed in average and standard deviation, and compared with t Student test. **Results:** 1382 patients with ACS were analized. 160 (12%) had normal coronary angiography or non significant coronary lessions. Clinical characteristic were distributed as follows: female gender 58%, age 57±11years, hypertension 62%, hypercholesterolemia 36% and smokers 27%. Clinical presentation included: unstable angina 83%, acute myocardial infarction 12% and others 5% (sincope, congestive heart failure). EKG on admission was normal in 48%, T wave inversion was found in 26%, ST depression in 12%, ST elevation in 7.5%. Positive biomarkers were found in 4.4%. Eyection fraction was normal in 93%. Recurrent angina occurred in 31% (12% in the first year and 19% thereafter) being more frecuent in smokers (p=0.023) and sedentary patients (p=0.05) and less frecuent in statin treated patients (p<0.0001). In 6% readmission was required. At the end of the follow-up period fewer patients were receiving cardiovascular drugs, specially angiotensin converting enzime inhibitors (p<0.0001) and calcium channel blockers (p<0.0001). 3 year mortality was 1.8% (3 patients) and all the cases were due to non cardiac causes. **Conclusions:** Patients with ACS without significant coronary lessions have a benign prognosis, with no cardiovascular death in this population. Statin therapy, physical activity and smoking cessation should be considered in the long term treatment of this patients.

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Surgery for coarctation of the aorta in prematures weighting less than 1.900 kg.

R. De Rossi[1], E Juaneda[1], G Campos[1]. *[1]Cardiovascular Unit, Children's Hospital, Córdoba. Argentina*

Low birth weight neonates are now candidates for reparative cardiac surgery. But there are only a few publications of the outcome of aortic coarctation repair in this selected group of patients. Between july 2002 and july 2007 six prematures with birth weigth less than 1.900 kg were operated for severe aortic coarctation in our unit. The gestational age ranged between 30 and 34 weeks and the birth weight ranged between 1.100 and 1.900 kg. One patient had ventricular septal defect and one baby had complex extracardiac malformations with deteriorated ventricular function. All received prostaglandins E 1, four needed dopamine and four were on ventilatory assistance. The methods of repair undertaken were: resection and extended end to end anastomosis (2), subclavian flap angioplasty (3), and patch repair (1) **Results** There was one in hospital death (the polymalformated baby), no patient died late post operatively. The mean follow up was 31,8 months (range 1 to 55). One baby developed recoarctation two months after surgery and underwent balloon dilatation. One patient have a mild Doppler gradient (12 mm Hg.). **Conclusions** Coarctation repair in prematures less than 1.900 kg can be performed safely. Pre operative ventricular function and the association with non cardiac malformations may influence the surgical outcome. It's not necessary to delay the surgical timing waiting the growth of the patient.

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Detecting subclinical alterations in early stages of Chagas's disease through Holter

D. S. Andres[1], I.M. Irurzun[1], M.M. Defeo[2], E.E. Mola[1], J. Mitelman[3], L. Gimenez[3], G. Ranchilio[2], P. Velazco[2], J. Armentano[2]. *[1]Facultad de Ciencias Exactas. Universidad Nacional de La Plata (INIFTA, CONICET). Argentina. [2]Hospital Interzonal General de Agudos "Prof. R. Rossi". La Plata. Argentina. [3]Hospital General de Agudos "T. Alvarez". Instituto Universitario de Ciencias de la Salud, Facultad de Medicina, Fundación Barceló. Buenos Aires. Argentina*

Introduction 30% of the people infected with Chagas develop symptomatic cardiac disease, including heart failure and potentially lethal arrhythmia. Following infection there exists an asymptomatic period of about 15 years, called indeterminate period (IP). Currently a method to predict which patients in IP will evolve to cardiopathic stages is not available. **Objective** The purpose is to test a new HRV measure (False Nearest Neighbor Fraction at dimension 10, FNNF10) for the identification of early subclinical cardiac alterations in Chagas's disease and compare it to standard HRV indexes (RMSSD and pNN50). **Methodology** We studied 47 patients with Chagas's disease and compared them to 59 healthy individuals used as control group (CG). All patients were diagnosed and classified in three groups: indeterminate period (IP - n=22), class A (A - arrhythmia or electrical abnormalities without structural heart disease, n=16) and class B (B - including dilatation and structural heart disease, n=9). 24h Holter recordings were taken by using a DMS300–7 digital recorder. We then constructed RR interval time series. We calculated standard HRV indexes (RMSSD and pNN50) and the recently developed FNNF10. The last results from applying the false nearest neighbor method (FNN), which was designed to find

the embedding dimension of a time series, and from considering the value of FNN at dimension 10. It is not a statistic index, but a nonlinear measure. **Results** RMSSD discriminated between control and patients of either class A or B ($p<0.001$), and showed moderated discriminative power between IP and classes A or B ($p=0.02$). It did not distinguish between CG and IP ($p=0.66$) or between different stages of chagasic chronic disease (A vs. B $p=0.92$). pNN50 did not show discriminative power for any of the groups studied (CG vs. B $p=0.11$, CG vs. A $p=0.41$, CG vs. IP $p=0.66$, IP vs. B $p=0.39$, IP vs. A $p=0.77$, A vs. B $p=0.66$). The FNNF10 allowed to discriminate between class A or B and CG ($p<0.0001$) and also showed a slight difference between IP and class B ($p=0.09$). It did not show any differences between A and B groups ($p=0.37$) or IP and A ($p=0.38$). It showed a moderate difference between CG and IP ($p=0.04$). Significantly, the dispersion in the IP was high, which shows a disparity in behavior in these patients. This is in agreement with the different possible evolutions of the disease. **Conclusion** Between the RMSSD, pNN50 and FNNF10, the last was the only tested index able to show some difference between IP and control individuals. Among IP patients it showed high dispersion. This fact can help to identify patients whose behavior is more similar to individuals of A or B classes than to healthy ones. They could have a higher risk of developing cardiopathy. Follow up of these patients is necessary to further test this hypothesis.

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A new approach for percutaneous intervention of ostial right coronary artery lesions. Feasibility of the Floating Wire Technique

G. Carvalho[1–2], V. Daher Vaz[2–3], J. M. Dias De Azeredo Bastos[1–2], S. Pontes Câmara[1–2], S. Rassi[2], A. Carvalho Leme Neto[4]. *[1]CACI-SANTA CASA DE GOIÂNIA - GO-BRAZIL [2]HOPITAL DAS CLÍNICAS -UFG - GO-BRAZIL [3]ANIS RASSI HOSPITAL -GO- BRAZIL [4]HOSPITAL SANTA CRUZ - CURITIBA-PR-BRAZIL*

Introduction: Ostial right coronary artery lesions angioplasty have lower procedural success, higher restenosis and complication rates compared to non-ostial lesion. Mostly because it is more difficult to position the stent at the right spot whereas often there is ostium trauma and pressure damping. In the Floating Wire technique (FW), a second 0,014" is left floating in the aorta root in order to prevent the contact of the catheter and the diseased artery. **Objective:** The aim of this study is to show the feasibility of the floating wire technique (FW) in ostial right coronary artery angioplasty. **Methods:** From january to september 2007 we selected all patients (36p) who had underwent right coronary artery intervention in two hospitals. Procedure dye volume(V), procedure time (PT), CK-MB levels and new "Q" MI were analyzed. We form two groups according to lesion location: 12 (34%) patients had ostial lesions and 24 (66%) have not. We compared the treatment of patiens with ostial lesions versus patients with non-ostial lesions. Mann-Whitney U test and x 2 assay were used to the statistical analysis. **Results:** Overall 24 (67%) p were women, mean age was 63,6+10,44, 25(69%) had hypertension, 6(17%) were diabetic and 19(53%) used to smoke. The right coronary artery was dominant in 32(89%) cases. The mean left ventricle ejection fraction was 53,9%+9,8 There was no significant difference between groups in baseline characteristics The FW was used in all cases with OL. The procedure success rate was 100% in both groups. Mean V (61,3+11,5 vs. 62,6+17,3 ml, $p=0,97$) and PT (25+7,5 vs. 26,9+9,3 min, $p=0,51$) were virtually the same. Post procedure CK-MB increased significantly in only one patient for each group ($p=0,88$) and so was the "Q" MI ($p=0,65$). There no other early major complications in neither group. **Conclusion:** In this pilot study, the FW technique for the treatment of ostial right coronary artery lesions was safe and effective. There were no significant differences in acute complications and procedure success rates between ostial and non-ostial lesions.

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Enhanced basal and exertional isometric diastolic function in resistance training athletes

E. Fisman[1], Y Adler[1], N Koren-Morag[1], D Tanne[1], E Lasry[1], A Tenenbaum[1]. *[1]TEL-AVIV UNIVERSITY*

Background: It is widely accepted that individuals involved in sports characterized by intense resistance training present with an increased absolute left ventricular (LV) wall thickness and mass and show a good systolic response to isometric exercise. Despite these well-established characteristics, there is no consensus regarding the diastolic features; rest diastolic function was described to be either normal, improved, or even diminished. Moreover, no information is available regarding diastolic function in athletes during isometric exertion itself. Therefore, our aim is twofold: 1) to assess the basal diastolic left ventricular function in athletes engaged in resistance training, and, 2) to evaluate the exercise-induced modifications in diastolic function while performing isometric exercise in these athletes, as compared with healthy untrained individuals. **Patients and Methods:** The population consisted of 96 men (mean age 29±7 years): 48 weightlifters (W) who trained 15–20 hours/week and 48 sedentary (S), not engaged in any kind of routine training. All weightlifters had been active for >6 years, including the 6 months prior to the study. Ultrasound was performed using a commercially available echocardiographic Doppler system. Isometric exercise was performed in the supine position using a standard 2-hand bar dynamometer, i.e. a telescopic bar designed to be stretched simultaneously by both hands, determining the force in kilograms on a scale. **Results:** End-diastolic volume at rest was 97±6 ml in S and 101±5 in W, augmenting to 100±6 and 118±11 at exercise ($p<0.001$ and $p<0.0001$ respectively). End-systolic volumes at rest were similar in both groups, showng a significantly greater reduction during exercise in the weightlifters. Absolute left ventricular mass was 167±30 g in S and 202±32 in W ($p<0.0001$). Stroke volume increased from 65±7 to 86±7 ml in S and from 70±6 to 107±11 in W (intergroup significance $P<0.0001$ for both rest and exercise). A similar pattern of response was documented for ejection fraction, i.e. a significantly greater increase during exercise for the W group. Doppler diastolic indexes were peak early velocity (PEV, cm/s), peak atrial velocity (PAV, cm/s), early-to-atrial velocity ratio (EAR), acceleration time (AT, ms), acceleration rate (AR, cm/s/s), isovolumic relaxation time (IRT, ms), deceleration time (DT, ms) and deceleration rate (DR, cm/s/s). Out of these indexes, in the W group rest PEV was 68±7, EAR 1.8±0.2, AR 1242±176 and DR 414±44. All these values were significantly higher than those in the S group, with further increase during exercise ($p<0.0001$). The remaining indexes were higher in the S group ($P<0.0001$ for rest and exercise). **Conclusion:** These data demonstrate that despite the increased LV mass, basal diastolic function in resistance athletes is adequately preserved. Furthermore, athletes' Doppler parameters responses to isometric exercise exhibit quantitative differences compared with sedentary men, being consistently better than in the latter. These findings regarding the existence of training-dependent changes should be taken into consideration when using Doppler-derived indexes for clinical purposes.

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The atrial vulnerability parameters of lone atrial fibrillation patients with subclinical hypothyroidism

N Komiya[1], S. Seto[1], S. Fukae[1]. *[1]Department of Cardiology, Nagaasaki University Hospital*

Thyroid function is one of the important influential factor on atrial vulnerability. Subclinical hypothyroidism (SHT) is defined as an asymptomatic state characterized TSH level greater than 4.0 microU/L in the presence of a normal free thyroxine level. SHT is a very common disorder that may decrease the cardiac performance and alter electrical and structural conditions. We exam whether SHT and lone atrial fibrillation (LAF) coexist and evaluated atrial vulnerability parameters in LAF patients with SHT. **Methods:** Our study included 140 lone AF patients, which consisted on 90 men and 40 women, age from 38 to 81 years old, mean age 60 years old. All patients underwent electrophysiological studies and were evaluated for thyroid function at our institutes. No patients organic heart disease, cardiovascular accident were admitted to our studies. The following atrial vulnerability parameters were evaluated, the incidence of abnormal atrial electrocardiogram, effective refractory period (ERP), maximal conduction delay between high lateral RA to CS distal (MCD), maximal duration of fractionated atrial activity of right appendage(MFAA). **Result:** SHT group was observed 14 patients (10%) in our LAF patients. The other patients had normal TSH, FT3, and FT4, which we call Normal group. There is significant correlation between the CRP and TSH, MCD, and MFAA, respectively ($r2= 0.23, 0.18, 0.39, P<0.05$). **Conclusion:** SHT shares about 10% in LAF patients. Moreover, this group of patients showed a unique electrophysiological feature, such as more prolonged intra- and inter-atrial conduction delay and more prolonged fractionated atrial activity induced by atrial extra stimilus. This suggests that LAF with SHT can be categorized as a subgroup, more increase the conduction delays in atrium, which reflect that SHT patients have altered anatomy with fractionated, slow and anisotropic conduction that renders patients with this electrophysiological abnormality vulnerable to develop af.

	SHT	Normal	P value
N (M/F)	14 (10/4)	126 (80/46)	
Age (yo)	61.7 +/- 13.5	57.0 +/- 14.3	NS
Free T3 (pmol/L)	3.90+/- 0.90	3.88+/- 0.57	NS
TSH (micro IU/mL)	5.19 +/-1.43	1.70 +/-1.30	P < 0.001
Incidence of AAE (%)	68	38	P < 0.05
ERP (ms)	202 +/- 37	205 +/- 31	NS
MCD (ms)	89+/- 53	50+/- 35	P < 0.05
MFAA (ms)	57 +/- 33	33 +/- 25	P < 0.05
Left Atrial Dimension (mm)	37.6+/- 7.5	36.1 +/- 7.2	NS
Left Ventricular Diastolic Dimension (mm)	55.3+/- 7.9	51.4+/- 6.5	NS
CRP (mg/dl)	3.38+/-0.92	0.36+/-0.41	P < 0.05

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Insulin Resistance and Clustering of Cardiometabolic Risk Factors in Brazilian Adolescents: Effect of Body Weight

I C Guimaraes[1], AM Almeida[1], R Rocha[1], AG Bittencourt[1], A Guimaraes[1]. *[1]Postgraduate Course in Medicine and Health, Federal University of Bahia, School of Medicine*

Background: The prevalence of childhood obesity has considerably increased and become a major public health problem. Obesity plays a central role in insulin resistance (IR), which has been implicated in a cluster of cardiovascular risk factors called metabolic syndrome (MetS). It's also important to know the link between IR and these risk factors in order to improve preventive and therapeutic strategies. **Objectives:** i) To evaluate the association of weight status and IR, determined by HOMA-IR, and the cluster of cardiovascular risk factors (CVR) in adolescents; ii) To determine the prevalence of IR and cluster of CVR, by weight status; iii) To determine the association between IR and MS. **Design:** cross sectional study. **Methods:** 470 adolescents, from four public and three private schools in Salvador, with 112 obese, 166 overweight and 192 high normal. The risk variables were: waist circumference (WC), blood pressure (BP), total cholesterol, HDL-C, LDL-C, TG, TG/HDL-C ratio, fasting insulin, fasting plasma glucose and HOMA-IR. Mean values were compared by the Student t test and ANOVA; the X^2 test was used to compare proportions. To measure the strength of association between variables, the Pearson's correlation and Prevalence Ratio (PR) were used. **Results:** 282 (56.7%) were girls, age 13. 0± 2.0. The percentage of high values from WC, BP, TG, TG/HDL-C ratio, insulin and HOMA-IR increased in parallel with BMI ($P= 0.000$) and HDL-C decreased ($p=0.000$). There was a significant predominance of obese boys (61.6%[$P=0.000$]). The prevalence of IR was (13.2%). There was a significant correlation of HOMA-IR with BMI, WC, BP, TG, TG/HDL-C ratio and particularly with insulin levels ($r= 0.987, P=0.01$). PR of WC >p75 for RI was 3.9 (95%CI 1.6–9.4). One risk factor occurred in 30.4% and four risk factors in 60.6% of obese adolescents. The prevalence of MetS was 20.4%, associated to IR in 31(32.3%), 80.7% obese, 64.5% with IR and 56.3% with MetS. **Conclusions:** Increase in BMI was strongly associated to IR and to CVR cluster. HOMA-IR alone wasn't capable to distinguish MetS. The association of MetS and IR characterized a high risk group. The use of waist circumference for the prediction of IR among children and adolescents has significant clinical use.

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COMPLEX AORTIC COARTATION ANGIOPLASTY WITH PTFE-COVERED BALLOON EXPANDABLE STENT

M. Granja[1–3], L. Trentacoste[2–3], J. Damsky Barbosa[1–3], V. Lucini[1–3], M. Rivarola[2–3].
[1]HOSPITAL DE PEDIATRIA P. ELIZALDE [2]HOSPITAL DE NIÑOS R. GUTIERREZ [3]HOSPITAL ITALIANO DE BUENOS AIRES

Objective: To evaluate the feasibility, immediate results, and short-term follow-up, of complex forms of aortic coarctation treated by angioplasty with implantation of PTFE-covered balloon expandable stents **Background:** Balloon and Balloon-Stent angioplasty had been proposed for treatment of aortic coarctation. In complex forms of aortic coarctation those have the risk of aortic rupture and aneurysm formation. PTFE-covered balloon-expandable Stents utilization is proposed to avoid these complications. **Methods:** From March 2003 to May 2007 64 patients were treated with the implantation of 68 PTFE-covered Cheetham-Platynum (CP) Stents (Numed). All patients presented complex forms of aortic coarctation with 1 or more of the following high-risk issues: 1.severe and extended, 2.itsmic hypoplasia, 3.near atresia or atresia, 4. Association with large PDA, 5.association with aneurysm, 6. Age $>$ 45 years old. Age of the patients was 7–67 y.o (mean 19.3) and all were $>$ 25 kg. Procedure was performed under general anesthesia in children and sedation and analgesia in adults. Access was percutaneous femoral in all, combined with braquial access in 6. Sheath size was 10–14 French and stents were mounted on BIB balloon (Numed). All Patients were discharged at 24–72 hours of the procedure with previous NMR control **Results:** Systolic gradient at coartation level dropped from 40 +/- 18 mmHg to 5+/- 5-post angioplasty. **Complications:** bleeding that required Blood Transfusion 2 Pt. Persistent thoracic pain: 2pt. Aortic perforation that required second stent 1 pt Femoral hemathoma and pseudo aneurysm 1 pt. Follow-up was 6m – 5 years (mean 2.8 y.). No late complications or reestenosis occur. 1 pt required redilation 4 yearsafter the procedure, due to body growth. All patients required a lower dose of antihypertensive medication or it could be suspended. **Conclusions:** PTFE covered Balloon expandable stents allows to perform percutaneous angioplasty even in complex aortic coartations, with excellent immediate results, with few complications even in patients with atresia or near atresia of aorta.

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A meta-analysis of trials of Omega-3 fatty acids supplementation in cardiovascular diseases.

A. Macchia[1], R Marchioli[1], R Marfisi[1], H Doval[2], S Varini[2], D Nul[2], H Grancelli[2], PD Comignani[3], JJ Fuselli[4], G Tognoni[1]. *[1]Consorzio Mario Negri Sud. Santa Maria Imbaro. Italy [2]Fundacion GESICA. Buenos Aires. Argentina [3]Hospital Aleman. Buenos Aires. Argentina [4]Centro de Educacion Medica e Investigaciones Clinicas CEMIC. Buenos Aires. Argentina*

Systematic reviews of randomised controlled trials (RCT) regarding the cardioprotective effect of Omega-3 fatty acids (n-3 PUFA) did not distinguish the effect of docosahexaenoic acid / eicosapentaenoic acid (DHA/EPA) of those of a-linolenic acid (ALA) and does not differentiate baseline fish consumption among other clinical variables. To systematically review the evidence of the effect of n-3 PUFA on total mortality (M), sudden death (SD) as well as fatal (FMI) and non fatal myocardial infarction (NFMI), differentiating the effects of DHA/EPA to those of ALA and discriminating the effect by baseline fish consumption. We overviewed all randomized trials of n-3 PUFA supplementation published from 1/1950 up to 1/2007. Treatment effects for M, SD, FMI and NFMI were evaluated as relative risks (RRs) according to the inverse variance fixed-effect method. The Cochran Q-test was used to assess the magnitude of effect size heterogeneity. Sensitivity analyses were performed according to the type of n-3 PUFA (i.e., DHA/EPA vs. ALA), and baseline fish consumption. Nineteen trials which included 35,175 patients were identified. These trials provide 2,092 deaths (997 out of 17,687 in treatment arms and 1,095 out of 17,488 in the control / placebo arm). Overall, n-3 PUFA were associated with 1) a significant reduction in all-cause mortality (relative risk [RR], 0.82 [95% CI, 0.68 to 0.98); 2) a non significant reduction of SD (0.69 [0.41–1.18]; 3) a non significant reduction of FMI (0.79 [0.41–1.18]) and 4) a non significant reduction of NFMI (0.84 [0.59–1.20]). There were no evidences of heterogeneity between DHA/EPA and ALA regarding M (c2=0.730 df=1,p=0.393). The effect was also similar between subjects with low and high baseline fish intake (c2=0.639 df=1,p=0.424). n-3 PUFA reduce all cause mortality mostly by reducing fatal events suggesting an antiarrhythmic mechanisms of these compounds; there were no evidences regarding an effect on non fatal events. Finally there were no evidence of an heterogeneous effect between DHA/EPA or baseline fish consumption.

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Antibodies against Trypanosoma cruzi ribosomal P proteins induce apoptosis on HL-1 cardiac cells.

G. Levy[1], **M.J. Levin[1]**, K. Gomez[1]. *[1]Laboratory of Molecular Biology of Chagas' Disease, INGEBI-CONICET, Buenos Aires, Argentina.*

Chronic Chagas Heart Disease (cChHD), a chronic manifestation of *Trypanosoma cruzi* (*T. cruzi*) infection, is characterized by high antibody (Ab) levels mainly toward parasite intracellular proteins. Among these, the acidic C-terminal region of the ribosomal P proteins (i.e. epitope R13 of TcP2ß protein) is considered to be highly immunogenic and bears similarity with the second extracellular loop (H26R) of the ß1-adrenergic receptor (ß1-AR). Our previous results demonstrated that anti-R13 Abs from patients with cChHD recognize and activate ß1-AR and and M2-cholinergic receptors (M2-ChR), as seen by immunocytochemistry and cAMP accumulation on stably transfected cells. The aim of this work was to evaluate the effect of anti-R13 Abs long-term stimulation on cardiac cells. Thus, adult murine cardiac HL-1 cells were treated with: a) mAb anti-R13, named 17.2, b) IgG fractions from cChHD patients and c) an irrelevant mAb, named 40.14. Programmed cell death parameters were evaluated with dual staining with annexin-V-FITC and Propidium Iodide (PI) by flow cytometry, terminal deoxynucleotidyl transferase-mediated UTP end labeling reactivity (TUNEL) combined with DAPI staining, and Bax/Bcl-Xl RNAm levels by Quantitative Real-time PCR. The results showed that mAb 17.2 induce 6.37% $\pm$ 2.29 of apoptosis on cardiac HL-1 cells by TUNEL, while irrelevant Ab produced only a 0.72% $\pm$ 0.92 of apoptosis cells. This long term induction was completely abolished by preincubation with propranolol, a ß-AR antagonist. Moreover, mAb 17.2 produced an augmentation in the ratio between proapoptotic Bax to antiapoptotic Bcl-Xl mRNA levels. Late apoptosis changes on cardiac cells induced by mAb 17.2 were further confirmed using annexin V-PI dual staining via flow cytometry. Likewise, IgG fractions from cChHD patients with an exclusive ß1-AR activity also induced apoptosis, but those IgG fractions with both ß1-AR/M2-ChR stimulating effects only produced apoptosis when cells were incubated with a muscarinic antagonist (atropine). Although another mechanism may be involved in heart functional alterations observed in patients with Chagas disease, these results support the hypothesis that programmed cell death caused by anti-R13 Ab chronic stimulating on ß1-adrenergic receptors could result in cardiotoxic effects similar to those known to be produced by agonists. This may have important clinical significance in the use of immunosuppression or immunoadsoption approaches to avoid the cross-reactive immune response produced by anti-R13 Abs without interfering with antiparasite immunity in order to improve the symptoms and prevent the development of cardiomiopathy.

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CARDIAC REHABILITATION PROGRAM IN PEDIATRIC PATIENTS

P. Quiroga[1], H Ilarraza Lomelí[2], MD Rius Suárez[3], I Miranda[4], C Zamora[5], A Buendía[6].
[1]National Institute of Cardiology "Ignacio Chavez", Mexico City.

Objectives: The effectiveness of cardiac rehabilitation programs has been well established in adults with cardioivascular disease, but in pediatric patients has not been demostrated. Our objetive was to evaluate the cardiovascular impact in patiens with congenital heart disease, whom participated in a cardiac rehabilitation program. **Methods:** Fourteen children were recruited (10 boys and 4 girls), between 4 and 17 years old. The persistence of arteriosus ductus (18%) was the most prevalent pathology followed by the aortic coarctation (14%). All patients performed two treadmill stress-testing (Balke protocol) with gas analysis: baseline and after a four weeks training period. Patients trained both, aerobic (cycloergometer) and playing activities, during 30 minutes each sessions per day. Hemodynamic and ECG variables were measured during training sessions. **Results:** Any patients presented complications. The comparison between the stress-testing (baseline and after four weeks) is shown in table 1. **Conclusions:** The cardiac rehabilitation in pediatric patients with congenital heart disease increases exercise capacity and improves functional capacity.

TABLE 1. EXERCISE TESTING RESULTS FOR STRATIFICATION.

Variable	Baseline (Mean $\pm$ SD)	Four weeks (Mean $\pm$ SD)	p*
Resting Heart Rate (bpm)	96 $\pm$ 12	88 $\pm$ 16	$<$0.001
Time of Exercise (min)	9 $\pm$ 19	10 $\pm$ 2	$<$ 0.01
Exercise Tolerance (METs)	7 $\pm$ 1.9	9 $\pm$ 2	$<$ 0.01
Maximum Borg Value (6–20)	17 $\pm$ 0.6	18 $\pm$ 1	$<$0.05
Reached Percentage of Maximal Predicted Heart Rate(%)	78 $\pm$ 10	81 $\pm$ 10	0.173
Heart Rate 1st min Recovery (bpm)	30 $\pm$ 13	44 $\pm$ 34	0.226
Responses Systolic Blood Pressure (mmHg/METs)	5 $\pm$ 2	4 $\pm$ 2	0.051
Oxygen Uptake (mlO2/kg/min)	25 $\pm$ 6	27 $\pm$ 12	0.076
Reached Precentage of Maximal Predicted VO2 max (%)	52 $\pm$ 15	62 $\pm$ 16	$<$0.01
Respiratory Exchange Ratio (VCO2/VO2)	1.05 $\pm$ 0.1	0.91 $\pm$.3	0.403
Ventilatory threshold (mlO2/kg/min)	13 $\pm$ 10	8 $\pm$ 11	0.240
Oxygen pulse (%)	80 $\pm$ 6	90 $\pm$ 6	$<$ 0.01
Myocardic Efficiency Index (MVO2/VO2)	10 $\pm$ 5	9 $\pm$ 4	$<$0.05
Duke's Score	8 $\pm$ 3	9 $\pm$ 3	$<$0.05
Veterans Affairs Score	(-5) $\pm$ 2	(-7) $\pm$ 2	$<$0.05
Exercise Cardiac Power (% predicted VO2max*SBPmax)	7039 $\pm$ 2434	8351 $\pm$ 2383	0.063

* T of Student.

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DEFINITIVE HIS BUNDLE PACING IN PATIENTS WITH WIDE QRS

R. Barba[1], **P, Moriña[1]**, J Venegas[1], JM Fernández[1], M Herrera[1]. *[1]Hospital Juan Ramón Jiménez*

Introduction and Objectives His bundle pacing represents the only method to provoke a physiologic ventricular contraction. It is efficient in suprahisian AV blocks. We show our experience in infrahisian blocks. **Patients and Methods** We selected consecutive patients, sent to our unit for pacemaker implantation due to intraventricular conduction disorders or complete AV block with wide QRS. For definitive his bundle pacing we chose those patients where his bundle pacing provoked a narrow QRS. We placed leads in the right atrium, right ventricular apex and his bundle connecting the leads to the atrial port, right ventricular and left ventricular ports of a biventricular pacemaker. Pacemakers were programmed to DDD mode and an interventricular delay of 40 ms. **Results** From February to July 2007, 71 patients were studied, 48 patients fulfilled inclusion criteria. In 22 patients we could implant a lead in His Bundle. Follow-up data collected from 2 to 7 months showed that his bundle pacing threshold stayed stable in 19 patients, and in 3 patients there were lost of capture. No dislogments were found. Ventricular function has not been deteriorated and valvular incompetence has not been seen in any patient. All patients recovered of their intraventricular asynchrony. **Conclusions** Definitive His Bundle pacing may be used in a high percentage of infrahisian blocas. It allows to recover a physiologic AV synchrony, it does not provoke inter and intraventricular asynchrony and may be a new method to achieve ventricular resynchronization when needed

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Serum triglycerides may reflect the content of cellular omega-3 fatty acids in CHD populations with a low intake of fish.

R. Leòn De La Fuente[2,3], P. Gallo[3], SA. Dib Ashur[3], E. Lovaglio[3], A. Torino[3], ST. Nilsen[1,2], L. Woie[1,4], H. Staines[5], WS. Harris[6], DWT. Nilsen[1,2]. *[1]Stavanger University Hospital, Stavanger, Norway [2]University of Bergen, Norway [3]Cardiovascular Center of Salta, Favaloro University,Salta, Argentina [4]Universidad Catolica de Salta, Salta, Argentina [5]Sigma Statistical Services Ltd., Balmullo, Scotland, UK [6]Sanford School of Medicine, University of South Dakota, Sioux Falls, SD, USA*

Background: Early studies of Greenland Eskimos who consumed a diet rich in n-3 fatty acids (FAs) emphasized that population's lower coronary mortality as compared with Danish controls. Moreover, several prospective epidemiologic studies have reported significant associations between fish intake and a lower risk of coronary heart disease (CHD), but there seems to be a lack of a dose-response relation. In the US Physicians Health Study (JAMA 1998;279:23–8) there was a continuous relationship between blood n-3 FAs and risk for sudden death up to one fish meal per week. N-3 FAs lower triglycerides and elevated fasting triglycerides may be an independent risk factor for CAD. In this study we investigated whether serum triglycerides in a beef eating population with low dietary intake of n-3 FAs may be associated with the omega-3 index [the sum of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) in red blood cells, expressed as percent of total FAs]. **Methods:** We included 229 non-statin treated chest pain patients from Salta, Argentina (mean age 63.4, males 63.3%), consecutively admitted with verified CHD, with and without a troponin-T release. Blood samples were drawn immediately after admission. We performed one way ANOVA of serum lipids across quartiles of the omega-3 index. **Results:** The median omega-3 index was 2.15% (P25 = 1.19, P75 = 3.89). There was no significant association between total cholesterol or HDL cholesterol levels and omega-3 index (each $p > 0.05$). Triglycerides in Q4 were 1.67 mmol/L (CI 1.44–1.89) as compared to 2.57 mmol/L (CI 1.98–3.16) in Q1 ($p = 0.006$). The p value for Scheffé's analysis of contrast for Q4 versus Q1 was 0.012 and for Q4 versus Q1-Q3 was 0.007 (see Table 1). **In conclusion**, in a CHD population with a very low dietary intake of fish products, serum triglycerides were lowest in those patients with the highest omega-3 index, suggesting that a threshold level of the omega-3 index for a triglyceride lowering (and possibly CHD protective) effect might be sought in low fish eating populations like that in Argentina.

TABLE 1

	Total Cholesterol			HDL-Cholesterol			Triglycerides		
Omega-3 index quartile	Mean	95%CI; Lower bound	95%CI; Upper bound	Mean	95%CI; Lower bound	95%CI; Upper bound	Mean	95%CI; Lower bound	95%CI; Upper bound
Argentina Q1	5.08	4.51	5.65	0.96	0.87	1.04	2.57	1.98	3.16
Q2	4.91	4.61	5.21	1.05	0.97	1.13	2.01	1.69	2.34
Q3	5.22	4.82	5.62	0.92	0.82	1.02	2.84	2.12	3.57
Q4	4.75	4.48	5.03	1.03	0.93	1.12	1.67	1.44	1.89
Total	4.99	4.79	5.19	0.99	0.94	1.03	2.28	2.02	2.54

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RHEUMATIC HEART DISEASE DATABASE AS A FRAMEWORK TO CONSOLIDATE RHEUMATIC FEVER SURVEILLANCE SYSTEM IN BRAZIL.

R.M.A.X Regina Maria Aquino Xavier[1], **M.C.C.K Maria Cristina Caetno Kuschnir[1–2]**, V.M.P.A. Vitor Manuel Pereira Azevedo[1], R.E.M Regina Elizabeth Muller[1], M.C.P. Márcia Cristina Pnheiro[1], B.R. T. Bernardo Rangel Tura[1], D. V. Denizar Vianna[2], M. A. S Marco Aurélio Santos[1], E. L. Eliane Lucas[3], M. F. P.L. Maria De Fátima Pereira Leite[3]. *[1]National Institute of Cardiology, Brazil [2]Rio de Janeiro State University, Brazil [3]Bonsucesso General Hospital, Brazil*

Introduction: Worldwide health care services present problems related to quality and access. This situation usually leads to worse clinical conditions. Worried about these conditions, researchers of National Institute of Cardiology – Brazil planned to use a rheumatic fever database. Information in this database will be able to support a surveillance system, whose objective is the generation, dissemination, management and implantation of policies. Sharing of information and experiences among individuals and institutions (government managers, social control, educational, health professional, research institutions, and non-governmental organizations) improves efforts and resources to promote equity, universality and humanized health care actions and services. The consolidation of rheumatic fever surveillance system in Brazil, aiming to spread and expand knowledge about rheumatic fever and rheumatic heart disease problem as well as follow the impact of actions and its prevention, assistance and control. A further goal of data collection is to enable statistical analysis and comparison among centers which will help to define official Brazilian standards available for health care organizations. **Objective:** To evaluate a dataset about rheumatic disease to develop rheumatic heart disease surveillance system in Brazil. **Methods:** At the first stage of this research, an extensive review of literature was performed. An ad-hoc expert panel judged that the World Heart Federation database was the best to be adapted to our setting. This choice was based in following the characteristics: the database need to be simple, limited and exclusive; usable by general practitioners, pediatricians and cardiologists; respects published classifications and provides synonyms for similar items. The process of adaptation of the instruments included the following steps: 1) translation from English to Portuguese of the instrument by two researchers; 2) Experts panel to judge triggers and translations doubts based on consensus; 3) pre-test and pilot study and 4) back translation of the instruments by two other independent researchers from the first translation. To guarantee the quality of methodology and, consequently, its results, a letter was written to World Heart Federation (WHF) intending to clarify specific doubts about WHF database. After WHF answers 50 Brazilians patients have been selected to the study. The behavior of this group will be analyzed regarding all possible difficulties, its causes and consequences. **Results:** A database validity will be performed aiming to create a helpful surveillance system to guide the decision making regarding rheumatic fever health care policies; availability and viability of national databases to build information systems to consolidate rheumatic fever health care net throughout country.

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The strong relationship between age of patients but not polymorphisms of genes encoding G-proteins system components and dominant vasodepressor response to tilting in syncopal young and middle-aged patients

M. Lelonek[1], T. Pietrucha[2], M. Matyjaszczyk[2], J.H. Goch[1]. *[1]Department of Cardiology, I. Chair of Cardiology and Cardiac Surgery, Medical University of Lodz, Poland [2]Department of Medical Biotechnology, Medical University of Lodz, Poland*

The intracellular signal transduction with G proteins participation plays fundamental role in regulation of cardiovascular system. Dysregulation of this system may be a result of functional alterations in the intracellular signaling caused by functional genes polymorphisms. Recently we described the strong association for the mutation C/T 825 of the G-protein beta 3 subunit gene (GNB3, GeneID:2784) and the predisposition to syncope in patients with negative outcome of tilting. Therefore in this study we decided to examine in VASIS-related groups the following G-proteins system genes polymorphisms manifestation: the T393C polymorphism of gene encoding G-protein alpha-subunit (GNAS1, GeneID:2778), the mutation C/T 825 GNB3 and the C1114G polymorphism of gene for cardiac regulator of G-protein signaling 2 (RGS2, GeneID:5997). The aim of the study was the evaluation of the relationship between clinical variables, polymorphisms manifestation of genes encoding intracellular signal transmission components using the above mentioned candidate gene approach, and dominant vasodepressor response to tilting among syncopal young and middle-aged patients. **Methods** From 242 patients (32% men, mean age 39.3+/-17.2 years, range 15–54, median 36 years) with structurally normal hearts without other diseases 166 (69%) subjects were positive tilted and 135 (56%) had historical point score (PS)>=-2. Genomic DNA was extracted from cellular blood components using an extraction kit. The polymorphisms were diagnosed by PCR and RFLP methods with primer pairs previously described. From clinical variables into multivariate stepwise regression were introduced: PS>= -2, age, body mass index, female gender, systolic and diastolic blood pressure at rest, and from genetic traits homozygocity and allele carriage. Analysis was performed according to the outcome of tilting: dominant vasodepressor component (VASIS1+3) n=128 vs. dominant cardioinhibition (VASIS2) n=38. Everyone signed up the voluntary agreement form before enrollment to the study. Used protocol obtained the Local Bioethics Committee's acceptation. **Results** In patients with dominant vasodepressor response to tilting vs. dominant cardioinhibition, the frequencies of PS >=-2 and <-2 were 64% vs. 46% (OR=2.21, 95% CI 1.01–4.45; P<0.05), respectively. The homozygotes C/C 393 GNAS1, T/T 825 GNB3 and G/G 1114 RGS2 and the allele carriage were not associated with analyzed responses to tilting (P>0.05). From multivariate regression analysis it was revealed that only age of the studied patients was strongly associated (protectively) with the dominant vasodepressor component of syncope (OR 0.97; 95% CI 0.94–0.99; P=0.01). **Conclusions** Among the syncopal young and middle-aged population we found the strong relationship between age of patients and tilting results with the dominant vasodepressor component. Analyzed polymorphisms of genes encoding G-proteins signal transduction system components in tilted subjects did not differentiate the dominant vasodepressor vs. dominant cardioinhibition response to orthostatic stress.

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Primary Hypertension in Adolescents – Rio de Janeiro, Brazil

M.C.K. Maria Cristina Kuschnir[1–2], G. M. Gulnar Mendonça[2], R. M. A. X Regina Maria Aquino Xavier[1], R. E.M. Regina Elisabeth Muller[1], H. D. Henrique D'abreu[2], A. M. Arn. Migowski[1], R. B. C. Rogério Brant Chaves[1], M. C. P. Márcia Cristina Pinheiro[1], C. A. M. Carlos Alberto Magalhães[1], V. M.P. A. Vitor Manuel Pereira Azevedo[1]. *[1]National Institute of Cardiology, Brazil [2]Rio de Janeiro State University, Brazil*

Background: Primary hypertension is a prevalent chronic condition in adolescence. Recently, obesity in children has increased significantly in Brazil, and it can cause/ worsen: hypertension, dyslipidemia, type 2 diabetes, metabolic syndrome. **Objectives:** this study sought to investigate the risk factors associated with primary hypertension in adolescents in Rio de Janeiro, Brazil. **Methods:** an outpatient based case-control study was conducted with adolescents between 12 and 20 years, who were followed in Núcleo de Estudos da Saúde do Adolescente da Universidade do Estado do Rio de Janeiro, a specialized university service for adolescents in Rio de Janeiro. The nutritional status was evaluated by body mass index (BMI). Moreover the weight, height and waist circumference, birth weight, history of familiar hypertension and sexual maturity rating were obtained. The analysis was elaborated through unconditional logistic regression. **Results:** 91 cases and 182 controls participated in the study. Statistical analysis demonstrated a strong association between total adiposity and regional fat distribution and hypertension. However, after adjustmet, only total adiposity – measured though BMI – was shown to be associated with hypertension. Stature has shown to be associated in a positive way with hypertension in girls. Our study did not show an association between puberal development and weight at birth and hypertension in adolescence. Family history – especially when both parents presented hypertension - was found to have a strong association with hypertension, both to boys (OR = 13,32; 95% CI: 2,25 – 78,94), and girls (OR = 11,35; 95% CI: 1,42 – 90,21). **Conclusion:** The results of our study reinforce the need for public policies directed to the prevention of overweight and obesity in adolescents and for a special monitoring of children of parents with hypertension.

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Comparative value of NT-BNP and Tei index in the estimating of the severity of congestive heart failure

J. Celutkiene[1], V. Grabauskiene[1], **R. Steponeniene[1]**, J. Misiura[1], A. Laucevicius[1]. [1]*Clinic of Heart Diseases, Centre of Cardiology and Angiology, Vilnius University Hospital Santaripkiø Klinikos, Vilnius, Lithuania*

Introduction The value of Tei index (or myocardial performance index, MPI) in patients with congestive heart failure of various severity is controversial. The aim of the present study was to assess the usefulness of the Tei index in congestive heart failure patients and to compare its value with biochemical marker NT-BNP, which is now widely recognized as reference method for the estimating the severity of heart failure. **Methods** Study group consisted of 158 patients referred to heart failure clinic, mean age 49.15 ± 11.38 years, 89.2% males. 28 patients (17.7%) were in NYHA I, 47 patients (29.7%) were in NYHA II, 71 patients (44.9%) were in NYHA III and 12 pts (7.6%) were in NYHA IV functional class. Mean left ventricular (LV) diastolic diameter (LVDd) was 6.88 ± 1.17 cm and mean LV ejection fraction was 28.84 ± 12.32 %. The Tei index (MPI) was defined as the summation of isovolumic contraction and relaxation time divided by ejection time. **Results** Mean value of NT-BNP was 2747.58 ± 3596.63 pg/ml. Mean LV MPI was 0.8 ± 0.37 and mean isovolumic relaxation time (IVRT) was 103.78 ± 31.91 ms. Moderate correlation was found between values of NT-BNP and LV ejection fraction (R=-0.48), LVDd (R=0.30), IVRT (R=-0.26) and NYHA functional class (R=0.28) ($p<0.01$ in all tests). MPI significantly correlated with IVRT (R=0.28), LVDd (R=0.23) ($p<0.01$) and LV EF (R=-0.18) ($p<0.05$). No correlation was found between NT-BNP and MPI as well as between MPI and NYHA functional class. **Conclusion** In congestive heart failure patients Tei index does not correlate with NT-BNP values or NYHA functional class. One possible reason for this is the tendency of IVRT to shorten along with the increasing of NYHA functional class and with the increasing of NT-BNP. Thus, Tei index could not be used as a marker of the severity of congestive heart failure.

TABLE 1. DISTRIBUTION OF STUDY PARAMETERS ACCORDING TO NYHA FUNCTIONAL CLASS

Parameter	NYHA I	NYHA II	NYHA III	NYHA IV
Age	44.39 ± 9.58	49.40 ± 11.56*	49.73 ± 11.50*	55.83 ± 10.72*
NT-BNP, pg/ml	1224,57 ± 941.60	2317,31 ± 3196.93*	3489,59 ± 4341.48*	3596,19 ± 2955.21*
LVDd, cm	6,60 ± 1.12	6,68 ± 0.99*	7,14 ± 1.23*	6,89 ± 1.37*
LV EF, %	32,56 ± 13.73	29,32 ± 12.88	27,45 ± 11.13	26,44 ± 12.96
IVRT, ms	101,65 ± 22.29	108,00 ± 33.10	104,13 ± 35.79	87,44 ±16.06
MPI	0,70 ± 0.37	0,90 ± 0.37*	0,75 ± 0.36*	0,93 ± 0.38*

* $p < 0.05$

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Non invasive diagnostic methods in controlling the effectiveness of cardioprotective properties of creatinephosphate and agents on the base of native DNA in young athletes

L.A. Balykova[1], L.M. Makarov[2], I.A. Markelova[1], I.A. Gorbunova[1], V.P. Balashov[1], S.A. Ivyanskij[1]. [1]*Mordovian State University,* [2]*Moscow Institute of Pediatrics' and Pediatric Surgery of Roszdrav*

In view of significant increase in physical load intensity and its damaging effect on the myocardium in young athletes, the objective of this research was to study cardioprotective efficacy of some metabolic agents by means of 24-hour ECG (Holter ECG) and exercise test. **Methods:** 31 young athletes aged 9–13 years (17 boys-footballers and 14 girls-gymnasts) were examined. Exclusion criterion: evidence of hypertrophic cardiomyopathy or arrhythmogenic right ventricular dysplasia on physical examination or in myocardial imaging. The patients were divided into 2 groups. The patients of group I (8 boys and 7 girls) received creatinephosphate – "Neoton" (100 mg/kg/per day, i/v drop-like N10). The group II was administered agents on the basis of native DNA - "Derina-te" (2 mg/kg/in a day i/m, N10). All the patients underwent a veloergometry test using a standard protocol. Twelve-lead ECGs were recorded on all patients: at rest, at 3-minute intervals during exercise, at peak exercise; and at 1, 6 and 10 minutes during recovery. QT-, QTc-intervals (according to Bazett's formula), QT- and QTc-intervals dispersion (QTd and QTcd) were evaluated manually. **Results:** According to Holter ECG data administration of metabolic therapy leads to normalization of circadian profile of cardiac rhythm, to decrease in the expression of brady-dependent ECG-phenomenon with simultaneous increase in average night heart rate by 6.9–10.1% to the original and also to disappearance of heart rhythm pauses longer than 2 sec. Moreover, Neoton and Derinate have helped to reduce metabolic damages and promoted disappearance of myocardial ischemic events, which were initially present in 37% of young athletes. Veloergometry data have showed increase in maximal level of oxygen consumption in both study groups (by 8.0–7.1% under the effect of Neoton and by 6.4–5.4% under the effect of Derinate). Physical ability index, measured by PWC170 test has also grown in all the children (by 9,8% in group I and 3,8% in group II). After the treatment decrease in rhepolyarization dispersion (QTd è QTcd) has been established: 59–64% at the peak load as compared to the original and QTc shortening, its value being less than at rest. These shifts correlated with disappearance of ventricular extrasystoles and T-wave alternation at the peak load and at rehabilitation period, which were initially present in 20% of children. If the symptoms of infective-toxic cardiopathy on the background of persistent infective foci dominated, the use of Derinate has proved to be preferable, while if the markers of electric non-stability of the myocardium and stress-induced myocardial dystrophy prevailed Neoton is preferable. **Conclusions:** In examining the cardiovascular state of young athletes and controlling the efficacy of cardioprotectiv therapy in sport medicine the use of Holter ECG and exercise test has proved to be expedient.

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Predictors of abnormal heart rate response to dipyridamole in patients undergoing myocardial perfusion SPECT

RSL Lima[1], A De Lorenzo[12], MP Pellini[1], LMB Fonseca[1]. [1]*Universidade Federal do Rio de Janeiro - Brazil* [2]*Instituto Nacional de Cardiologia Laranjeiras - Brazil*

Objective: To identify predictors of abnormal HR response to dipyridamole (DIP) in patients undergoing myocardial perfusion SPECT (MPS). **Background:** Patients with a reduced heart rate (HR) response to DIP have higher cardiac mortality but the mechanism is unknown. **Methods:** We studied 335 patients who underwent dual-isotope gated MPS. DIP (0.56 mg/kg) was infused over 4 min, and Tc-99m-tetrofosmin was injected 3 min after the end of the infusion. Semiquantitative visual interpretation of MPS images was performed with short and vertical long axis tomograms divided into 17 segments. Each segment was scored by consensus of 2 expert observers using a 5-point scale (0=normal; 1=equivocal; 2=moderate; 3=severe reduction of tracer uptake; 4=absence of detectable radiotracer activity in a segment). The summed stress score (SSS) and summed rest score (SRS) were obtained by means of adding the scores for the 17 segments of the stress and rest images, respectively. The difference between the SSS and SRS was defined as the summed difference score (SDS). Left ventricular ejection fraction (LVEF) and volumes were automatically calculated using Cedars-Sinai's Quantitative SPECT [QGS] software. In order to examine HR response patterns in our population, without using pre-specified cutoffs, the population was categorized into tertiles according to HR ratio. Patient characteristics in each HR ratio tertile were then compared with the Student's t test (2- tailed) or ANOVA, for continuous variables, or chi-square, for categorical variables. Logistic regression analysis was performed to identify predictors of abnormal HR response, using the lowest tertile as the independent variable. Receiver-operator characteristic (ROC) methods were used to identify the optimal sensitivity and specificity for the observed range of HR ratio to detect LV dysfunction. **Results:** Group 1 included patients with HR ratio< 1.165, group 2 was composed by patients with HR ratio between 1.165 and 1.28 and group 3 with patients with HR ratio >1.28. Age was not significantly different across the groups. Group 1 patients were more frequently male and with a history of chronic renal failure and less often had hypertension. Prior coronary artery disease had a similar distribution among all groups. Of note, patients with the least HR ratio were taking digoxin more frequently than those from the other groups. The use of beta-blockers and calcium channel antagonists was not different, though. Baseline HR was higher in group 1 patients but no differences were found in baseline or peak BP. SSS and SRS were higher and LVEF was lower in patients from group 1, while SDS was not significantly different among patients from all groups. Multivariable logistic regression analysis demonstrated that the independent predictors of abnormal HR response were baseline HR, chronic renal failure and low LVEF. The ROC curve demonstrated a good accuracy of HR ratio to identify left ventricular dysfunction. **Conclusion:** LV dysfunction is an independent predictor of abnormal HR response to DIP and HR ratio is able to accurately predict low LVEF assessed by gated MPS.

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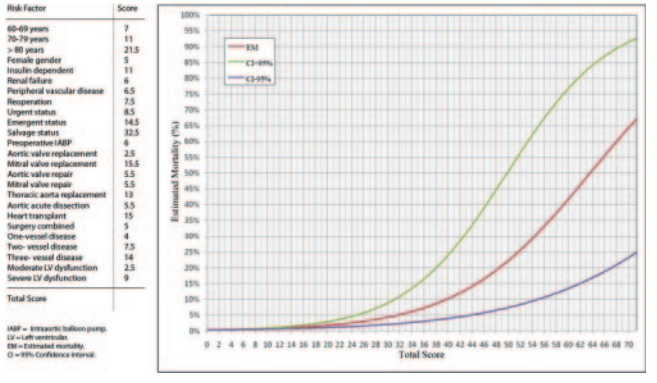
Risk Model for cardiac surgery in Argentina: A Bedside Graphic Score.

V. Carosella[1], W. Rodriguez[1], M. Caceres[1], M. Sellanes[1], J. Bilbao[1], C. Cardenas[1], C. Pensa[1], H. Grancelli[1], C. Nojek[1]. [1]*Instituto FLENI*

Background: Risk assessment models have been developed to predict mortality in cardiac surgery. However, these models have inferior performance when they are applied to populations different from the ones on which they were developed. This study aims to develop, in a local population, a simple risk model of graphic metodology and to validate it in an internal and external dataset. **Methods:** Data on 4698 consecutive adult patients were obtained from our prospective, audited and involuntary database, who underwent any cardiac surgical procedure from June 1994 to January 2007. This study was designed to be developed in three consecutive steps. The first step includes a retrospective analysis of 2903 patients operated from June 1994 to December 1999 at one center (development dataset). The clinical outcome considered was in-hospital mortality. Data were analyzed by univariate analysis and multiple logistic regression. We developed a graphic-risk model with the regression coefficients. The system is additive: to calculate the predicted risk for a patient, the scores for existing risk factors are added to give an percentage estimated mortality. The second step was an internal and prospective validation in 708 patients operated, at the same center, from January 2000 to June 2001. The third step was an external and prospective validation in 1087 patients operated in 3 different centers from February 2000 to January 2007. Its calibration and discrimination characteristics were assessed in the validation dataset. **Results:** In the development dataset



the area under ROC curve was 0.725 and the Hosmer-Lemeshow test was p=0.876. In the internal validation dataset ROC curve was 0.767. In the external validation dataset ROC curve was 0.811 but imperfect calibration was detected because the overall hospital death rate in this group (3.96 %) was significantly lower than the development group (8.20 %) (p<0.0001). To improve the calibration, the model was recalibrated. The 2007-recalibrated model showed excellent level of agreement between the observed and expected rates on all patients (p= 0.920) and this predictive power was maintained across 5 quintiles of risk. The Hosmer-Lemeshow test was p=0.679 and the ROC curve was 0.811. **Conclusions:** This is the first risk model for cardiac surgery developed in a population of Latin America with external and temporal validation. Its methodology, simple, graphic pocket-sized card, allows an easy bedside application with acceptable statistic precision.

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Gender differences in the approach of coronary artery heart disease

J. Erriest[1], M Cornelli, G Vigo, V Arregui, ML Plastino, L Cartasegna, J Camilletti. [1]*Hospital Italiano de La Plata. Bs As. Argentina*

Background: Actually Coronary artery disease (CAD) is the leading cause of death and disability in women. Ischemic heart disease appears to be substantially different in women than in men, and it is time to devise sex-specific strategies for detecting and assessing it. **Objectives:** The aim of this retrospective study is to examine the risk factors and the impact of gender in the study group; evaluate the relationship between symptoms of presentation of CAD, with the results of exercise electrocardiography test (EECG) and single-photon-emission computed tomography (Spect); and to assess the impact of the Spect risk scores over the indication of coronary angiography. **Methods:** They were included patients with known or suspected of CAD, that were submitted to a Spect. Patients were divided in males and females. Symptoms of presentation (asintomatic, atypical chest pain (ACP) and typical chest pain (TCP)), risk factors and the results of the EECG (normal or abnormal (EECG+)) and Spect (summed stress score (SSS), the summed rest score (SRS) and summed difference score (SDS)), were compared between de two groups. Finally, women were followed up for a period of 8 weeks to find out if they were sent or not to coronary angiographies, by their physicians, based upon the results of the Spect. **Results:** A total of 700 patients were included, males 456 (66%); women 244 (34%) p: 0.0001. Significant differences were not observed in the risk factors (age, hypertension, smokers, and diabetics) between the two groups; In the clinical status, statistical differences were observed: Asintomatic males n:243 (54%) vs women n:76 (31%), p=0.0001; ACP males n:123 (26%) vs women n:120 (49%), p=0.0001; except for TCP: males n: 90 (20%) vs women n: 48 (20%), p ns. Men Women p Men Women p EECG+ 127 (27%) 59 (24%) NS Spect + 93 (73%) 24 (40%) 0.0001 TCP 90 (20%) 48(20%) NS Spect + 67 (74%) 23 (43%) 0.002 Between the 70 women with a SPECT+, nine (13%) were referred for coronary angiography; and 87 % (61 women) were not (p= 0.0001). 20 women had SDS ƒ® 5 (moderate – severe ischemia); of these group 6 women (30 %) were referred to coronary angiography and 14 women (70 %) were not (p= 0.02). 50 women demonstrated SDS ƒ¬ 5 (mild ischemia), of them 3 women (6 %) perform a coronary angiogram and 47 women (94 %) not (p= 0.0001).

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Influence of chronic renal failure on the heart rate response to dipyridamole of patients undergoing myocardial perfusion SPECT

A De Lorenzo[12], RSL Lima[1], MP Pellini[1], LMB Fonseca[1]. [1]*Universidade Federal do Rio de Janeiro - Brazil* [2]*Instituto Nacional de Cardiologia Laranjeiras - RJ - Brazil*

Background: Dipyridamole promotes a reduction in blood pressure (BP) and an increase in heart rate (HR), considered the normal hemodynamic response to the drug. Data suggest that patients with chronic renal failure (CRF) have an attenuation of this hemodynamic response. This study sought to evaluate the HR response to dipyridamole and its determinants in patients with or without CRF undergoing myocardial perfusion SPECT (MPS). **Methods:** Consecutive patients (>18years) undergoing dual-isotope MPS were enrolled. Dipyridamole (0.56mg/kg) was infused over 4 minutes. HR and BP were recorded at rest, every 2 minutes after the onset of infusion, for a total of 10 minutes. 99mTc-tetrofosmin was injected at 8 minutes. Peak HR and BP values were defined as the highest HR and lowest BP during the 10-minute period. We calculated the HR ratio (peak HR/rest HR). A reduced HR response to dipyridamole was considered present if the HR ratio was ≤1.20. Patients underwent rest 201Tl/dipyridamole stress 99mTc-tetrofosmin MPS. Interpretation of MPS images was performed with a 17-segment model of the left ventricle scored using a 5-point scale (0=normal; 1=equivocal; 2=moderate; 3=severe reduction of tracer uptake; 4=absence of detectable radiotracer activity in a segment). The summed stress score (SSS) and summed rest score (SRS) were obtained by adding scores of stress and rest images, respectively. The summed difference score (SDS) was defined as SSS-SRS. Post-stress left ventricular ejection fraction (LVEF) was automatically calculated with quantitative gated SPECT software. A logistic regression analysis was used to identify independent predictors of abnormal HR response to dipyridamole in patients with or without CRF. All variables in the final model had a p value <0.05. **Results:** We studied 335 patients, 32 (9.6%) of whom had CRF. Reduced HR response was found in 84.4% of patients with CRF and 40.6% of those without CRF (p<0.0001). The use and doses of medications with negative chronotropic effects were not significantly different between the two groups. The independent predictors of abnormal HR response were, for patients without CRF, the SDS ($\chi 2$=4.5, p=0.045) and LVEF ($\chi 2$=7.0, p=0.008), in a way that high SDS and low LVEF were associated with abnormal HR response. In contrast, in CRF patients, there was no significant association of any variable with abnormal HR response. **Conclusions:** An abnormal HR response to dipyridamole is frequent in patients with CRF. Different mechanisms account for abnormal HR response in patients with or without CRF. In non-CRF patients, left ventricular function seems to be linked to the regulation of HR response, and the rise in HR may not occur if there is left ventricular dysfunction. Myocardial ischemia, reflected in the SDS, might also be involved, although with borderline significance. On the other hand, in CRF patients, since neither myocardial ischemia nor dysfunction were predictors of abnormal HR response, autonomic nervous system abnormality may be the most important factor involved.

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Defibrillation Threshold in Patients of LABOR Registry

L. Jurado[1], C. Martinengo[1], A. Martín[1], F. Colosia[1], R. Samaniego[1], C. Garillo[1], E. Valero[2]. [1]*Biomédica Argentina* [2]*Ateneo Buenos Aires*

Introduction. The test of the true defibrillation threshold (TDT) during the implant was recently discussed. The TDT in 237 patients among a population of 1230 pts incorporated to the ICD-Latin American ongoing Registry was retrospectively reviewed. The relationship between TDT and medical treatment and death was analysed. **Method.** The TDT was determined at the moment of ICD implant. The minimum value to reach an effective defibrillation was obtained. The patients were divided in three groups according to the medical treatment: A.- 182 pts were under amiodarona, B.- 32 pts with beta blockers and C.- 23 pts without antiarrhythmic treatment. **Results.** The TDT of the total population implanted ranged 4.5J to 30J (mean 15.8±6.7J). Group A had a mean TDT 16±7J (5–30 J), Group B 16±5 J (5–30J) and group C 13±6J (4–30 J)(P=0.05 compared with amiodarona or beta blockers). In the amiodarona group there was 24 pts with TDT over 25 J, in the beta blockers group 3 pts, and in the group free of medication 1 pt. (p=NS). In group A 4 pts died suddenly (1 pt con TDT of 30J, but electromechanical dissociation was registered in post-mortem interrogation of the device. In group B 2 pts died suddenly, they had a TDT under 25 J but the cause of death could not be determined. In group C 2 pts died, one of them with TDT of 30J but with effective therapies before his death. **Conclusion.** Under amiodarone or beta blockers the TDT have a not quite significative difference with pts without antiarrhythmic drugs (p=0.05). There were no significative differences in total mortality and/ or sudden death related with high TDT.

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ICD Experience in a Latin American Pediatric Population

J. Scaglione[1], G. Fernandez[2], G. Maid[3], M. Senesi[4], R. Pesce[5], F. Dorticós[6], E. Valero[7], AND Icd-Labor Investigators. [1]*Hosp. Pedro de Elizalde Buenos Aires Argentina* [2]*Centro Cardiovascular Montevideo Uruguay* [3]*Hosp. Italiano Buenos Aires Argentina* [4]*Hosp. Durand Buenos Aires Argentina* [5]*FLENI Buenos Aires Argentina* [6]*Hosp. Hermanos Ameijeiras La Habana Cuba* [7]*Ateneo Buenos Aires Argentina*

Background. The highly inappropriate therapies related to supraventricular tachycardia or electrode complications in small populations of pediatric patients (Pts) implanted with cardiodefibrillators (ICD) have been published The purpose of this study is to evaluate the indications, underlying cardiac disorders, efficacy and complications in pediatric patients (pts) incorporated to the ICD Latin American ongoing registry (LABOR). **Methods.** Between January 1998 and august 2007, 20 pts (17 males) mean age 15 ± 4 years, (6 to 18 years) underwent ICD implantation. All patients had a cardiac evaluation which included medical history, physical examination, chest X-ray, standard ECG, 24-hour Holter ECG monitoring and echocardiography. The underlying cardiac disorders included: Long QT-syndrome (LQT) in 6 pts; hypertrophic cardiomyopathy in 4 pts (one of them had obstructive hypertrophic cardiomyopathy); primary electrical disease in 4 pts; dilated cardiomyopathy in 3 pts, Brugada syndrome in 2 pts and arrhythmogenic right ventricular dysplasia (ARVD) in 1 pt. ICD was indicated for primary prevention (PP) of sudden cardiac death in 7 pts, 3 pts have had syncope (2 LQT and 1 Brugada S.) and 4 pts hypertrophic cardiomyopathy with familiar history of sudden death (SD). The device was indicated for secondary prevention in 13 pts due to ventricular tachycardia in 9 pts and SD in 4 pts. All patients received a transvenous ICD-system (single chamber in 18 pts, and dual chamber in 2 pts. Median defibrillation threshold was16±5 Joules. **Results.** The mean follow up was 35 months (6 to 68 months). During this period there were neither acute nor chronic complications. We have not seen infections, thromboembolism, lead-perforations or fractures. During follow up 4 pts (57 %) of the PP group received appropriate therapies and 2 pts (28,5%) an inappropriate shock due to atrial tachycardia. From the secondary prevention group only 3 pts received appropriate therapies (23%). Eighteen pts had concomitant antiarrhythmic drug therapy 18/20 (90%); 8 amiodarone (40%) and 10 Betablockers (50%). Eight pts reached the elective replacement time at 51±15 months and received a new device. There were no deaths. **Conclusion.** In these cohort of pediatric pts the incidence of arrhythmic events was low, but therapies tended to be more frequent in primary prevention pts (57% vs 23% p=NS). ICD therapy via transvenous access for prevention of sudden cardiac death is feasible and effective even in a pediatric population.

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Risk stratification in patients post-CABG using stress myocardial perfusion SPECT

J. Erriest[1], A Mele, V Severicha, P Kociubinski, J Camilletti. [1]*Hospital Italiano de La Plata. Bs As. Argentina* [2]*Instituto de Cadiologia La Plata. Bs. As. Argentina*

Background: The long-term effectiveness of Spect in patients post-CABG is limited. The prognostic implication of the clinical status, asymptomatic or symptomatic is controversial, and little is known regarding the appropriate moment to stress patients, respect to risk stratification. The goals of this retrospective study were, define the prognostic value of SPECT in previously revascularized CABG patients, either symptomatic or asymptomatic and establish the incidence of myocardial ischemia, symptomatic or silent and its impact on prognosis. **Methods:** There were included 309 patients submitted to a stress gated SPECT after CABG. The analysis of the images was performed according to scores (SSS, SRS, SDS). These data was correlated with symptoms (chest pain or dyspnea). We defined : Group 1 (G1) as asymptomatic without ischemia (n: 153); Group 2 (G2) as silent ischemia (n: 84) and Group 3 (G3) as symptomatic with ischemia (n: 51). Follow-up was done in search of events (myocardial

infarction, death and need of revascularization). Twenty patients (7%) were lost to follow-up. **Results:** 309 patients submitted to a SPECT after CABG G1: 73 +/-56 months. p: 0.002; G2: 98+/-67 months. p: 0.004; G3: 133+/-70 months; p: 0.0001 versus G1, post CABG. Mean follow up was 38+/-7 months Significant differences (SD) weren't observed in clinical variables between the groups. In the group of 135 ischemic patients, 38% were symptomatic and 62% asymptomatic.The SSS mean score was lower in G1 (4.1 +/-6.6) compared with G2 (11 +/- 8) and G3 : (12+/-9) (p:0001) and no SD were found between G2 vs G3. (p=NS). The SDS mean score was greater in G3 (7.5+/-5.8) than in G1: (0) (p: 0.0001) and vs G2 : (5+/-4) (p: 0.002), and also comparing G2 vs G1, (p: 0.0001). SD wheren't observed in the means SRS, EDV and ESV between the three groups. Mean LVEF was lower in G2 and G3 (p: 0.0001) compared with G1, and it was greater in G2 than in G3, (p: 0.009). There were SD in total cardiac events in G1 (10.8%) vs G2 (29.4%), p: 0.0001 ; and vs G3 (47.8%) (p: 0.0001). No SD between total events in G2 vs G3, (p: NS). The percentage of annual events of G3 and G2 didn't show SD (17.4 % and 10.1% respectivelly ; p: 0.3). Lower frequency of annual events were observed in G1 (2.8%) compared with G2 (p: 0.04) and vs G3 (p: 0.002). **Conclusion:** In post CABG patients, stress induced myocardial ischemia, detected by Spect, is determinant of prognosis. Its extension and severity, is related with the occurrence of cardiac events in the follow up. A high percent of these patients, with ischemia, has no symptoms at all. Then, the occurrence of events wouldn't be related to the presence of symptoms.

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A non-linear HRV index used as an indirect measure of left ventricular function

D. S. Andres[1], I. M. Irurzun[1], M. M. Defeo[2], E. E. Mola[1], J. Mitelman[3–4], L. Gimenez[3–4], C De Luca[3], M Marcia[2], P Velazco[2]. *[1]Facultad de Ciencias Exactas. Universidad Nacional de La Plata (INIFTA, CONICET). Argentina. [2]Hospital Interzonal General de Agudos "Prof. R. Rossi". La Plata. Argentina. [3]Hospital General de Agudos "T. Alvarez". Buenos Aires, Argentina. [4]Instituto Universitario de Ciencias de la Salud, Facultad de Medicina, Fundación Barceló, Buenos Aires, Argentina.*

Introduction In the present work we study the non-linear characteristics of the heart rate variability (HRV) in patients with normal and abnormal left ventricular function, and explore their relation to both the number of ventricular ectopic beats (VEB) in 24 hours and the ejection fraction. We use the false nearest neighbor method (FNN), a well-known non-linear analysis, which allows obtaining the embedding dimension (EDIM) and the false nearest neighbor fraction at dimension 10 ($FNNF_{10}$). **Objective** To study the relation of both the EDIM and the $FNNF_{10}$ to the number of VEBs in 24 hours and to a known measure of left ventricular function (i.e. left ventricular ejection fraction, LVEF). **Methodology** We studied Holter recordings of a total of 68 cardiac patients and 59 clinically healthy subjects used as a control group. In a first stage we considered two populations: subjects with more than 100 VEBs in 24 h (n=33) and subjects with congestive heart failure (CHF, n=35). In a second stage, the LVEF of 10 out of the total of patients was obtained: 7 had the LVEF measured with 2D-echocardiogram and 3 with a gamma camera. The Holter recordings were carefully analyzed and all of them showed less than 8% artifacts and did not have any consecutive artifact segments longer than 20 sec. These time series were then used to perform the calculation of both, the EDIM and the $FNNF_{10}$. **Results** Stage 1: EDIM values were always between 7 and 10 for control subjects, reaching values as high as 15 for the other groups. The EDIM and $FNNF_{10}$ were higher than normal in all the patients with more than 3000 VEBs/24 h., showing a well-defined correlation between EDIM and frequency of VEBs. The $FNNF_{10}$ also progressively increased from the control group (0.0047±0.0043) to the VEB (0.0346±0.0417) and the CHF (0.1347±0.1443) groups. (The mean difference between groups was always statistically significant with $p<0.0001$.) In the control group the $FNNF_{10}$ remained below a maximum of 0.03 and in the VEB group below 0.18. In the CHF group we obtained $FNNF_{10}$ values as high as 0.3. Stage 2: Out of a total of 10 LVEFs measured, 6 were diminished (lower than 60%). Two of them had elevated EDIM>10, which was never found in subjects with a normal heart. Therefore, the indexes studied were more specific than sensitive. **Conclusion** The non-linear indexes derived from the calculation of FNN are high in patients with VEB and their value correlates with the number of ectopic beats in 24 hours. They are even higher in patients with altered left ventricular function, showing high specificity. In developing countries there exist great difficulties to perform LVEF measures. Therefore, the calculation of these simple non-invasive indexes deserves to be considered as an indirect measure of the left ventricular fraction. These results should be further tested in a larger population.

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Role of brain natriuretic peptide as a predictor of Right Ventricular Dysfunction in patients with Pulmonary Embolism

B. Fabricio[1], K. Jose[1], S. Serafim[1], A. Flavio[1], P.P. Sampaio[1], N Augusto[1], B Alexandre[1], M Joao[1]. *[1]Hospital samaritano*

Background: Pulmonary embolism (PE) is a potentially lethal, albeit under-diagnosed, condition. Right ventricular dysfunction (RVD) is a marker of worse prognosis in patients (pts) presenting with PE, and there is debate over whether RVD constitutes an indication for thrombolytic therapy or not. While echocardiography is the gold-standard method for determination of RVD, to our knowledge serum BNP level has not been studied specifically as a marker of RVD. **Objectives:** To evaluate the accuracy of serum BNP levels to differentiate between PE pts with and without RVD. **Methods:** Retrospective analysis of 10 pts with hemodynamically stable PE (40% with RVD by echo) and normal LV function, who had had serum BNP measurement at the time of PE diagnosis. **Results:** Average age, serum creatinine, and LV ejection fraction (EF) were 81.5±15 and 88.5±5.3 yrs (p=0.6), 69.6±7.1 and e 65.5±9.9% (p=0.76), and 0.9±0.2 and 1.0±0.2mg/dL(p=0.6) for the groups without and with RVD, respectively. Serum BNP levels were 275±182 and 808±294 pg/mL (p=0.019), for those without and with RVD, respectively. Area under the curve (ROC) of BNP for the diagnosis of RVD was 0.958 (95%CI=0.837–1.00), with the best cut point being ≥ 438 pg/dL (sensitivity 100%; specificity 83.3%; PPV 80%; NPV 100%). **Conclusion:** In this small retrospective series, serum BNP level was an excellent predictor of RVD.

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Increase in the embedding dimension in electrocardiograms of adult and pediatric patients with ventricular arrhythmia and congestive heart failure

D.S. Andres[1], I.M. Irurzun[1], M.M. Defeo[2], J. Bleiz[3], E.E. Mola[1], D. Perez Casal[2], J. Paul[2]. *[1]Facultad de Ciencias Exactas. Universidad Nacional de La Plata (INIFTA, CONICET). Argentina. [2]Hospital Interzonal General de Agudos "Prof. R. Rossi". La Plata. Argentina. [3]Hospital de Niños "Sor María Ludovica". La Plata. Argentina.*

Introduction Human electrocardiograms exhibit complex behavior. The study of the heart rate variability (HRV) in normal and pathological conditions might provide non-invasive insights into the cardiovascular system. **Objective** a) To test two non-linear HRV indexes: the false nearest neighbor fraction ($FNNF_{10}$) and the embedding dimension (EDIM) in patients with ventricular ectopic beats (VEB) and congestive heart failure (CHF), and to characterize their changes with age. b) To compare these indexes with the known pNN50 and RMSSD. **Methodology** Three groups were studied: healthy individuals (control group, CG) ranging from 5 to 74 years old (n=83), patients with VEB (n=46) and patients suffering from CHF (n=29). We considered those younger than 16 as pediatric persons. RR-interval time series were obtained from 24-hour Holter recordings and used to determine statistic and non-linear properties of HRV. The false nearest neighbor (FNN) method was used to calculate the EDIM. The FNN curve is constructed as a function of the phase space dimension (DIM), and EDIM is defined as the value of DIM at which it reaches a constant value. The FNN value at a given value of DIM is called false nearest neighbor fraction and its value at DIM=10 ($FNNF_{10}$) is used as a non-linear measure of the HRV to quantify the departure from a normal behavior. **Results** In CG values of 7≤EDIM≤10 were found, independently of age. The $FNNF_{10}$, pNN50 and RMSSD showed a progressive decrease with age. Between extreme age groups younger than 11 and older than 60, the mean difference showed high statistic significance for the three indexes ($p<0.001$). The EDIM was higher than normal (EDIM>10) for every patient with more than 3000 VEBs/24h, showing a correlation between EDIM and the number of VEBs/24h. The $FNNF_{10}$ was progressively incremented in both the VEB and CHF groups. It discriminated between CG, VEB and CHF groups with high statistic significance (p was always <0.0001). The RMSSD showed high discriminative power between CG and CHF or VEB ($p<0.0001$) for adult population while for children its power was smaller ($p<0.01$). The pNN50 was unable to distinguish between CG and CHF (p=0.58) and between pediatric CG and VEB (p=0.57). In adults its discriminative power was weaker than the other indexes ($p<0.05$). **Conclusions** 1) The $FNNF_{10}$ decreases with age, but the EDIM, which is related to the number of variables that govern the cardiac dynamics, is independent of age. An increase in the $FNNF_{10}$ occurs and is associated with VEB and CHF in both adult and pediatric populations and may therefore reflect abnormalities in the left ventricular or autonomic system function. 2) The pNN50 and RMSSD also decrease with age. The performance of the $FNNF_{10}$ to discriminate between healthy and CHF groups and VEB and CHF is better than that of the RMSSD for children and similar in adults. The pNN50 shows a weak discriminative power for all the groups studied in comparison to the other indexes.

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Arterial stiffness surrogates in black-African human immunodeficiency virus-infected patients

D. Lemogoum[1], C Kouanfack[2], L Van Bortel[3], M Leeman[1], JP Degaute[1], PH Van De Borne[1]. *[1]ULB-ERASME HOSPITAL/BELGIUM [2]YAOUNDE CENTRAL HOSPITAL/CAMEROON [3]HEYMANS INSTITUTE OF PHARMACOLOGY/BELGIUM*

Purpose: Human immunodeficiency virus (HIV) infection is associated with an increased risk of atherosclerosis in Caucasian patients, especially among those receiving antiretroviral therapy. Whether HIV-infection increases the risk of atherosclerosis in black-African HIV-infected patients has not been explored, despite Africa remains the most affected continent by the HIV pandemic. In this study investigated arterial stiffness, augmentation index (AI) and central pulse pressure (PP), all early markers of atherosclerosis, in Cameroonians HIV-infected patients. **Methods:** We enrolled 39 black Cameroonians HIV-infected patients (27 treated with protease inhibitors and 12 untreated) carefully matched with 12 healthy Cameroonian controls for age, gender and body mass index. Arterial stiffness was assessed by aortic pulse wave velocity (PWV) using ComplioR systems, while aortic AI and PP were derived from aortic pressure waveform using radial applanation tonometry and transfer function (SphygmocoR). **Results:** Heart rate (HR) was faster in the HIV group than in the healthy subjects (80 +/- 11 bpm vs 72 +/- 14 bpm, P= 0.04). Aortic AI corrected for HR and PWV did not differ between the HIV-infected group and the controls (21 +/- 17 % vs 23 +/- 14 % and 6.15 +/- 1.03 m/s vs 6.55 +/-1.14 m/s, both P> 0.05). By contrast aortic systolic blood pressure and PP were greater in the controls as compared to the HIV-infected group (111 +/- 7.7 mmHg vs 104 +/- 11 mmHg, P=0.05; and 40 +/- 9 mmHg vs 33 +/- 7 mmHg, P=0.02, respectively). In the HIV-infected group, HR was faster in the untreated than in the treated subgroup (85 +/- 19 vs 77 +/- 11 bpm, P= 0.053); whereas PWV and AI corrected for HR were similar in both two subgroup (23 +/- 19 % vs 18 +/- 14 %, and 6.13 +/- 0.91 m/s vs 6.19 +/- 1.30 m/s, both P>0.05). In the treated HIV-infected patients, neither PWV, nor AI was influenced by the time on antiretroviral therapy. By contrast age, mean arterial blood pressure and HR appeared as independent determinants of PWV in the treated HIV-infected patients **Conclusion:** The present study reveals that central PP, an important marker of cardiovascular risk is lower in black-African HIV-infected patients as compared to matched controls, and that HIV-infection status lin Blacks Africans subjects is not associated with increase arterial stiffness, a major determinant of cardiovascular risk. This was observed in both treated and untreated HIV-infected black patients, indicating that atherosclerosis risk remains relatively low among these subjects in Africa.

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Relationship between plasmatic activity of type 1 plasminogen activator inhibitor and the presence of risk factors in patients with type II diabetes.

N Crespi[1], **A Scicolone[2]**, V Sanchez[3], G Scicolone[3]. *[1]Centro de Salud "Agote", San Martín, Prov. Bs. As. Argentina. [2]Hospital "Diego Thompson", San Martín, Prov. Bs. As. Argentina. [3]Instituto de Biología Celular y Neurociencias, Facultad de Medicina, UBA, Argentina.*

Levels of type1 plasminogen activator inhibitor (PAI-1) in plasma have been related to bad prognosis in patients bearing pathologies that affect cardiovascular system. Although, the functional role of PAI-1 can be only estimated by its active molecular form, major part of works have studied the antigenic levels of this molecule without differentiating the active and the latent molecular forms. This work **aims** at investigating whether the plasmatic activity of PAI-1 is increased in patients bearing type II diabetes –a metabolic pathology that affects cardiovascular system and is related, in pathogenic mechanisms, to other cardiovascular diseases- and whether this increase is higher in patients with cardiovascular risk factors such as: essential arterial hypertension or target organ damage. **Methods:** An ELISA assay was used to measure the active PAI-1 in plasma samples of 60 ambulatory patients received in "Agote" Centre of Health for presenting type II diabetes (28) or for other reasons (32). Plasmatic PAI-1 activity was compared between diabetic and non-diabetic patients, and among different groups of patients constituted by the presence or lack of type II diabetes, stage I or II essential arterial hypertension and target organ damage. Student test was used to compare two groups of patients and one way ANOVA with Tukey postest was used to compare three or more groups of patients. Two ways ANOVA was used to establish the relative level of importance of the different pathologic conditions in the PAI-1 variability. $P<0.05$ was considered statistically significant. **Results:** The plasmatic PAI-1 activity is higher in patients with type II diabetes ($p=0.0067$). Among diabetic patients, the PAI-1 activity significantly increases when essential arterial hypertension ($p<0.01$) or target organ damage ($p=0.029$) are added. Among diabetic patients with target organ damage, the cardiac lesion presents the most significant increase in PAI-1 activity ($p<0.0001$). Two ways ANOVA shows that the increase in plasmatic PAI-1 activity depends, in a decreasing level of importance, on the presence of type II diabetes, stage II essential arterial hypertension and target organ damage. **Conclusions:** The plasmatic activity of PAI-1 increases in patients with type II diabetes and this increase is higher when stage II essential arterial hypertension and/or target organ damage (mainly cardiac lesion) are added. This suggests that plasmatic activity of PAI-1 is related to the severity of type II diabetes and it could be useful as a predictive parameter to follow the evolution of these patients.

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Prevalence of hypertension and other cardiovascular risk factors in postmenopausal women. Data from SEPHAR study.

M. Dorobantu[1], E. Badila[1], S. Ghiorghe[1], R.O. Darabont[2], G. Datcu[3], M.R. Luca[4]. *[1]Emergency Hospital Bucharest [2]Universitary Hospital Bucharest [3]"Sf. Spiridon" Hospital Iasi [4]Bios Diagnostic*

Objective of this sub study was to assess the prevalence of hypertension and other cardiovascular (CV) risk factors in postmenopausal women in Romania. **Methods:** Missing the recent epidemiological data about the major CV risk factors, was the reason for starting in 2005 a national study (SEPHAR) which had the main goal to assess these parameters. The study was involved 2017 adult subjects (a representative sample for the Romanian adult population, range age 18–89 yrs). The examination consisted of a nurse-completed questionnaire, blood pressure (BP) measurement, anthropometrical measurements and laboratory tests. In this sub study from SEPHAR we analyzed the prevelence of major risk factors in postmenopausal women. The visceral obesity was defined as waist circumference >88 cm. Diabetes was considered when glycemia > or = 126mg/dl; a value between 100 and 126 mg/dl was impairing fasting glucose (IFG). The metabolic syndrome was defined in accord with NCEP ATP III criteria. The menopausal status was assessed using patient's history of menstrual bleeding. **Results:** There were 150 women in postmenopausal status from 2017 included subjects. The age distribution was: 35–44 yrs-4% ; 45–54 yrs-30.6%; 55–64 yrs-41.3%; >65 yrs-24% females. Depending of area of residence, there were 62.6% females in urban area and 37.3% in rural area. The prevalence of risk factors in postmenopausal women is showed in the table. **Conclusions:** The menopause affects blood pressure levels. The BP rise after the menopause seems to be correlate with increase of other cardiovascular risk factors (diabetes, dyslipidemia, visceral obesity). Despite a higher number of hypertensives treated in postmenopausal women, the control of BP is very low and without significant difference in comparison with general adult population in Romania.

TABLE

Risk Factors	Menopausal women (n=150)	Global sample(2017)	p
Hypertension			
Prevalence	66.6%	45%	<0.01
Awareness	73%	54.4%	<0.01
Treated	61%	39%	<0.01
Controlled	12%	7.8%	ns
Mean SBP mmHg	145.7±25.0	137.6±23.4	<0.01
Mean DBP mmHg	88.5±14.4	83.1±13.1	<0.01
Visceral obesity	65.3%	37%	<0.01
Smoking	14%	29%	<0.01
Diabetes mellitus	12%	5%	<0.01
IFG	16%	14%	ns
Dyslipidemia	64%	46%	<0.01
Metabolic syndrome	58%	21%	<0.01

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Influence of an adecuate zinc intake during fetal and posnatal and adult life on arterial blood pressure and cardiovascular nitric oxide system

C. Arranz[1], A. Tomat[1], S. Finella[1], R. Elesgaray[1], L. Veiras[1], A. Balaszczuk[1], M.A. Costa[1]. *[1]School of Pharmacy and Biochemistry, University of Buenos Aires, IQUIMEFA-CONICET. Argentina.*

Nutrient restriction during critical periods of intrauterine and postnatal growth may result in long-term structural and functional effects and increased risk for the development of cardiovascular pathologies. Previously we demonstrated that moderate zinc deficiency during growth induces an increase in arterial blood pressure and an impaired renal function in the adult life. Moreover it is known that nitric oxide synthase (NOS) is one of the zinc requiring enzymes family and its zinc center is considered to play an essential role in the catalytic activity. The aim was to study 1) the effects of moderate zinc deficiency during fetal and early postnatal life on systolic blood pressure (SBP), cardiac and vascular NOS in the adults and, 2) the effects of zinc supplementation in the adult life after the deficiency during growth. Female Wistar rats received from the beginning of pregnancy up to weaning low (L: 8 ppm zinc) or control (C: 30 ppm zinc) zinc diet. After weaning, male offspring of each group of mothers continued with low (Cl and Ll) or control (Cc and Lc) zinc diet during 60 days. At the end of this period, SBP (mmHg), urinary concentration of nitrites and nitrates (NOx, nmol/ml.min.100 g), NOS activity with L-[U14C]-arginine in aorta and cardiac ventricle (pmol/min"[8]g tissue) were evaluated in 6 animals of each experimental group. Other 6 animals of Cl and Ll groups continued with a diet containing 60 ppm zinc (Cls and Lls), during 60 days more. At the end of the dietary treatment the described parameters were examined. 1) 60 days. *$p<0.05$ vs Cc 2) After supplementation Supplemented zinc diet induced a decrease in SBP compared with 60 days (Lls: 123±3# ; Cls: 133±3**; #$p<0.05$ vs Ll and **$p<0.05$ vs Cl). Moreover we observed an increase in urinary NOx in Lls and Cls (Lls: 1.91±0.2#, Cls: 1.67± 0.2**; #$p<0.05$ vs Ll and **$p<0.05$ vs Cl). An augment in cardiac NOS activity was observed in both supplemented groups compared with the animals exposed to zinc deficiency at day 60. (ventricle: Lls: 160±6#; Cls: 168±4**; aorta: Lls: 173±7#, Cls: 177±8** ; #$p<0.05$ vs Ll and **$p<0.05$ vs Cl). This work brings evidences that zinc deficiency in any period of growth predisposes to the development of high blood pressure and alteration in cardiac and vascular nitric oxide system in the adult life. A supplemented diet with zinc in the adult life after its deficiency was successful to normalize the high values of arterial blood pressure. This effect was accompanied by improve in cardiac and vascular NOS activity. Alteration in nitric oxide system could be one of the mechanisms involved in the alteration of arterial pressure regulation in zinc deficiency.

	Cc	Cl	Lc	Ll
SBP	124±2	141±4 *	141±5*	148±6*
NOx	1.68±0.07	1.10±0.03*	1.01±0.22*	0.58±0.10*
Ventricle NOS	197±3	151±5*	149±2*	139±5*
Aorta NOS	231±5	161±8*	167±6*	163±12*

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Chronic Carbon Monoxide Exposure is Associated with Increased Electrocardiographic P-wave and QT Dispersion

I. Sari[1], S Zengin[2], O Ozer[1], C Yildirim[2], V Davutoglu[1], M Aksoy[1]. *[1]Gaziantep University, School of Medicine, Cardiology Department, Gaziantep, TURKEY [2]Gaziantep University, School of Medicine, Emergency Medicine Department, Gaziantep, TURKEY*

Objectives: Carbon monoxide (CO) exposure at high concentrations might be lethal and is the most common cause of death from poisoning worldwide. Cardiovascular manifestations of acute CO poisoning include myocardial dysfunction, ischemia and infarction, arrhythmias and cardiac arrest which have been the subject of various studies. However, our knowledge about the effects of chronic CO exposure on cardiovascular system and electrocardiogram is limited. P-wave dispersion (Pd) is used to show inhomogeneous conduction of sinus impulses which is known to be electrocardiographic predictors of left atrial enlargement, left atrial hypertension and atrial fibrillation. Prolonged QT interval and QT dispersion (QTd) reflect impaired myocardial refractoriness and potential susceptibility to arrhythmias and sudden death. Chronic exposure to moderate doses of CO without acute toxicity is common especially in the environment and in some professions working in places deprived of adequate ventilation. We therefore aimed to investigate if Pd and QTd were effected in indoor barbecue workers who are chronically exposed to CO which has not been studied previously. **Methods:** Apparently healthy 39 non-smoker male indoor barbecue workers (mean age; 33.0±9.1) working in restaurants for at least three years and 40 age matched healthy men (mean age; 34.7±6.5) were enrolled into the study. Average of working duration of indoor barbecue workers was 15.6±7.1 years. We measured carboxyhemoglobin level, body mass index, blood pressure, heart rate, minimum P-wave duration (Pmin), maximum P-wave duration (Pmax), Pd, minimum QT interval (QTmin), maximum QT interval (QTmax), QTd and corrected QTd (cQTd). **Results:** Clinical characteristics of indoor barbecue workers and the control group were comparable in terms of age, sex, body mass index, blood pressure and heart rate. However carboxyhemoglobin level was higher in indoor barbecue workers than the control group (6.4±1.4 vs 2.1±1.3, $p<0.001$). Indoor barbecue workers had similar values of Pmin and QTmin in milliseconds (75.6±5.8 vs 77.0±6.1; p:non-significant and 358.4±15.0 vs 355.9±15.4; p:non-significant respectively), whereas had significantly higher values of Pmax, Pd, QTmax, QTd and cQTd when compared with the control group (106.1±7.4 vs 101.5±6.6; $p<0.005$, 30.5±7.5 vs 24.5±6.7; $p<0.001$, 406.5±17.6 vs 390.8±13.1; $p=0.001$, 48.4±8.8 vs 34.8±5.8; $p<0.001$ and 53.6±9.1 vs 37.7±6.7; $p<0.001$ respectively). In Pearson correlation analysis Pd, QTmax, QTd and cQTd were correlated with carboxyhemoglobin level (r:0.315; p:0.005, r:0.402;

p<0.001, r:0.573; p<0.001 and r:0.615; p<0.001 respectively). **Conclusions:** Increase in Pmax, Pd, QTmax, QTd and cQTd in subjects with chronic CO exposure suggest that chronic CO exposure at moderate doses might be associated with arrhythmia development. This implication deserves further studies for clarifying the possible linkage between chronic CO exposure and atrial and/or ventricular arrhythmias.

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Association of Changes in Oxidative and Proinflammatory States with Changes in Vascular Function after a Lifestyle Modification Trial Among Obese Adolescents

R. Kelishadi[1], M Hashemi[1], N Mohammadifard[1], S Asgary[1], N Khavarian[1]. [1]*Isfahan Cardiovascular Research Center,Isfahan University of Medical Sciences*

Background: The assessment of the association of changes in oxidative and pro-inflammatory states with vascular function after diet and exercise intervention among obese children has not been previously explored. **Methods:** In this 6-week of diet and exercise intervention study in 35 obese children, age 12–18 years, we evaluated the relationship between changes in anthropometric indices, measures of insulin resistance, C-reactive protein (CRP), oxidized LDL (Ox-LDL) and oxidative stress markers with changes in carotid intima media thickness (C-IMT) and flow mediated dilation of the brachial artery (FMD). **Results:** At the end of the study, body mass index (BMI), waist circumference (WC), and percentage body fat were decreased (p<0.05), however participants remained overweight (BMI> 95th percentile). While FMD improved (p<0.05), the improvement in C-IMT did not reach statistical significance. The changes in BMI, WC, fat mass, ox-LDL, malondialdehyde (MDA), CRP, insulin and HOMA-IR had an inverse correlation with the changes in mean FMD after adjustment for age and sex, with the highest correlations documented for ox-LDL, CRP and WC. The age and sex-adjusted changes in ox-LDL, WC, CRP, MDA and body fat mass had the highest correlations with changes in C-IMT. **Conclusions:** Our findings suggest that a common inflammatory stress condition associated with childhood obesity, notably with abdominal fat deposition, might have a role in the development of the earliest stages of pro-atherosclerotic inflammatory processes and its subsequent vascular dysfunction. These changes might be partially reversible by a short-term of diet and exercise intervention, even without reaching ideal body weight. **Key Words:** childhood obesity, oxidation, inflammation, vascular function, lifestyle modification

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Characteristics of Hypertrophic Cardiomyopathy in the elderly

J. H. Casabe[1], A. Fernandez[1], **F. Landeta**[1], G. Fava[1], F. Vaisbuj[1], R. Peidro[1], R. Laguens[1], R. R. Favaloro[1], C. Lopez[1], E. Guevara[1]. [1]*ICYCC - Favaloro Foundation, Buenos Aires Argentina*

Background: Hypertrophic Cardiomyopathy (HCM) may cause death and disability in patients of all ages although is also frequently compatible with normal longevity. **Objective** The aim of this study was to analyze the clinical and echocardiographic characteristics and the evolution of elderly patients and to compare them to younger patients. **Method** From 11/1992 to 9/2007, 296 consecutively HCM patients were enrolled. They were retrospectively analyzed divided in 2 groups: group I (patients ≥ 75 years) and group II (patients < 75 years). Median/quartiles follow up period was 2.2 (0.8–5.6) years. Categorical variables were compared with the use of the chi-square test and continuous variables Student's t-test. All p values of less than 0.05 were considered to indicate statistical significance. **Results** LVED=left ventricle end diastolic diameter; LVES=left ventricle end systolic diameter IVS= interventricular septum LA= Left atrium diameter; LVOTO=left ventricle outflow tract obstruction; LVEF=left ventricle ejection fraction; ICD=implantable cardioverter- defibrillator; HF heart failure **Conclusions** Compared with younger patients, elderly patients with HCM are predominantly women with more dynamic and more severe LVOTO with more dyspnea. In them dual chamber pacing are more often used. They have lower risk of sudden death and need of ICD and are less prone to progress to end-stage phase with a trend to less death from heart failure.

	Group I (≥75 year) n= 66 (75 %)	Group II (< 75 years) n= 230 (66%)	P
Age (average, range)	80.12 +/- 6.15	48.92 +/- 17.96	
Women	65.2 %	42.6 %	< 0.05
Symptoms	84.8 %	60.4 %	< 0.05
Dyspnea	72.7 %	44.8 %	< 0.05
Angor	13.6 %	22.2 %	ns
Syncope	12.1 %	12.2%	ns
Major risk factor for Sudden Death	19.7 %	32.6 %	< 0.05
History of Sudden Death	0 %	5.2 %	0.058
Atrial fibrillation	16.7 %	10.9 %	ns
MCH familiar	3 %	15.7 %	< 0.05
LVED (mm)	44.56 +/- 6.48	44.33 +/- 7.51	ns
LSED (mm)	24.52 +/- 6	24.41 +/- 7.6	ns
IVS (mm)	19,27 +/- 5,28	19,48 +/- 6,14	ns
LA (mm)	44.06 +/- 7.01	44.29 +/- 8.34	ns
LVOTO frequency	54.5 %	34.3 %	< 0.05
LVOTO (mmHg)	87,22 +/- 113,22	59,03 +/- 47,58	< 0.05
LVOTO Valsalva	99,24 +/- 60,53	76,44 +/- 52,88	< 0.05
LVEF < 50%	0 %	7.4 %	< 0.05
Septal myectomy	0 %	9 %	ns
Dual chamber pace	10.4 %	3.9 %	< 0.05
Alcohol ablation	2 %	3 %	ns
ICD	0 %	16.5 %	< 0.05
Death from HF	0 %	5.2 %	0.058
Sudden Death	0%	4.8 %	0.07

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Assessment of Right Ventricular Function in Inferior Myocardial Infarction by Tei Index.

M. Barranco[1], R. Migliore[1], M. E. Adaniya[1], G. Miramont[1], F. Guerrero[1], H. Tamagusuku[1], A. Sinisi[1]. [1]*Servicio de Cardiología Hospital Eva Perón. Ciudad de San Martín. Provincia de Buenos Aires. Argentina.*

Right ventricular dysfunction frequently accompanies inferior myocardial infarction (MI). Tei index is an index that reflects both, systolic and diastolic function and it is not influenced by abnormal geometric. **Objetive:** To evaluate right ventricular function in inferior MI by Tei index. **Methods:** Fifty patients with MI (58 ± 10 years), 22 with inferior MI and 28 with anterior MI, were propectively studied within 48 hours of admition. Tei index was measured with Doppler echocardiography and calculated for right and left ventricle as (a-b)/b, where a is the interval between the cessation and onset of mitral or tricuspid flow and b is the aortic or pulmonary flow ejection time. **Results:** Right ventricular Tei index was increased in inferior MI compared with anterior MI (0.43 ± 0.17 vs 0.30 ± 0.15 p<0.02) without differences in left ventricular Tei index (0.42 ± 0.17 vs 0.49 ± 0.21 N.S.) **Conclusion:** Right ventricular function can be assessed in patients with inferior myocardial infarction by Tei index without geometric assumptions.

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A NEW TRANSGENIC LINE FOR IN VIVO ASSESSMENT OF BONE-MARROW CELL HOMING TO DAMAGED CARDIAC TISSUE

G. Barila[1], D.L. Altschuler[1], **J.A. Genovese**[2]. [1]*Department of Pharmacology, School of Medicine, University of Pittsburgh* [2]*Cell Biology Laboratory, Heart, Lung and Esophageal Surgery Institute, School of Medicine, University of Pittsburgh*

In cardiac biology cell homing, survival, proliferation, differentiation, transdifferentiation and fusion with resident cardiomyocytes are major unresolved issues. Their understanding is relevant to potential new treatments for acute and chronic cardiac diseases where cell loss is the primary pathogenic mechanism. Current approaches involving the injection of exogenous cells give partial and inconclusive evidence regarding these fundamental biological events. The inflammation generated upon injection and the immediate apoptosis and oncosis of these cells mask the physiological involvement of native cells in myocardium repair. Furthermore, the demonstration of differentiation or fusion of non-cardiac cells to the damaged myocardium remains highly speculative. To overcome these limitations we devised a new mouse model that allows us to monitor these physiological events in the native environment. We have generated a new transgenic mouse where a GFP (sense)-RFP (antisense) cassette was "floxed" by LoxP sites positioned in opposite orientation. A strong ubiquitous promoter drives expression of this reporter construct, thus generating a uniform green fluorescent animal. Upon crossing with a tissue-specific inducible form of CRE, "flipping" of the cassette positions RFP for expression, resulting in a switch from green to red fluorescence, both transiently (inducible) and in a specific cell type. The use of available bone-marrow promoters, therefore, could be exploited in our model to trace native red fluorescent bone-marrow cells in an otherwise green fluorescent background animal. This new system will allow us to quantitatively evaluate bone-marrow cell homing into the myocardium and to develop a bioassay to assess the role of known (i.e. GM-CSF) or new pharmacological agents as potential modulators of this process. Moreover, this new mouse line provides us a unique opportunity to rigorously test the role of differentiation and/or transdifferentiation (red fluorescent cells with cardiac cell markers) and/or cell fusion (yellow fluorescence resulting from the combination of red bone-marrow cells with green cardiomyocytes) in a natural context. This strategy opens a new paradigm in the understanding of endogenous mechanism involved in cardiac repair.

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In-stent restenosis in coronary arteries evaluated with multislice computed tomography of 64 channels

A. Bayol[1], J. Vallejos[1], R. Peloso[1], R. Obregon[1], M. Aguero[1], J. Baccaro[1], J. Mazucco[1], M. Romero[1], M. Vera[1], J. Parras[1]. [1]*Instituto de Cardiologia de Corrientes J.F.Cabral*

Background: Artifacts caused by metallic stent struts have limited the role of 8 and 16- slice computed tomography (CT) scanner to diagnose in-stent restenosis (ISR). **Objectives:** to assess the ability of new generation 64-slice CT to detect ISR of coronary arteries. **Methods and Materials:** From june 2006 to june 2007, forty three consecutive patients (age: 60 ± 11 years, 35 man (81%) with 47 previusly implanted coronary stents (3.25 +/- 0.47 mm) were studied. Patients underwent 64-Slice CT one to trhee days after scheduled invasive coronary angiography (ICA). The CT angiography was analysed by one radiologist and one cardiologist blinded to the results of the ICA. Images were reconstracted in multiple formats using retrospecticve electrocardiographic gating. Stenosis with a diameter >/=50% was considered diagnostic of in-stent restenosis. **Results:** The CT analysis was performed in 47 stents. The in-stent lumen was evaluable by CT in all stents. At ICA four of the 47 stent had ISR. The prevalence of ISR was 8.5 %. Restenoses were correctly identified by CT in 4 of 47 stents. The correlation coeficient was 1. **Conclusion:** Non invasive angiography using 64-slice CT is a potential non-invasive technique for the screening of in-stent restenosis of coronary arteries.

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Impact of a supervised exercise rehabilitation program on secondary prevention goals after acute coronary syndromes.

IB Ignacio Batista , HF Horacio Fernandez, MB Mariano Berro, FL Federico Lipszyc, JB Jose Bonorino, LP Luciano Pastori, SB Sergio Baratta, MO Martin O'Flaherty, GI Gilbert Iacometti, AH Alejandro Hita. [1]*Hospital Universitario Austral* [2]*Hospital Universitario Austral* [3]*Hospital Universitario Austral* [4]*Hospital Universitario Austral* [5]*Hospital Universitario Austral* [6]*Hospital Universitario Austral* [7]*Hospital Universitario Austral* [8]*Hospital Universitario Austral* [9]*Hospital Universitario Austral* [10]*Hospital Universitario Austral*

Background: Medically supervised exercise rehabilitation (SER) limits the physiological and psychological effects of cardiac illness and reduces the risk of sudden death or reinfarction. SER also involves education, counseling and close communication between patients and the cardiac rehabilitation team that may promote long-term behavioral change with a favourable impact on risk factors and in achieving secondary prevention goals. **Objective:** To compare the achievement rate of secondary prevention goals at one year after an acute coronary syndrome (ACS) in patients recruited in a SER at discharge with patients in usual care. **Methods:** Retrospective chart review analysis of ACS cases admitted to Hospital Universitario Austral between 2000 and 2006 and followed by a staff cardiologist. SER Group received an average of 3 sessions per month by at least one year. Patients in usual care did not participate in those sessions and were followed by his or her physician. We estimated the proportion of patients achieving individual goals proposed by the AHA/ACC Guidelines for Secondary Prevention 2006 recommendations, as well as the proportion achieving 5 or more goals.. **Results:** 310 cases were analyzed and 148 meet inclusion criteria (120 men; age, 60 ± 10 years). 28 patients (18.9%) had been enrolled in a SER program at discharge. The table shows the proportion of patients achieving secondary prevention goals by intervention group. The crude OR of achieving >5 goals was 0.31 (95%CI 0.12–0.79) and after adjusting by age and sex (logistic regression) the OR was0.37 (95 CI% 0.14–0.95) **Conclusions:** Overall, the rate of goal achievement is good, except for weight reduction and influenza vaccination. Patients participating in a medically supervised exercise rehabilitation program have a higher chance of achieving more secondary prevention targets, particularly in smoking cessation and physical activity. The apparent lack of effect on other goals may be related to the specific nature of the intervention, but contamination of the usual care group could not be excluded.

	SER group n=28	No-SER n=120	P value
Smoking cessation in smokers n=50	7/11 (63.6%)	12/39 (30.8%)	0.047
Physical activity	22(74%)	42 (35%)	<0.0001
Body mass index <25	3 (10.7%)	12 (10%)	0.91
LDL chol <100 mg/dl	18 (63%)	58 (48.3%)	0.128
Glycemic control	21 (75%)	80 (66.7%)	0.393
Blood pressure control	27 (96.4%)	100 (83.3%)	0.073
Antiagregation	27 (96.4%)	115 (95.8%)	0.88
Beta blockers	26 (92.9%)	96 (80%)	0.1
Angiotensin-Converting- Enzyme blockers	21 (64.3%)	66 (55%)	0.052
Influenza vaccination	3 (10.7%)	7 (5.8%)	0.3
> 5 goals	22 (78.6%)	61 (50.8%)	0.007

P581

Value of electrophysiological testing and catheter ablation in children and adolescents

A. Stefani[1], O. Perez Mayo[1], G. Costa[1], R. Speranza[1], D. Deluso[1], C. Zuloaga[1]. [1]*Hospital Profesor Alejandro Posadas*

Background The electrophysiological study (EPS) and radio-frequency catheter ablation (RFA) are useful tools in the diagnosis and treatment of patients with tachyarrhythmia, but are less performed in pediatric patients. **Objectives** To test the efficacy and safety of invasive approach for diagnosis and treatment of tachyarrhythmia in pediatric patients. **Method** Among 2855 procedures performed between August 1992 and August 2007 only those about pediatric patients (age ≤ 20 years) were selected. A total of 113 procedures (EPS and RFA) were performed in 100 patients referred because documented or suspected tachyarrhythmia. Sixty four patients (64 %) were male; mean age 15.6 years ± 2.5 years (8–19). Seventy two accessory pathways (AP) (63.7 %), 13 atrial tachycardia (11.5 %), 9 atrioventricular nodal reentrant tachycardia (AVNRT) (8 %), 2 ventricular tachycardia and 2 abnormal ventricular conduction disturbances were recognized. No tachycardia was induced in 15 procedures. Of 72 AP 70 were Kent bundle, 55,7 % were located in the right ventricle. Of the remaining two, one was atriofascicular (Mahaim fibers) and the other was a permanent juntional reciprocating tachycardia (Coumel tachycardia). **Results** Seven patients had 2 AP (9.7 %). The acute success rate (ASR) in RFA of AP was 92.4 %. ARF was not performed in 6 patients with parahisian AP because risk of complete AV block. There were 2 recurrences of functional AP (3.3 %). The ASR in atrial tachycardia and AVNRT was 66.7 % and 100% respectively, with 1 recurrence in each group. The 2 cases of ventricular tachycardia were successfully ablationed. Global ASR was 90.7 % in the group. No complications were seen. **Conclusions** 1) The invasive approach in children and adolescents is safe and effective as in adult patients. 2) There were less complications than adult patients probably because the characteristics of the study population (majority of AP and normal hearts). 3) The rate of multiple AP was higher than adult population, justifying a more extensive mapping. 4) In our population a higher rate of parahisian AP and a lower rate of AVNRT than adult population were observed.

P582

Cardiovascular Risk Factors in Rural Mexico: Results from the Proyecto Puentes de Salud

KA Olson[1], LA Temming[1], CR Clover[1], TD Snyder[1], AD Nanney[1], IJ Nelligan[1], AL Rollins[1], BD Skinner[1], PY Frasier[1], MG Cohen[1]. [1]*University of North Carolina at Chapel Hill*

Background Hispanics are the largest and fastest growing minority in the United States (U.S.), with Mexicans being the largest Hispanic subgroup. However, little is known about their antecedent lifestyles and health risks and how these might contribute to their health status when they emigrate to the U.S. and other nations. Cardiovascular (CV) risk factors and outcomes among Mexican Americans living within the U.S. have been described; however there is a lack of data on the prevalence of these factors in rural Mexicans. We investigated the prevalence of cardiovascular risk factors and health-related behaviors among rural residents of Guanajuato, Mexico. **Methods** Participants were recruited from 15 rural communities in Guanajuato, Mexico during the summer months of 2006 and 2007. Participants were screened for hypercholesterolemia (total cholesterol >200 mg/dL), impaired glucose tolerance (fasting glycemia >100mg/dL), elevated blood pressure (BP >140/90), abdominal obesity (waist-to-hip ratio >0.9 for men and >0.85 for women), and for low HDL cholesterol (HDL-C<40 mg/dL men, <50mg/dL women). Total cholesterol, HDL cholesterol, and fasting glucose were measured using a point-of-care device. Participants were also counseled about risk factors for cardiovascular diseases and diabetes, and interviewed using a standardized questionnaire that included demographic information, past medical and family history, dietary and lifestyle behaviors, and social and psychological health. **Results** A total of 699 participants were included in the study. Prevalence of elevated blood pressure was 35.6%, and 22.5% of the sample had impaired glucose tolerance. Frequency of hypercholesterolemia was 18.3% and frequency of low HDL was 82.5%. Abdominal obesity was present in 78.6% of subjects. Of note, 39.6% met modified ATP III criteria for metabolic syndrome. The table depicts demographics and CV risk factors. **Conclusions** Our study shows a high prevalence of cardiovascular risk factors in rural Mexicans. The prevalence of metabolic syndrome and of low HDL cholesterol levels was particularly noteworthy in this relatively young cohort. Future research may focus on the possible role of lack of health-literacy in perpetuating poor diet, limited exercise, and poor daily health choices. Improving the health of Mexicans in their place of origin may also have a ripple effect on the health of Latin American immigrants to other nations.

Variable	Mean (±SD)
Mean age (years)	46.5±16.0
Female Gender	80.7%
Mean Systolic BP (mmHg)	132.9±21.0
Mean Diastolic BP (mmHg)	80.8±11.1
Fasting Glycemia (mg/dL)	97.3±37.2
Total Cholesterol (mg/dL)	172±33.8
HDL Cholesterol (mg/dL)	36.7±10.4
Waist-Hip Ratio	0.91±0.07

P583

Influence of Emigration of Rural Mexicans to the United States and Cardiovascular Risk Factors in Close Relatives who Remain in Mexico

CR Clover[1], LA Temming[1], KA Olson[1], SM Skinner[1], JM Reardon[2], PY Frasier[1], D Reuland[1], BD Skinner[1], A Krishnarao[2], MG Cohen[1]. [1]*University of North Carolina at Chapel Hill* [2]*Duke University*

Background Several studies have documented that acculturation to western society is related to worsened cardiovascular (CV) health. This is significant in the United States (US) where a rapidly growing Mexican population now accounts for over 9% of the US populace. Several studies confirm that Mexican Americans are at increased risk for developing CV risk factors when compared with non-Hispanic white Americans. Cultural changes that unfavorably affect the CV risk-factor profile may also occur within Mexico due to communication and transfer of currency between Mexicans who are working in the US and their relatives who remain in Mexico. **Methods** A total of 432 participants living in 9 communities in the state of Guanajuato, Mexico were included in this study. All participants completed an interview which assessed 1) the presence of a relationship between the participant and someone in the US and 2) the potential for a spread of US cultural values (defined by degree of communication with relative in the US and amount of currency received). Next, participants were assessed for CV risk through measuring waist-to-hip ratio, blood pressure (BP), fasting glycemia, total cholesterol and HDL-cholesterol. Elevated waist-to-hip ratio was defined as > 0.9 for men and > 0.85 for women. Elevated BP was defined as a systolic BP >140 mmHg or a diastolic blood BP >90 mmHg. Impaired glucose tolerance was defined as fasting glycemia >100 mg/dL. Elevated total cholesterol and low HDL-cholesterol were defined as > 200 mg/dL and < 40 in men/< 50 in women, respectively. **Results** A total of 316 participants (73%) reported a close relationship with an individual living in the US. The table displays the characteristics of the study population according to the presence of a relative in the US. We found no statistically significant relationship between having a relative in the US and increased CV risk. **Conclusions** This study shows no association between having close relatives living in the US and increased CV risk factors among those staying in Mexico. The effect of US cultural values in rural Mexicans and their health behaviors may be mediated through complex mechanisms other than having close family members in the US. Further studies are warranted to examine whether or not proximity to the US unfavorably affects the risk-factor profile of rural Mexicans.

Variable	Close Relative in US (n=316)	No Close Relative in US (n=116)
Mean age (years)	44.9 ± 15.6	48.2 ± 17.0
Female gender	83.6%	77.5%
Systolic BP (mmHg)	132 ± 19	135 ± 24
Diastolic BP (mmHg)	81 ± 11	81 ± 13
Total Cholesterol (mg/dL)	170 ± 35	172 ± 35
HDL Cholesterol (mg/dL)	36.0 ± 10.3	36.4 ± 10.9
Fasting Glycemia (mg/dL)	93.1 ± 39.4	92.4 ± 29.3
Waist-to-Hip Ratio	0.90 ± 0.12	0.91 ± 0.11

P590

Correlation between serum high sensitivity CRP level and inhospital cardiac events in the patients with unstable angina

H. Kazerani[1], A. Rai[2], V. Dehlaghi. *[1]Assistant professor in cardiology. kemanshah university of medical sciences [2]Assistant professor in cardiology and fellowship of angioplasty kemanshah university of medical sciences [3]Assistant Professor, Department of Medical Sciences, Kermanshah University of Medical Sciences, Kermanshah, Iran.*

Abstract: Introduction & objective : Several studies have been performed to evaluate correlation of serum high sensitivity CRP level with the prognosis of the patients with diagnosis of unstable angina, and by now different results were reported. The aim of this study was to assess correlation between serum high sensitive CRP level and inhospital prognosis and cardiac events in the patients with unstable angina. **Materials and methods:** This descriptive analytic study was performed between Dec 2004 till may 2006 in Shahid Beheshti hospital. kermanshah, Iran. 250 patients were collected for high sensitive CRP measurement. **Exclusion criteria were:** acute ST elevation MI, Non ST elevation MI, patients with history of recent infection, patients with recent trauma and patients with serum high sensitive CRP level more than 10 my/lit.patients were divided to two groups. First group whose serum high sensitive CRP level was less than 3 mg lit and second group whose serum high sensitive CRP level was between 3 and 10 my/lit. They were followed for recurrent chest pain, arrhythmias, pulmonary edema, acute myocardial infarction and in hospital death. Results were analyzed with x^2 and T- test. **Results:** Mean age were 57± 7.8 and 58 ±11.5 in first group and second group respectively. There was statistically significant difference in some cardiac complications such as dyspnea, duration of hospitalization, recurrent chest pain, ccu admittion(P value <0.001) and in hospital myocardial infarction (P value =0/03), between two groups. Some complications did not have significant difference such as pulmonary edema, cardiogenic shock, arrhythmia, S3, S4 and pulmonary rales.There was no mortality in both groups. **Conclusion:** According to the results, we can use serum high sensitive CRP level for risk stratification in the patients with diagnosis of unstable angina. Obviously the patients with high serum h.s. CRP level need more attention whether early invasive management help these patients, may be the matter of later studies.

P593

Analysis of Rate-Pressure Product In South Brazilian Population

K.C. Belli[1], T. Dipp[1], T.F. Panigas[1], C.F. Panigas[1], D.C. Bündchen[1], C.M. Richter[1], J.Z. Klafke[1], R. Killing[1], P.R.N. Viecili[1–2]. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background: The rate pressure (RP) product (RP = HR x systolic BP) reflects the myocardium oxygen consumption (mVO2), as an increase in heart potency and an important prediction factor of mortality for cardiovascular disease. The correlation with anthropometric, metabolic and cardiovascular variables may contribute for a better clinical analysis of healthy persons or cardiac patients. However, there are few studies that describe the correlation of RP with several population characteristics. **Objective:** We analyzed the Brazilian specific populational rate-pressure product and its possible correlation with anthropometric, metabolic and cardiovascular findings **Methods:** From a database, 1100 subjects were analyzed, 638 female (F: 54±14 years) and 462 male (M: 55±14 years), in 36 cities, in South of Brazil. They were assessed at the treadmill test, with Bruce protocol, to obtain cardiovascular variable and indirectly maximum consumption of oxygen (VO_2 máx). Diabetes mellitus, smoking, high cholesterol and triglycerides, hypertension, sedentary and stressful lifestyle history were considered. Age (years), weight (kg), body mass index (BMI: kg/m^2), abdominal circumference (AC: cm) were considered. Systolic (SBP) and diastolic (DBP) blood pressure at rest, pre (SBPi/DBPi) and peak (SBPp/DBPp) treadmill test, time of treadmill test (TTT), VO_2, heart rate predicted (HRPr) and peak (HRP) were measured. Total cholesterol, LDL, HDL, VLDL, glucose and triglycerides levels were analyzed. RP was correlated with all variables. Data were reported as mean ± SD, linear regression analyses to determine the correlation between variables. **Results:** The subjects, 7% had history of diabetics, 12% smokers, 30% hypercholesterolemics, 19% hypertriglyceridemics, 42% hypertensive, 68% sedentary and 77% had stressful lifestyle. RP mean was M: 28382 ± 6602 and F: 26345 ± 5403mmHg.mhr. Weight was 77 ± 27kg; BMI was by 28 ± 10kg/m^2; AC: 98 ± 14cm; SBP/DBP in rest 138/84 ± 23/11mmHg; SBPi/DBPi: 138/87±21/11mmHg; SBPp/DBPp: 187/90 ± 28/18mmHg; TTT: 7 ± 3min; VO_2: 27 ± 10ml(kg.min)$^{-1;}$ HRPr: 165 ± 14bpm; HRP: 146 ± 25bpm; total cholesterol 212 ± 46mg/dl, LDL 129 ± 39mg/dl, HDL 51 ± 14mg/dl, VLDL 33 ± 19mg/dl, glucose 98 ± 27mg/dl and triglycerides 160 ± 125mg/dl. In the table below, RP presented strong and positive correlation with HRP and SBPp, regular and positive correlation with HRPr and VO_2; regular and positive with TTT, with little difference between sex and finally, had regular and negative correlation with age. All the anthropometric and metabolic variables had no correlation. **Conclusion:** The Brazilian specific population rate-pressure product had only some correlation with treadmill test variables and age. However, in this study, the anthropometric and metabolic variables had no correlation.

VARIABLES	GENERAL POPULATION (R)	MALE (R)	FEMALE (R)
SBPp	0.7	0.7	0.6
HRP	0.7	0.8	0.7
HRPr	0.4	0.5	0.3
DBP	0.3	0.3	0.3
VO_2	0.4	0.4	0.3
TTT	0.4	0.4	0.2
AGE	- 0.5	- 0.5	- 0.3

P596

Analysis of Maximal Oxygen Consumption-VO2 max of a Brazilian Specific Population

K.C. Belli[1], T.F. Panigas[1], T. Dipp[1], D.C. Bündchen[1], C.F. Paniga[1], C.M. Richter[1], J.Z. Klafke[1], M.A. Silva[1], J.L.C. Pippi[1], P.R.N. Viecili[1–2]. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background: Sedentary lifestyle represents the principal changeable risk factor for cardiovascular disease and influences on other risk factors. Changes in the cardiorespiratory condition through physical exercise have the objective to promote health and reduce risk factors for cardiovascular disease. To begin a safe and effective exercise program, exercise testing (ET), physical examination and laboratory exams are necessary. There are a few studies that confirm the correlation of maximal oxygen consumption (VO_2) with anthropometric, metabolic and cardiovascular findings. **Objective:** We analyzed the Brazilian specific population VO_2 and its possible correlation with anthropometric, metabolic and cardiovascular findings. **Methods:** From a database, 1100 subjects were analyzed, 643 female (F: 54 ± 14 years) and 457 male (M: 55 ± 14 years), in 36 cities, in South of Brazil. They were assessed at the treadmill test, with Bruce protocol, to obtain cardiovascular variable and indirectly VO_2max. Diabetes mellitus, smoking, high cholesterol, triglycerides, hypertension, sedentary and stressful lifestyle history were considered. Age (years), weight (kg), body mass index (BMI: kg/m^2) and abdominal circumference (AC: cm) were considered. Systolic (SBP) and diastolic (DBP) blood pressure at rest, pre (SBPi/DBPi) and peak (SBPp/DBPp) treadmill test, time of treadmill test (TTT), VO_2max, rate-pressure product (RP), heart rate predicted (HRPr) and peak (HRP) were measured. Total cholesterol, LDL, HDL, VLDL, glucose and triglycerides levels were analyzed. VO_2max was correlated with all variables. Data were reported as mean ± SD, linear regression analyses to determine the correlation among variables. It was considered P < 0,05 significance. **Results:** The subjects, 7% had history for diabetics, 12% smokers, 30% hypercholesterolemics, 19% hypertriglyceridemics, 42% had hypertensive history, 68% sedentary and 77% had stressful lifestyle. Weight was 77 ± 27kg; BMI was by 28 ± 10kg/m^2; AC: 98 ± 14cm, SBP/DBP 138/84 ± 23/11mmHg; SBPi/DBPi: 138/87 ± 21/11mmHg; SBPp/DBPp: 187/90 ± 28/s18mmHg; TTT 7 ± 3min; VO_2: 27 ± 10ml(kg.min)$^{-1;}$ RP: 27202 ± 6019mmHg.mhr; HRPr: 165 ± 14mhr; HRP: 146 ± 25mhr; total cholesterol 212 ± 46mg/dl, LDL 129 ± 39mg/dl, HDL 51 ± 14mg/dl, VLDL 33 ± 19mg/dl, glucose 98 ± 27mg/dl and triglycerides 160± 125mg/dl. The correlation are in the table below. VO_2 had regular and inverse correlation with age, AC, SBP and SBPi; moderate and positive correlation with HRPr, HRP and RP, in both gender. The other characteristics, such as anthropometric, metabolic and cardiovascular variables had no correlation with VO_2. **Conclusion:** In the Brazilian specific population VO_2max had correlation with age and some treadmill test variables.

VARIABLES	POPULATION (R)	MALE (R)	FEMALE (R)
AGE	- 0.5	- 0.5	- 0.5
AC	- 0.2	- 0.4	- 0.3
SBP	-0.3	- 0.3	- 0.3
TTT	0.9	1.0	0.9
SBPi	- 0.3	- 0.1	- 0.4
DBPp	- 0.2	- 0.2	- 0.3
HRPr	0.5	0.5	0.5
HRP	0.5	0.6	0.5
RP	0.4	0.4	0.3

P597

The role of clinical laboratory in high-risk for death groups selection using classification tree analysis for infantile dilated cardiomyopathy.

Vitor Manuel Pereira Azevedo[1], Marco Aurélio Santos[1], Márcia Bueno Castier[2], Maria Cristina C. Kuschnir[1], José Geraldo Castro Amino[1], Maria Ourinda M Cunha[3], Rogério Brant Martins Chaves[1], Bernardo Rangel Tura[1], Francisco M Albanesi Filho[2], Regina Maria De Aquino Xavier[1]. *[1]National Institute of Cardiology [2]State University of Rio de Janeiro [3]National Institute of Cancer*

Background: infantile dilated cardiomyopathy has high mortality. The final treatment is heart transplantation and in the future, stem cell transplantation. Several previous reports showed the importance of clinical, echocardiographic and electrocardiographic data regarding prognosis in dilated cardiomyopathy. Nevertheless, there is not criterion regarding clinical laboratory to anticipate the death at presentation. **Objective:** select subgroups of children with high risk of death by dilated cardiomyopathy using classification tree analysis, regarding clinical laboratory, at presentation. **Patients and Methods:** this is a retrospective study of 128 children with dilated cardiomyopathy (42 deaths). It was analyzed 26 clinical laboratory exams. To build the tree it was employed CART algorithm, with selection by GINI index and prune by cost-complexity, aiming to maximize probability reason. **Results:** From clinical laboratorial data, it was built a tree with four branches and five nodes corresponding to four variables, selecting two high-risk subgroups for death at presentation: a) children with serum potassium >4.2mEq/l and BUN>46.5mg% and b) children with serum potassium <4.2mEq/l, but with serum sodium ≤139.5mEq/l and total Creatine Kinase ≤189.5mg%. **Conclusion:** These clinical laboratorial select parameters could add value to the clinical, echocardiographic and electrocardiographic classical markers of death, regarding prognosis in dilated cardiomyopathy. Adding these new parameters, it is possible to anticipate risk of death at presentation. If therapeutic response is not adequate, then heart transplantation and perhaps in the future, stem cell transplantation, should be indicate, with setting the child in waiting list.

P598

JOB STRESS AND ARTERIAL HYPERTENSION IN PREGNANCY

J. Marques Neto[1], S.A.G. Marques[2], M.S. Queroz[3], I. Fonseca[4], S. Moura[5], N. Oliveira[6], T.M. Araujo[7]. *[1]State University of Bahia - UEFS,Brazil [2]Public Hospital Cleriston Andrade - SESAB [3]Public Hospital Cleriston Andrade - SESAB [4]State University of Bahia - UEFS [5]State University of Bahia - UEFS [6]State University of Bahia - UEFS [7]State University of Bahia - UEFS*

Arterial hypertension in pregnancy is the main cause of maternity mortality, being a public health problem in developing countries. Insertion of women on the work market has been gradual and constant in Brazil. Some occupations are more female dominant and present limitless schedule, enormous work load and lack of leisure time, besides daily domestic activities. After the 80's, studies evaluating occupational stress appears, especially psychosocial factors, with emphasis in many female social roles and their repercussion on women's health. The Job Strain Model was introduced by Karasek and the epidemiological investigations of the association between job and cardiovascular illness increased drastically 30 years ago. This model sustains the hypothesis that stress occurs when there is a labor situation with psychological demand and control (decision) at work, which provokes diverse effects on health, triggering both axes – sympathetic-adrenomedular and adrenocortical – that may result in a highly deleterious combination to health. The sympathetic nervous system has participation in the genesis, clinical presentation and maintenance of arterial hypertension. The objective of this study was to evaluate the association between psychosocial factors of professional work and arterial hypertension (AH) in pregnant women. It is a controlled-case study. The cases were selected at an ambulatory care unit of high risk pregnancy from a public hospital in Bahia (Brazil) and the controls at health units that originated the cases. The psychosocial aspects of the study were evaluated in relation to main job positions, using the Job Content Questionnaire (JCQ). The sample was formed by 90 cases and 224 controls. It was found a positive association between psychosocial aspects and AH (OR=4.14) in pregnant women who had passive jobs when compared to the ones who had active jobs (p=0.035), though the use of a logistic regression model. A passive job implies that the job leads to the declining of an individual's global activity (gradual atrophy of ability to learn) and the reduction of the capacity to produce solutions for faced activities and problems. In this study, the association between job psychosocial characteristics and AH was evidenced, strengthening the hypothesis that job stress during pregnancy increases AH risk.

P599

DILATED CARDIOMYOPATHIES: TREATMENT WITH STEM-CELLS : EXPERIENCE DURING 30 MONTHS.

O. T. Greco[1.2], J.L.B. Jacob[1.2], R.V. Ardito[1.2], M.R. Lago[1.2], A. Parro Junior[1.2], R.T. Takeda[1.2], F.V. Salis[1.2], L.P. Ruiz[1.2], M.A. Ruiz[1.2], A.C. Abreu[1.2]. *[1]IMC-Instituto de Molestias Cardiovasculares [2]HMC-Hospital de Moléstias Cardiovasculares*

Objective: The Cell Therapy with Autogenic Stem-Cells of Bone Marrow (BM) has been considered as a safe and promising option in the treatment of cardiac surgeries. It's being performed the randomized multi-centric study (EMRTCC) of cell therapy in cardiology, in which several Brazilian institutions are participating, is under way in the country. The Instituto de Moléstias Cardiovasculares (IMC) de São José do Rio Preto, SP, Brasil is also one of the Institutions involved. To acess the value that celular therapy improve the ventricular function in patients with dilated cardiomyopathies. **Methods:** With an effective participation in the multi-centric study, the IMC has allocated 32 patients in the groups of chagasic and dilated cardiomiopathies. In addition to that, it has performed procedures in this project since early 2005 with the inclusion of other 33 patients. As to the multi-centric study, it is important to mention that we don't who has received stem-cells, because it is a double-blind randomized study whereas all the patients in the Institutional study have received stem-cells. The cells have been administered either hemodynamically or surgically and all the patients in the multi-centric study have received them hemodynamically. **Results:** In this period of time the chagasic patients had a worse evolution than the other patients with cardiomyopathy. The ejection fraction was an important predictive value for the prognostic of their evolution and the artificial cardiac pacemaker patients, especially those with resynchronizers, had an apparently better evolution than those without pacing. **Conclusion:** The cellular therapy was safety in these patients and improved the ventricular function in general proportion, but the chagasic patients were the worse follow-up.

P600

Intrahospital and long term clinic outcomes of coronary angioplasty with drug eluting stent, in diabetic patients, compared with the no diabetic ones.

F. F.O. Fernando Fabian Ordonez[1], **C.A.A. Carlos Alejandro Alvarez**[2], A.C. Alberto Cristino[3], C.A.I. Carlos Alvarez Iorio[4]. *[1]Hospital Privado del Sur-Bahia Blanca-Argentina [2]Hospital Privado del Sur-Bahia Blanca-Argentina [3]Hospital Privado del Sur-Bahia Blanca-Argentina [4]Hospital Privado del Sur-Bahia Blanca-Argentina*

Basis Although randomized trials have suggested what the value of drug eluting stents is, in a selected group of diabetic patients, very little is known about its true role in "Off Label" indications. **Material and methods** 255 patients were treated with coronary angioplasty (CA) with drug eluting stent between 31–5 -03 and 28–2–07, 57 patients were diabetic and 159 were no diabetic ones, both groups were compared. The average length of follow-up was 22 months (6–45). Both groups were similar, with the exception of the female sex (44% in diabetic ones and 19.4% in no diabetic ones=P>0.001, and in indications of coronary angioplasty because of drug stent restenosis in diabetic patients: 22% vs. 7.1% in no diabetic patients P=> 0.003. The CA was indicated: In diabetic patients vs. no diabetic ones: ostial lesions: 5% vs. 8.2%, total obstruction: 10.2% vs. 9.7%, bifurcation: 3.3% vs. 4.6%, restenosis bare stent: 13,5% vs 17,3%, restenosis stent with drug: 22% vs. 7,1%, average of small vessels: 2,9mm (25–40mm), average of lesion length: 10–50mm (23mm) **Results** There were no significant differences in the success of the procedure (100% diabetic patients vs. 99.5% no diabetic ones), the survival free of cardiac death and acute infarct of the myocardium (100% diabetic patients vs. 98.8% in no diabetic ones), late thrombosis (0% in diabetic vs. 1.2 in no diabetic ones), cardiac mortality (0% diabetic patients vs. 0.5% in no diabetic ones), general mortality (1.2% in diabetic ones vs. 2.0% in no diabetic patients). Survival free of major events was greater in no diabetic patients (89.6% vs. 79.7% in diabetic patients) at the expense of greater revascularization of the responsible lesion in diabetic patients (20.3% vs. 9.2 % in no diabetic ones) P> de 0,02. There were 84.9% asymptomatic patients among the ones with no diabetes vs. 72.9% of diabetic ones, P>0.03. The statistic method used was chi 2, with SPSS 12.0 software, taking P as statiscally significant (P=0.05) **Conclusions** Despite the use of drug eluting stents, angioplasty "Off. Label" in diabetic patients had a worse evolution prospect than in the no diabetic ones et the expense of a higher rate of revascularization of the responsible lesion, without statistically significant differences in mortality and myocardial infarct, similar to the results published in literature Trials and Records.

P601

ACAP™CONFIRM: A NEW ALGORITHM BASED ON EVOKED-RESPONSE DETECTION FOR ATRIAL CAPTURE CONTROL. A SHORT-TIME FOLLOW-UP STUDY

J. Olagüe[1], J.G. Martínez[2], J.J. García-Cuerrero[3], J. Fernández De La Concha[3], C. Llorente[4], F. Crespo[4], A. Ibañez[2], M.J. Sancho-Tello[1], O. Sanz[5]. *[1]Hospital Universitari La Fe, Valencia [2]Hospital General Alacant, Alicante [3]Hospital Universitario Infanta Cristina, Badajoz [4]Hospital Xeral Calde, Lugo [5]St. Jude Medical, Spain*

Evoked-response detection is used in cardiac pacing for different purposes. A new algorithm, based on analysis of evoked response, for automatic control of atrial output has been recently introduced. -ACap™Confirm, St. Jude Medical, Sylmar, Ca-. In this prospective multicenter study we intend to analyze the feasibility and behavior of this algorithm during a short-time follow-up. **Patients and Methods** We implanted a Zephyr DR5820 pacemaker in 46 patients (23 male; 23 female; 51–86 y; 71.8 ± 8.3 y): 29 p for AVB, 15 p for SSS and 2 p for carotid sinus syndrome. There were 44 implantations and 2 replacements. Atrial leads with active fixation (Group A, n = 28) -1688T/52 in 20 p and 1788TC/52 in 8 p- and passive fixation (Group P, n = 18) were compared. We have studied the possibility of programming ACap™Confirm immediately and 10 days after implant with nominal pulse width (PW). We also tested all available PW at 3 months follow-up with the same objective. **Results** Immediately after implantation ACap™Confirm could be successfully enabled in 16/45 p (1 p showed paroxysmal AFib during procedure) and 10 days later in 2¼6 p. Results at implantation and at 3 months follow-up are shown in Table. **Conclusions** ACap™Confirm is an algorithm for atrial capture control showing a relationship with time to be enabled. A few days after implant, this algorithm could only be enabled in near ? of p, while at three months follow-up could be enabled in 83%. ACap™Confirm activation with passive fixation leads needed to program lower PW than nominal (0.4 ms). A larger study is needed to verify whether the active fixation lead has better outcome compared to passive fixation.

	Implantation Atrial threshold (V)	Implantation Imp (Ω)	Implantation AEGM (mV)	3 months Nom PW A Cap™ enabled	3 months All PW ACap™ enabled	3 months Atrial threshold (V)
Group A	0.85 ± 0.31	518 ± 67	3.6 ± 1,3	20/28 (71%)	25/28 (89%)	0.77 ± 0,40
Group P	0.70 ± 0.27	577 ± 93	4,9 ± 2.0	4/28 (22%)	13/18 (72%)	1.07 ± 0.43
p=	.44	.32	.16	.003	.14	.55

P602

New ECG pattern in young patient with catecholaminergic polymorphic ventricular tachycardia

L. Makarov[1], T. Kyryleva[2], S. Chuprova[3], V. Komoliatova[4]. *[1]Children center for syncope and arrhythmias [2]Moscow Institute for pediratry [3]Children center for syncope and arrhythmias [4]Children center for syncope and arrhythmias*

Cathecholaminergic polymorphic ventricular tachycardia (CPVT) is an uncommon arrhythmia in young patients with high risk of sudden death (SD). The aim of this study was to define of clinical and ECG patterns in young pts with CPVT. **Methods:** CPVT was diagnosed 20 pts 3–15 years (8,5 ± 3,2), 11 boys, 9 girls in different russian clinics. 10 (50%) pts had been previosly treated as epilepsy. Evidence heart diseases, long QT syndrome, syndrome Brugada, digoxin toxity were excluded for all pts. Circadian index (CI) was calculated from as ratio mean HR (bpm) during awake to mean HR during sleep by results of HM (normal limit of CI - 1,24–1,44, L. Makarov 1997). **Results:** The CPVT was polymorphic in 5 cases (25%), polymorphic and bidirectional (BCVT) in 15 (75%). 7 pts (age 8,9 ± 3,7, boy/girls – 4/3) had a normal PR interval (NPRI) on rest ECG, 13 - a short PR (SPRI) - 0,11 sec or less (age 7,4 ± 2,4, boy/girls – 7/6), without other signs of WPW syndrome. All CPVT pts had syncope (4,9 ± 3,7 per year in SPRI vs 2,6 ± 2,0 per year in pts with NPRI), 6 - aborted SD (all with SPRI). HR and CI were 56,3 ± 8,7 vs 78,1 ± 2,8 bpm and 1,69 ± 0,09 vs 1,4 2 ± 0,18 (p= 0,009) respectively SPRI vs NPRI. QTc < 350 ms and supraventricular tachycardia were detected only in pts with SPRI - 4 (30,8%) and 7 (53,8%) pts respectively. This ECG pattren no been desribed before but we noticed the same pattern in some publication (D.Reid 1975, S. Eisenberg 1995 and some other) that allow for us decide that SPRI and CPVT is a more freguent association that it was concidered before. Combination of the CPVT and SPRI is the new specific patterns or original clinico-electrocardiographic syndrome with high risk of syncope and sudden death in children.

Children and young patients with epilepsy or uncertain syncope with bradycardia and SPRI need in exclusion of CPVT by HM.

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Intrahospital and late outcomes a unique centre of treatment with different kinds of drug eluting stents, in patients with "Off Label" coronary angioplasty indication.

F. F.O. Fernando Fabian Ordonez[1], **C.A.I. Carlos Alejandro Alvarez[2]**, A.C. Alberto Cristino[3], C.A.I. Carlos Alvarez Iorio[4]. *[1]Hospital Privado del Sur-Bahia Blanca-Argentina [2]Hospital Privado del Sur-Bahia Blanca-Argentina [3]Hospital Privado del Sur-Bahia Blanca-Argentina [4]Hospital Privado del Sur-Bahia Blanca-Argentina*

Basis In coronary angioplasty with "On Label" indication, the drug eluting stents (Cypher, Taxus y Endeavor) have proved to reduce, dramatically, the major events at the expense of a significant reduction of revascularization of the responsible lesion. Its prescription is arguable, and its role is not exactly known yet, in the "Off Label" prescription, even less known when other different kinds of platforms and drugs are used, as it happens in our real life. **Objectives** To analyze intrahospital results, and in the later follow-up, of a population of patients with "Off. Label" indication of coronary angioplasty, treated with different kinds of drug eluting stents. **Material and methods** 255 consecutive patients were retrospectively analyzed (from 31–5–03 to 28–02–07), average age: 64 (37–89), male: 192 (75,3%), diabetic: 59 (23,1%), myocardial infarct antecedents: 74 (29%), of coronary angioplasty: 48 (18,8%), coronary surgery: 15 (5,9%), left main : 11 (4,3%), left anterior descending: 151 (59,2%), unstable stabilized angina: 239 (93,7%), plaque type B2: 55 (18,2%), type C: 241 (79%), ostial lesions: 19 (7,5%), total occlusion: 25 (9,8%), bifurcation: 11 (4,3%), restenosis intrastent bare: 42 (16,5%), restenosis intrastent with drug elution: 26 (10,2%), average vessels diameter: 2,9mm (2.25 a 4.0), long lesions: 25mm (10–48mm). 330 stents were placed (1,2 stents/ patient). Average stent diameter : 2.9mm, average stent length: 27,6mm (from 12 to 33mm). Apolo: 6 (1,8%), Axxion: 3 (0,9%), Costar: 25 (7,5%), Endeavor: 96(29%), Firebird: 29 (8,7%), Cypher: 52 (15,7%), Taxus:118 (35,7%), Xience: 1 (0,3%). **Results** Success of the procedure: 254 patients (99,6%), myocardial infarction (MI): 1 (0,4%), follow-up: 255 patients/259 patients (98,5%), average: 19 months (6–45 months), general death: 6 (2,35%), cardiac death: 1 (0,4%), revascularization of the treated lesion: 30 (11,8%), survival free of cardiac death and infarct: 99,3%, survival free of major events (MI, death, revascularization of responsible lesion): 87,5%, late thrombosis: 3 (1,1%), definite: 2, probable: 1. **Conclusions** Coronary angioplasty, with the implantation of different kinds of drug eluting stents was effective in reducing the rate of revascularization of the responsible lesion, in patients with high restenosis risk, without significant increase of death or myocardial infarct.

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Intrahospital and long term clinic outcomes of treatment with drug eluting stent, in small vessel with "Off Label" coronary angioplasty indication.

F. F.O. Fernando Fabian Ordonez[1], **C.A.A. Carlos Alejandro Alvarez[2]**, A.C. Alberto Cristino[3], C.A.I. Carlos Alvarez Iorio[4]. *[1]Hospital Privado del Sur-Bahia Blanca-Argentina [2]Hospital Privado del Sur-Bahia Blanca-Argentina [3]Hospital Privado del Sur-Bahia Blanca-Argentina [4]Hospital Privado del Sur-Bahia Blanca-Argentina*

Objective To evaluate drug eluting stent (DES) effectiveness and safety in small vessel (2,25 – 2,75) angioplasty (A) with indication "off label". **Material and methods** 117 consecutive patients (pts) were analysed restrospectively (07–07–03–28–2–07) average age 66 (40–88), male 87 (74.4%) hypertense 47 (40.27%) diabetic 28 (23.9%), previous infarct 31 (26.5%), (A) 22 (18.8%) 137 vessels, left anterior descending 84 (71.8%), unstable stabilised angina 109 (93.2%), plaques B2 35 (23.6%), C 108 (72.9%), ostial lesion 8 (6.8%), total occlusion 17 (14.5%), bifurcation 6 (5.1%), bare stent restenosis 16 (13.7%), drug stent restenosis 14 (12%), long lesions 10–49 mm. (average 25 mm), length stent 12–33 mm (27.6 mm.). 160 stents were implanted (1,3 st./ 1 pt.), Apolo 5 (3.1%), Costar 16 (10%), Endeavor 59 (36.8%), Firebird 17 (10.6%), Cypher 24 (15%), Taxus 39 (24.3%). Follow-up of 115/117 pts. (98.2%) between 6 and 43 months (21 month). **Results** No intrahospital complications. Follow-up: cardiac death 0, extra-cardiac death 3 (2.6%) myocardial infarction (MI) 1 (0.8%), responsible lesion revascularization (TRL) 18 (15.6%), major events (MI, death, TRL. 19%), later thrombosis 1 (0.8%) Survival free of MI and death 96.6%, survival free of MI and cardiac death 99.2%, survival free of major events 81%, symptomatic because of angina 3 (2.6%), asymptomatic without events 78.3%. **Conclusions** In our experience, DES implantation in small coronary vessels, in patients with angioplasty "off label" indication resulted safe, but with a relative high rate of major cardiac events at the expense of an increased incidence of TRL. This would seem to confirm the tendency that although DES with "on label" indication reduces the restenosis risk significantly, the illness of small vessels in patients with high restenosis risk is a major cause of DES failure.

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Hemodynamic Behavior In Different Periods Of Day In A Physical Exercise Program Subjects

T. Dipp[1], D.C. Bündchen[1], T.F. Panigas[1], K.C. Belli[1], C.F. Panigas[1], C.M. Richter[1], A.M.R. Pereira[1], J.Z. Klafke[1], R. Killing[1], P.R.N. Viecili[1–2]. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background: Circadian rhythms describe biological phenomena that oscillate during approximately 24 hours. These rhythms include blood pressure (BP), body temperature, hormone levels, the number of immune cells in blood, and the sleep-wake cycle. There are evidences that cardiovascular events, mainly sudden death and acute myocardial infarction, occur more frequently in the early morning than at other times of day, there may also be interseasonal variation in the incidence of these conditions; the circadian variation in vascular events corresponds to blood pressure (BP) and heart rate (HR) variability. Some professionals of health do not precongnize exercise in the first hour of morning because this biological variation. **Objective:** To verify the hemodynamic behavior in different periods of day in subjects submitted to an exercise program (EP). **Methods:** 46 sedentary subjects were studied divided in two groups: morning group (MG) with 23 subjects, seven men and 16 women (61.3±4.7 years) performed exercise program until 9 a.m. and the evening group (EG) with 23 subjects, seven men and 16 women (54±8 years) after 5 p.m. They were assessed at the treadmill test with Bruce protocol to obtain indirectly the maximum consumption of oxygen (VO2 mαx). EP consisted in three stages: stretching, aerobic and resistance exercise, 3x/week, for 3 months. It was measured initial systolic and diastolic blood pressure (iSBP and iDBP), peak of exercise (pSBP and pDBP) and recovery time (rSBP and rDBP). HR was measured at initial (iHR), peak of exercise (pHR) and recovery time (rHR) and VO2max before and after exercise program. Data are expressed as mean±SD, test "t". A P value less than 0.05 was regarded as statistically significant. **Results:** the iSBP and iDBP in EG showed values slightly higher than MG (SBP: 123.5±18.5 x 121.4±16 mmHg; $p<0.03$; 77.8±11 x 75.6±10 mmHg; $p<0,008$), the pSBP was higher in MG than EG (137.8±18.3 x 129.7±21 mmHg; $p<0.001$), there was no difference in rSBP in both groups (121±14 x 121.5±19 mmHg). The pDBP remain the same in both groups (78.3±10 x 78.6±10 mmHg). rDBP in MG was lower than EV (77.5±10 x 75.8±8,5 mmHg; $p<0.002$). Significant difference were also found in iHR (MG:80.7±11 x EV: 78±12 bpm; $p<0.005$). In pHR and rHR there were no significant differences. The results obtained from the analysis of VO2max showed similar values in both groups before and after study (23±9 x 25±8 ml.kg.min; 30.7±8 x 34.2±7ml.kg.min) MG and EV respectively. **Conclusion:** Despite of hemodynamic variations in both periods of day, blood pressure and heart rate had physiological behavior during the exercise program.

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Common Mental Disorders and Hypertension in adolescents – Rio de Janeiro, Brazil

M.C. K. Maria Cristina Kuschnir[1–2], G. M. Gulnar Mendonça[2]. *[1]National Institute of Cardiology, Rio de Janeiro State University, Brazil [2]Rio de Janeiro State University, Brazil*

Introduction: Primary hypertension is a prevalent chronic condition in adolescence. It may influence present and future life conditions and bring some limitation, such as the change of habits. Therefore, chronic disease is frequently accompanied by emotional disorders. **Objective:** The aim of this study was to evaluate the association between common mental disorders (CMD) and hypertension between adolescents in Rio de Janeiro, Brazil **Methods:** We conducted an outpatient based case-control study with adolescents aged 12–18 yrs who attended a specialized university service. Measurement of the levels of arterial pressure followed the recommendation of the National High Blood Pressure Education Program Working Group on Hypertension Control in Children and Adolescents. For classification of being overweight and obesity, we used the cut-off points proposed by the International Obesity Task Force (IOTF).For evaluation of the degree of common mental disorder (CMD), we utilized the General Health Questionnaire - GHQ-12. Among the variables that could be indicators of socio-economic level, the study collected information referring to monthly income and the number of persons per domicile. The information referring to schooling and work of the adolescents was gathered from the adolescents themselves. The data referring to family income, history of primary arterial hypertension in parents were obtained from the adolescents' mothers. For evaluation of the difference between the averages of the continuous variables variance analysis was performed. For analysis of the categorical variables, the Chi-squared test was utilized. The estimate of risk was approximated by the odds ratios, with a confidence interval of 95%, via non-conditional logistic regression. The confounding variables that proved to be significant, $p > 0.25$, were selected for the multivariate model. **Results:** We evaluated 91 cases and 182 controls. A strong association between the presence of CMD and primary hypertension were found in male adolescents, even after adjusting for obesity and family history of the condition (OR= 3,78; 95%CI: 1,28 – 11,17). This association was not observed for girls. **Conclusion:** The results show the need to special attention to the emotional aspects associated with hypertension in adolescence, especially as male adolescents are concerned. The results also point out that gender should be taken into account when analyzing factors associated with hypertension in adolescents.

DISTRIBUITION OF CASES AND CONTROLS ACCORDING TO POSITIVE GHQ-12 AND OR OF HIGH ARTERIAL BLOOD PRESSURE AMONG MALES

Factors selected	OR	CI95%
crude	2.19	1.07–4.47
Adjusted by income and schooling of the adolescent	2.31	1.01–5.36
Adjusted by income, schooling of tne adolescent and obesity	3.03	1.15–7.95
Adjusted by income, schooling of the adolescent, obesity and family history of hypertension	3.78	1.28–9.17

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Prognostic significance of microalbuminuria in non-diabetic patients with ST-segment elevation myocardial infarction.

A. Dominguez-Rodriguez[1], S Samimi-Fard[1], MJ Garcia-Gonzalez[1], G Yanes-Bowden[1], A Sanchez Grande-Flecha[1], I Hernandez-Baldomero[1], P Abreu-Gonzalez[2], F Marrero-Rodriguez[1], JC Kaski[3]. *[1]Department of Cardiology (Coronary Care Unit), University Hospital of Canarias, Tenerife, Spain [2]Department of Physiology, University of La Laguna, School of Medicine, Tenerife, Spain [3]Head, Department of Cardiological Sciences, St. George's Hospital Medical School, London, United Kingdom.*

Background: The microalbuminuria has been proposed as an independent prognostic factor of cardiovascular morbidity and mortality in patients with diabetes mellitus and in non-diabetic

subjects. Recent reports, which included both diabetics and non-diabetics, have shown that increased urinary protein excretion appears to be an early and proportional response to acute myocardial infarction and it yields prognostic information about in-hospital mortality additional to that provided by clinical or echocardiographic evaluation of left ventricular performance. **Objectives:** The aim of this study was to examine whether the presence of microalbuminuria (20–200 μg/min) can predict in-hospital morbidity and mortality in non-diabetic patients with ST-segment elevation myocardial infarction (STEMI). **Methods:** One hundred thirty five (79 men and 56 women) non-diabetic patients with STEMI were studied prospectively. The composite of in-hospital death and heart failure represented the study end-point between microalbuminuric and normoalbuminuric patients. Heart failure was defined as Killip class >1. Multivariable logistic regression analysis was performed to identify independent variables related to in-hospital events. **Results:** A significant proportion of patients (38.5%) had microalbuminuria. Patients with microalbuminuria had a higher mortality rate in comparison with normoalbuminuric patients (9.6% vs. 2.4%, $p < 0.01$). In addition, the combined end-point event rate was significantly higher in patients with microalbuminuria (34.6% vs.15.6%, $p < 0.01$). In multiple logistic regression analysis, microalbuminuria ($p < 0.001$) and ejection fraction ($p < 0.01$) were independently related to the occurrence of major in-hospital events. **Conclusions:** Our study showed that the microalbuminuria is a significant predictor of in-hospital adverse events in non-diabetic patients with STEMI.

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Correlation Between Oxidative Stress, Endothelial Injury And Coagulation Activation In Advanced Chronic Heart Failure

O. Korzh[1], S. Krasnokutskiy[1]. [1]*Kharkov Medical Academy of Postgraduate Education*

The aim of the present study was to establish whether enhanced oxidative stress (OS), involving endothelial injury, activation of coagulation, and inflammatory reaction, could be implicated in chronic heart failure (CHF) patients. **Methods:** 112 patients with CHF (NYHA class III-IV) due to coronary heart disease and 55 age- and sex-matched healthy controls were included. Markers of OS, endothelial injury, coagulation, and cytokines, were measured in the plasma of CHF patients and of healthy controls by ELISA methods. Remodeling of the carotid arteries was assessed by measuring the intima-media thickness (IMT) as a surrogate of atherosclerotic disease in all groups. **Results:** Markers of OS, endothelial injury, and extrinsic coagulation pathway activation and IMT values were significantly elevated in CHF patients. The von Willebrand factor antigen (vWF:Ag) levels were more increased in the patients with CHF than in control group. Furthermore, the plasma levels of tumour necrosis factor alpha, monocyte chemo-attractant protein 1, and macrophage inflammatory protein 1 beta were significantly higher in patients with CHF when compared with the controls. The IMT was strongly and directly correlated with Cu/Zn superoxide dismutase. Both IMT and Cu/Zn superoxide dismutase were positively correlated with age, thrombomodulin, vWF:Ag, tissue factor, tissue factor pathway inhibitor, macrophage inflammatory protein 1 beta, and tumour necrosis factor alpha levels. Multivariate analysis identified vWF:Ag as the only independent variable significantly associated with an increased IMT. **Conclusions:** The present study suggests that enhanced OS, involved pro-atherogenic cytokine and chemokines levels, endothelial injury, and coagulation activation may constitute a pathway for progression of CHF. The significant, independent association between IMT and vWF:Ag should be assessed in future studies to determine whether vWF:Ag elevation is causative or a by-product of the increased IMT.

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The Effect of Ambient Temperature Variability On Blood Pressure: Two Years of Observation

T.F. Panigas[1], T. Dipp[1], C.M. Richter[1], D.C. Bündchen[1], J.L.C. Pippi[1], C.F. Panigas[1], J.Z. Klafke[1], K.C. Belli[1], P.R.N. Viecili[1–2]. [1]*Cruz Alta Heart Institute - ICCA* [2]*Cruz Alta University - UNICRUZ*

Background: The effect of ambient temperature on cardiovascular disease has previously been studied. However, the effects of climate on blood pressure (BP) regulation, specifically, the role of temperature on BP variability is unclear. **Methods:** We investigated, prospectively, the effect of temperature variability on 48 subjects, 61 ± 12 years old, with optimal BP or stage 1 hypertension, in south of Brazil, where there are four well defined seasons, and who had participated in an aerobic exercise training program during the years 2004 and 2005. The systolic (SBP) and diastolic BP (DBP) were measured at rest, before each exercise session, 3 days/week through the 24-months. Climatic data were obtained from local meteorological center. The minimal, medium and maximal temperatures were analyzed comparing each month, each year and the complete two years of study with the BP variability. Data were expressed as mean ± SD. Student t test, linear regression and statistical significance $p < 0.05$ were used. **Results:** All results are on the table. The BP was more elevated in 2004 than compared to 2005 (SBP: + 2.9 mmHg; DBP: + 2.8 mmHg). On the other hand, the minimal temperature in 2004 was colder than 2005 in 0.90C. However, there was a weak inverse correlation (R -0.4) along the months, on different years and the total two years study period. **Conclusions:** Although 2004 was colder than 2003, and the subjects of study were more hypertensive than to 2005 ones, there was litle effect among the ambient temperature variability on PB during two years of observation.

TEMPERATURE°C	2004	2005	DIFFERENCE	P VALUE
Colder day	- 2	- 1.2	- 0.8	
Hotter day	35	37.6	2.6	
Number/days ≤ 10°	108	86	22	0.01(X^2)
Number/days ≥ 30°	66	72	6	0.4
Number/months/colder	4	3	1	0.5
Minimal: M ± SD	11.9 ± 5	12.8 ± 4.7	0.9	0.001
Medial: M ± SD	18.1 ± 5	18.4 ± 5	0.3	0.09
Maximal: M ± SD	24.7 ± 5.7	24.1 ± 6.6	0.6	0.04
BLOOD PRESSURE				
Systolic – mmHg: M ± SD	125.1 ± 6.6	122.2 ± 6.6	2.9	0.0001
Diastolic - mmHg: M ± SD	78.4 ± 3.6	75.6 ± 4.1	2.8	0.0001
LINEAR REGRESSION			2004–2005	
Minimal x SBP	- 0.46	- 0.37	- 0.42	
Minimal x DBP	- 0.45	- 0.41	- 0.43	
Medial X SBP	- 0.52	- 0.45	- 0.48	
Medial X DBP	- 0.48	- 0.42	- 0.43	
Maximal X SBP	- 0.45	- 0.43	- 0.42	
Maximal X DBP	- 0.39	- 0.36	- 0.34	

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Analysis of Cardiorespiratory Fitness in a Brazilian Specific Population

K. C. Belli[1], T. Dipp[1], T. F. Panigas[1], C. F. Panigas[1], C. M. Richter[1], D. C. Bündchen[1], J.Z. Klafke[1], P.R.N. Viecili[1–2]. [1]*Cruz Alta Heart Institute - ICCA* [2]*Cruz Alta University - UNICRUZ*

Background: The cardiorespiratory fitness (CRF) is a component of physical ability and reflects the individual capacity to perform dynamic physical exercises which involve large muscles group. It reflects the functional capacity of cardiovascular system during exercise. The analysis of CRF helps to identify signs that can precede the appearance of illnesses, these signs when modified are competent to reduce or return the pathological course. The identification of CRF values are necessary to prescribe and analyze training effects. The most popular classification for CRF are: Cooper and American Heart Association (AHA) tables; however, there are a few studies that confirm the behavior of cardiorespiratory fitness of Brazilian population. **Objective:** Analyze and compare the CRF categories in Brazilian specific population with Cooper and AHA tables. **Methods:** Fron database 954 subjects were analyzed, in a consecutive and retrospective way, between 2001 and 2003, being 553 female (F) and 401 male (M). The sample comprises 35 cities in the South of Brazil. The values of maximum oxygen consumption (VO_2) on peak of treadmill test were achieved using Bruce protocol, being categorized as gender, age and VO2, in accordance to Cooper and AHA tables. All data are reported as mean±SD. Significance was accepted at P less than 0.05. **Results:** History of diabetes Mellitus was reported in 7% of subjects, smoking in 12%, high cholesterol in 31%, higt triglycerides in 19%, hypertension in 42%, sedentary lifestyle in 68% and stress in 77%. In the table below, are express the values related on age and VO_2max.. Both groups were analyzed in two references tables. The subgroup of female sample (20 -29 years) showed a difference in classification between Cooper and AHA tables. However, in other groups the classification was similar. **Conclusion:** The Brazilian specific population was classified in regular cardiorespiratory fitness, according to both tables of classification, in spite of divergence in a limited number of persons.

GROUP	N	AGE (YEARS)	VO_2 ml(kg.min)$^{-1}$	COOPER	AHA
Female		**Means ± SD**	**Means ± SD**		
13–19	4	17± 2	29.75 ± 10.8	BAD	
20–29	16	25± 3	33.3 ± 9.4	GOOD	REGULAR
30–39	57	35± 3	27.97 ± 8.5	REGULAR	REGULAR
40–49	109	45± 3	27.48 ± 7.8	REGULAR	REGULAR
50–59	167	54± 3	25.52 ± 7.4	REGULAR	REGULAR
60–69	114	65± 3	21.8 ± 6.5	REGULAR	REGULAR
60 ou +	200	69± 6	19.25 ± 7.11	BAD	
Male					
13–19	2	17± 1	37.11 ± 15.4	BAD	
20–29	12	27± 3	38.74 ± 17.7	REGULAR	REGULAR
30–39	44	36± 2	38.43 ± 8.8	REGULAR	REGULAR
40–49	80	45± 3	34.45 ± 9.3	REGULAR	REGULAR
50–59	96	55± 3	31.63 ± 8.7	REGULAR	REGULAR
60–69	96	64± 3	26.67 ± 8.4	REGULAR	REGULAR
60 ou +	167	69 ± 7	24.79 ± 8.7	BAD	

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LEFT ATRIAL DOPPLER TISSUE IMAGING: CHANGES IN PATIENTS WITH CORONARY ARTERY DISEASE.

C. Killinger[1], **G. Cabrejos**[1], M. Del Campo[1], M. Sun[1], D. Lozano[1], S. Ferradas[1], R. Rosental[1], G.. Mohamed[1], S. Zymerman[1], E. Beck[1]. [1]*DURAND HOSPITAL - BUENOS AIRES*

Objectives 1) To assess whether Doppler tissue imaging (DTI) velocities in the left atrium (LA) reflect the changes in LV systolic and diastolic function in patients (p) with coronary artery disease and 2) Compare DTI of the LA with hemodynamic parameters. **Background:** DTI of the mitral annulus discriminates different types of LV diastolic dysfunction, and in healthy subjects correlates with atrial septal DTI. The correlation between atrial DTI and LV end-diastolic pressure measured by angiography (LVEDP) has not been investigated thoroughly. **Methods:** Sixty-one patients (p) were studied with Doppler echocardiography, group 1 (G1) comprised 48 men, age: 52 years, (47 p. underwent hemodynamic assessment one hour later), and group 2 comprised 29 normal subjects (G2). The following parameters were measured: LV diameters and ejection fraction (EF), LA areas and volumes, mitral flow Doppler, mitral annulus DTI and atrial septal DTI (Sts, Ets, Ats, Ets/Ats and Ats TVI). The LVEDP was correlated with E/E' and with a new ratio, mitral E /DTI septal E (E/Ets). E/E'was correlated with atrial septal DTI. Statistical analysis: values are expressed as medians; the Student t †Test or "Û Mann-Whitney test were used and p values <0.05 were considered significant. **Results:** In group G1, no correlation was found between LVEDP (15mmHg) and E/E' nor between LVEDP and E/Ets. In contrast, a correlation was found between E/E' and E/Ets ($p<0.0001$) and between E/E' and Ets/Ats ($p<0.0001$). There was no correlation between Sts and EF or age. Coronary lesions were: 3 vessel disease in 17p, 2 vessel disease in 15 p and 1 vessel disease in 9p, the remaining values were NS. G1-G2 Correlation: **Conclusions:** 1 DTI atrial E wave was an adequate marker for myocardial relaxation abnormalities in p with coronary artery disease. 2. The new E/Ets ratio

could discriminate patients better than E/E' in the population with disease. 3. DTI Sts did not reflect changes in systolic function.

	Ets (m/s)	Ats (m/s)	Ets/Ats	Ats TVI (cm)	E/E'	E/Ets
G 1	0.09	0.13	0.75	1.11	5.31	7.1
G 2	0.17	0.12	1.4	1.10	3.42	4.4
P	<0.0001†	NS †	<0.0001"Û	NS"Ü	<0.0001 †	<0.0001"Û

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Reduction Of Exaggerated Exercise Blood Pressure Levels In Normotensive Individuals After Physical Exercise Program.

C.M. Richter[1], C.F. Panigas[1], D.C. Bündchen[1], K.C. Belli[1], T. Dipp[1], T.F. Panigas[1], J.L.C. Pippi[1], J.Z. Klafke[1], R.M.F. Sampedro[1], P.R.N. Viecili[1–2]. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background: Persons with normal blood pressure (BP) may have an exaggerated increase in blood pressure during the treadmill test. The phenomenon is called hyperactive blood pressure (HBP). Regular physical exercise program (PEP) had importance to treatment in hypertensive individuals; however, there is a few data about the exercise effects on HBP. **Objective:** We examined the PEP effects on HBP individuals. **Method:** 24 sedentary men with normal BP at rest, but with HBP at treadmill test, were randomly assigned to: 1-Experimental Group (EG), 10 individuals (45 ± 10 years) that performed a PEP, by 40 minutes aerobic, 60–70 % of the VO2 max, resistance exercise, three times/week, during two months; and 2-Control Group (CG), 14 male (48 ± 8 years) who did not participate to PEP. All subjects were submitted to treadmill test, Bruce protocol, before and after program. It was considered: smoking, sedentary live, stress, family history for hypertension (FH-H), and diabetes mellitus (DM) history. Weight, height, body surface index (BSI), abdominal circumference (AC); were measured. Systolic (SBP) and diastolic blood pressure (DBP) levels, heart rate (HR), pre, at peak and post treadmill test; and VO2mαx were analyzed. The data were expressed by mean ± DP; test x^2 and test T de Stunted were used, and $p<0.05$ was considered significant. **Results:** The smokers had similar (EG: 25% x CG: 21%). The majority was sedentary (EG: 75% x CG:86%). The EG was less stressed (37.5% x 71%; $p < 0.001$). The EG had less FH-H (25 % x 43 %; $p<0.01$). There was no DM in both groups. The weight, height, BSI and AC were similar in both groups. The hemodynamics data is shown in the table. The SBP, DBP pre and peak decreased significantly after the PEP in EG and increased in CG. The VO2max., obviously, increased only in the EG (Pre x post-PEP: 37 ± 7.5 x 41.4 ± 5.5 ml/kg/min; $p<0.01$). **Conclusion:** Regular physical exercise program normalized the exaggerated increase in blood pressure during the treadmill test in non hypertensive subjects.

mmHg \ Treadmill Test			Before	After	?%	Value of P
	SBP	EG	125±4.6	118.8±5.8	-5	0.01
		CG	121±8	124±5	+2	ns
		EG x CG	ns	ns	—-	—-
Pre	DBP	EG	81.9±2.6	78.1±3.7	-4.6	0.01
		CG	73±6	79±6	+8	0.04
		EG x CG	0.0001	ns	—-	—-
	SBP	EG	208.3±7.6	182.5±5	-12.4	0.001
		CG	216±11	223±10	+3	0.04
		EG x CG	ns	<0.00007	—-	—-
Peak	DBP	EG	96.7±11.5	82.5 ±5	-14.7	0.03
		CG	107±9	116±9	+8	0.03
		EG x CG	0.02	<0.00001	—-	—-
	SBP	EG	148.8±16.2	141.9±11.6	-4.6	0.03
		CG	210±16	222±11	+5	0.03
		EG x CG	0.008	<0.00003	—-	—-
Post	DBP	EG	83.1±4.6	81.3±3.5	-2.2	ns
		CG	107±9	115±9	+7	0.05
		EG x CG	<0.00005	<0.00005	—-	—-

P616

Alzheimer's Type Dementia Versus Vascular Dementia in Hypertensive Patients

A. Vicario[1], CD Martinez[1], GH Cerezo[2]. *[1]HOSPITAL ESPANOL BS AS [2]HOSPITAL AERONAUTICO CENTRAL*

BACKGROUND: More than half of the dementias syndromes have brain vascular disease. The cerebral vascular damage in elderly people due to hypertension is associated with higher risk of cognitive deficit or dementia with vascular compromise. **Objective:** To learn about of the prevalence of the Alzheimer type (AD) and vascular type (VD) dementia in a hypertensive patients group. **Participants and Methods:** Of a total 202 hypertensive patients (75.2±5.8 years), both female and male, a sub-group of 32 patients with Mini-Mental State Examination (MMSE) 24 or lower points was analyzed, in order to confirm the diagnosis of dementia. Patients presenting stroke, by-pass surgery, diabetes and atrial fibrillation were excluded. All of them were evaluated using a battery of neurocognitive test, Diagnostic of Statistical Manual of Mental Disorders criteria (DSM-IV), Hachinski score (cut-off >7 points) and neuro imaging studies. **Results:** The average age was 81.5±2.7 years (range 69–88), 68.7% were female. The average of MMSE score was 19.4±2.1 points. Diagnosis of dementia was confirmed in 18 patients (prevalence in this group 8.9%) and Global Deterioration Scale (GDS) was 2/3 in all cases. The Alzheimer type dementia appeared more frequently than vascular dementia (13 vs. 5 cases). The MMSE score in Alzheimer type dementia was lower than Vascular Dementia (20.5±4.2 point's vs 24 points). The cognitive domains most affected in Alzheimer type dementia were orientation to time and place, attention, planning and visuospatial function; mean while in vascular dementia it was memory. Language test was preserved in both types. The clock draw test happened to be the most sensitive method, capable to difference both forms of dementia. The brain imaging evaluation assessed two types of structural changes: white matter hyperintensities and atrophy (in some cases the atrophy predominated in the frontal lobe) but these findings couldn't show any difference in both types of dementia. Depression was more frequently associated with vascular dementia (60% vs 13%). Blood pressure difference were observed between patients with AD and VD (157.5+/-28.2 vs 128.2+/-21.2, $p<0.01$) but not in patient without dementia. **Conclusions:** The Alzheimer type dementia was more prevalente than vascular form within this group of hypertensive patients. The higher risk of Alzheimer type dementia with vascular component might de attributed in part to other dementia risk factors that were concurrently present in these patients. Then hard treatment of hypertension may be preventing Alzheimer type dementia too. Finally, the clock draw test, with easy and fast administration, happened to be sensitive in the differential diagnosis between vascular or Alzheimer type dementia.

P617

SEVERE AORTIC STENOSIS AND NONCARDIAC SURGERY IN THE ELDERLY POPULATION.

D. De Mollein[1], C. Dominguez[1], G. Lopez Soutric[1], S. Robert[1], S. Berensztein[1], M. Vazquez Blanco[1], J. Lerman[1]. *[1]HOSPITAL DE CLINICAS JOSE DE SAN MARTIN*

Introduction: Aortic Stenosis (AS) is the most common valvular heart disease in the elderly. When it is severe, it constitutes an important risk factor for perioperative cardiac complications in noncardiac surgery. **Purpose:** To compare the inhospital perioperatory mortality in noncardiac surgery of elderly patient with severe AS with that of elderly patients without AS. **Methods:** It is a retrospective case-control study. All patients older than 65 years of age with Doppler ultrasound diagnosis of severe AS (aortic valvular area < 0.65 cm^2 and/or mean gradient > 40 mmHg) who underwent noncardiac surgery between January 1995 and December 2006 were included. Controls (C) were randomly chosen from all patients older than 65 years of age without Doppler ultrasound diagnosis of AS, undergoing noncardiac surgery during the same period. **Results:** We included 57 patients with severe AS and 56 controls. There were no statistically significant differences in the baseline characteristics of the two groups. The mean age in the AS group was 77.3 years and 75.9 years in the C group. The mean gradient was 51.2 mmHg and the mean aortic area was 0.62 cm^2 in the AS group. The type of surgical procedures in the AS group and C group were: orthopedic: 42%, 37.5%; intraabdominal: 19.3%, 30.4%; thoracic: 12.3%, 7.3%; vascular: 8.8%, 12.5%; others: 14%, 12.5%. The type of anesthesia was: general 77.2%, 66.1%; spinal: 22.9%, 33.9%, respectively. There were no statistically significant differences either in the type of surgical procedures or the type of anesthesia. Total mortality was 8.8% in the AS group and 7.1% in the C group. Cardiovascular causes accounted for 3.5% in the former and 3.6% in the latter. **Conclusions:** The current study showed no differences in total or cardiac mortality in the patients with severe AS compared with matched controls. Therefore, in this group of elderly patients with severe AS, noncardiac surgical procedures can be performed with a reasonable risk.

P618

RELATION BETWEEN DIABETES, HEART RATE VARIABILITY AND LEFT VENTRICULAR FUNCTION IN PATIENTS AFTER MYOCARDIAL INFARCTION

V. Stoickov[1], S. Ilic, M. Deljanin Ilic. *[1]THE INSTITUTE FOR CARDIOVASCULAR DISEASES "NIŠKA BANJA" [2]THE INSTITUTE FOR CARDIOVASCULAR DISEASES "NIŠKA BANJA" [3]THE INSTITUTE FOR CARDIOVASCULAR DISEASES "NIŠKA BANJA"*

Background: Coronary disease in diabetic patients has speed up, progressive course because of the synergic work of hyperglycemia and other risk factors of the coronary disease, as well as dyslipidemia, hypertension and obesity. Diabetic autonomic neuropathy which first involves vagal nerves contributes to the bad prognosis of coronary patients with diabetes. The best marker of the state of activity of the autonomic nervous system is the heart rate variability (HRV), which is a predictor of cardiac mortality. Objective: The aim of this study was to establish the influence of diabetes mellitus on the left ventricular function and parameters of HRV as well as the relation of the left ventricle function and parameters of HRV in patients after myocardial infarction (MI) and diabetes. **Methods:** We studied 169 patients after MI. Forty-five patients were with diabetes mellitus, and 124 were without diabetes. Average age of patients was 57.6 years. Besides clinical examination and laboratory analysis, standard ECG, exercise test on treadmill according to Bruce protocol, 24 hour holter monitoring and echocardiographic examination were performed in each patient. From the holter record, the analysis of HRV was performed by software. Four parameters of the "time domain" HRV were assessed: SDNN, SDANN, RMS-SD and NN>50 ms. **Results:** Patients after MI and diabetes had significantly lower values of followed parameters of HRV in comparison to those without diabetes (88.8±30.7 vs 102.4±31.1 ms; $p<0.025$ for SDNN; 28.9±12.1 vs 34.2±12.9 ms; $p<0.02$ for RMS-SD; 74.3±23.5 vs 89.2±30.2 ms; $p<0.05$ for SDANN and 7.4±8.3 vs 11.4±9.5 ms; $p<0.05$ for NN>50 ms). Patients with diabetes also had significantly lower values of LVEF (48.7±8.7 vs 53.1±11.5%; $p<0.05$), and significantly higher values LVESd (39.8±4.5 vs 36.8±6.3 mm; $p<0.025$), as well as higher degree of left ventricle diastolic dysfunction, in comparison to those without diabetes ($p<0.02$ for ratio E/A and $p<0.005$ for Dt). The study showed that there is a significant positive correlation of values SDNN and SDANN with LVEF ($p<0.01$ for SDNN and $p<0.01$ for SDANN), and a significantly negative correlation with LVESd ($p<0.05$ for SDNN and $p<0.05$ for SDANN), while with LVEDd correlation has not reached the level of significance, in patients after MI and diabetes. Values of parameters RMS-SD and NN>50 ms did not correlate significantly with LVEF or inside dimensions of the left ventricle in patients after MI and diabetes. **Conclusion:** The study demonstrated that patients after MI and diabetes have significantly lower values of HRV parameters, significantly lower values of LVEF and significantly higher values of LVESd, as well as higher degree of left ventricle diastolic dysfunction, in comparison to those without diabetes. The study showed that there is significantly positive correlation of SDNN and SDANN values with LVEF and significantly negative correlation with LVESd, in patients after MI and diabetes.

t5P619

STUDY OF THE QUALITY OF LIFE (QOL) OF CORONARY PATIENTS, TREATIES WITH AND WITHOUT CARDIAC REHABILITATION (CR).

A. Gómez Monroy[1–2], A. Amarilla[3], R. Gonzalez[4], D. Marelli[1], C. Herrera[4], S. Macin[3], N. Mijailovsky[1]. *[1]Hospital San Juan de Dios La Plata Argentina [2]Cardiac Rehabilitation Center Asistecia Cardiológica Integral La Plata Argentina [3]Instituto de Cardiología de Corrientes Argentina [4]Instituto de Medicina Vascular Tucumán Argentina*

The improvement of the QOL is a fundamental objective in all therapeutic effort for chronic coronary disease, therefore when it is indicated a treatment is due to consider the best option to obtain it. **Objective:** to evaluate the QOL of chronic coronary patients (CP) in secondary prevention (SP), under conventional treatment, with and without CR. **Material and Method:** 256 CP in SP were recruited and were randomized into 2 groups (G) G1 without CR: n=108, 70 Masculine (M), Age 62,3 (±SD) 9.9 years, G2 with CR n=144, 100 (M) Age 62,9 (±SD) 9.9 years. The QOL Test of Velazco-Del Barrio examines 40 elements in 9 different areas of interest including: a) Perception of health, b) Rest and Dream, c) Emotional behaviour, d) Perception of future, e) Mobility, f) Social relations, g) Behaviour of alert, h) Communication and i) Leisure and work time. The self-answering questionnaire is based upon selection of response in a Likert scoring system. The scores are standardized from 40 – 200 point. The higher score indicates poorest QOL. We used the significant Test of T ($P < 0.05$). data expressed in average, SD, minimum and maximum. **Results:** All the patients of the G2 showed a smaller score in all the variables evaluated in the test of QOL with statistically significant differences. **Conclusion:** In our study, the CP in SP with CR program, reported significant better QOL than those who do not practice it.

	a	b	c	d	e	f	g	h	i	all
G 2	14.6	4.7	5.5	4.6	8.7	11.4	5.5	4.7	9.3	69.4
	3.9	1.4	1.7	2.1	3.0	3.2	2.1	2.0	3.0	14.4
	8	3	3	3	5	7	3	3	5	43
	29	11	12	15	21	25	12	13	18	116
G 1	21.6	8.1	9.1	8.9	13.4	19.4	8.4	8.5	13.2	111.1
	7.3	2.6	2.5	3.1	4.9	7.3	2.5	3.0	4.0	30.1
	10	3	3	3	5	7	3	3	5	60
	36	13	16	15	23	32	14	15	26	171
P <0.05	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

P620

Contribution of the aVL lead in the electrocardiographic distinction between AV Nodal Reentrant Tachycardia and AV Reentrant Tachycardia.

C. Hadid[1], D. Di Toro[1], C. Lopez[1], L. Vidal[1], C. Labadet[1]. *[1]HOSPITAL COSME ARGERICH. BUENOS AIRES, ARGENTINA.*

Background: Distinction between AV Reentrant Tachycardia (AVRT) and AV Nodal Reentrant Tachycardia (AVNRT) is sometimes difficult. We have previously shown the utility of the aVL lead in the electrocardiogram for the differential diagnosis between those two mechanisms. In our study the presence of a notch at the end of the QRS complex in aVL lead was associated to AVNRT. This finding had similar sensitivity and specificity than traditional ECG signs such as pseudo r' wave in V1 and pseudo S wave in inferior leads. However, whether knowing this new sign makes diagnosis easier to be made is unknown. **Objective:** To evaluate if the knowing of the notch in aVL lead helps physicians to improve diagnostic accuracy between AVRT and AVNRT. **Methods:** ECG-tracings with SVT were observed by medical doctors (MDs) before and after being trained for identification of the notch in aVL lead and its utility (sensitivity, specificity, positive and negative predictive value, positive and negative likelihood ratio). Patients with atrial tachycardia, bundle branch block during sinus rhythm, pre-excitation on 12 lead ECG and those with no diagnosis after electrophysiologic study were excluded. Diagnostic accuracy was compared between both observations of each physician and between different groups of doctors according to their area of work. Diagnostic accuracy was considered as percentage of correct answers. **Results:** A total of 26 physicians participated in the study. All MDs were blinded about the correct diagnosis. Eight of them (30.8%) were cardiologists (C), whereas 14 (53.8%) were residents on cardiology (R) and the remaining 4 (15.4%) worked in internal medicine (I). Diagnostic accuracy before and after the training was 55% and 60% respectively (relative percentage of increase 12%; $p = 0.02$). This improvement was seen among tracings with AVNRT (from 58% to 68%; $p < 0.01$), with no different accuracy in tracings with AVRT. Analysis according to the area of work showed that C had the best diagnostic accuracy (61%); followed by R (55%) and I (45%); $p = 0.03$. Improvement was greater for I (31%), than for R and C (10% and 5% respectively). **Conclusion:** Distinction between AVRT and AVNRT was improved by the knowing of the notch in aVL lead. This improvement was seen among tracings with AVNRT.

P621

CEREBROVASCULAR ACCIDENT PREVALENCE AND PREDICTORS IN MYOCARDIAL REVASCULARIZATION SURGERY

R. Marelli[1], **I Rifourcat[2]**, E Serrano[3], R Lolo[4], J Como Birche[5], C Salomón[6], L Ponce[7], M David[8], A Gomez Monroy[9], L Mancini[10]. *[1]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [2]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [3]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [4]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [5]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [6]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [7]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [8]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [9]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [10]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA*

Objective: to determine the cerebrovascular accident(CVA) prevalence and predictors in myocardial revascularization post-surgery (MRS). **Population and method:** since 2000 to 2007, 316 patients were included, 264 males (83.5%), aged 59.9 ± 10.4, with severe coronary artery disease and operated with MRS. Medical history, color doppler echocardiogram, color echo doppler of the neck vessels, and coronary angiographies were carried out for all patients. Surgery indication was made in patients with left coronary trunk stenosis ≥ 50%, stenosis in one or more main coronaries ≥ 70%, which necessarily involves the anterior descendent, inability to endure coronary angioplasty and evidence of myocardial ischemia or left ventricular dysfunction due to coronary stenosis. The CVA defined as any new neurological shortage, either temporal or permanent, focal or global. Cross-sectional and observational study: The chi square test was used for the comparative studies with nominal values using the Yates corrected value. Categorical variables are expressed in percentages. In the statistical comparisons, a value of 'p' was assigned by means of the Fisher exact method, 'p' < 0,05. Univariant and multivariant analysis made with Info EPI from OMS 5.01. **Results:** CVA prevalence: 3.17%. **Conclusions:** The CVA prevalence in MRS was of 3.17%. Predictors with statistical importance were: Age 65 or older, presence of high blood pressure, internal carotid stenosis higher or equal to 70%. Previous CVA background and 3 or more by-pass implants were highly significant. The ejection fraction lower or equal to 40% establishes a strong tendency in the multivariant analysis

UNIVARIANT ANALYSIS MULTIVARIANT ANALYSIS

Variable	OR	IC 95%	Chi2	p	OR	IC 95%	p
Age ≥ 65 years	2.63	1.73–7.76	4.62	0.04	2.01	1.05–8.45	0.06
Male	1.29	0.48–5.22	0.79	0.89	0.98	0.34–6.03	0.87
High blood pressure	4.25	1.78–6.52	5.07	0.02	3.77	1.64–7.22	0.04
Smoking habit	0.39	0.08–1.70	0.37	0.21	0.79	0.22–2.27	0.24
Hypercholesterolemia	1.08	0.21–7.50	1.26	0.76	1.22	0.36–8.31	0.87
Ejection fraction < 40%	3.07	0.75–12.62	2.81	0.13	3.45	0.91–12.24	0.08
CVA background	13.03	9.87–37.40	6.47	0.00	14.24	10.02–34.65	0.00
Previous atrial fibrillation	2.34	0.89–11.62	5.21	0.08	1.87	0.42–8.54	0.45
Carotid stenosis ≥ 70%	6.34	0.81–13.	50 5.41	0.05	7.32	1.31–16.34	0.04
By-pass implant ≥ 3 8.43	2.65–12.34	7.25	0.00	6.75	1.78–13.21	0.00	
Extracorporeal circulation surgery	2.03	0.24–44.45	0.62	0.69	1.78	0.22–37.	82 0.54

P623

Differences in cardiovascular mortality among men and women in the city of Rio de Janeiro, Brazil, during the 1998 and 2002 FIFA Soccer World Cup

F Braga[1], A Bahia[1], J Kezen[1], S Gomes Jr[1], L Armini[1], PP Sampaio[1], G Oliveira[1], AC Neno[1], J Mansur[1]. *[1]HOSPITAL SAMARITANO*

Background: The incidence of cardiovascular events is typically increased during major sports events that draw millions of viewers and can lead to great psychological stress, such as FIFA Soccer World Cup (FSWC). Such phenomenon has been observed and documented in American and European populations, but it has not been formally investigated in Brazil. **Objective:** To analyze mortality rates due to acute stroke (AS) and acute myocardial infarction (AMI) in the city of Rio de Janeiro during the 1998 and 2002 FSWC. **Material and methods:** We calculated the mortality rates due to AS and AMI during the 1998 and 2002 FIFA WCS by utilizing both the death certificate database from the Rio de Janeiro municipal health authority and the estimated populational data from Brazil's Ministry of Health. We then compared the death rates between 1998 and 2002 with those from the same period of the immediately preceding years (IPY). Data were stratified by gender and mortality rates were then calculated. **Results:** During the FSWC period of time, there were 153.19 deaths per million people due to AS and AMI compared with 148.08 deaths per million people in the IPY (p=0.32). Analysis by gender demonstrated, among men, 172.66 and 155.28 deaths/million during FWSC and the IPY, respectively (OR=1.12, 95%CI 1.01–1.22, p=0.026) and, among women, 135.97 and 141.71, deaths/million during FWSC and the IPY, respectively (p=0.39). The Chi-square for gender interaction effect was 4.69(p=0.032). **Conclusion:** In the city of Rio de Janeiro, Brazil, mortality rates among men, but not women, were increased during the FSWC of 1998 and 2002, in comparison with those from IPY, respectively

P624

FREQUENCY OF COMMON VARIANTS OF ABCB1, CYP3A4 AND CYP3A5 GENES IN CHILEAN SUBJECTS WITH PRIMARY HYPERCHOLESTEROMIA

A. Rosales[1], A. Pacheco[1], N. Saavedra[1], F. Lanas[2], L.A. Salazar[1]. *[1]Laboratorio de Biología Molecular & Farmacogenética, Facultad de Medicina, Universidad de La Frontera, Temuco, Chile. [2]Departamento de Medicina Interna, Facultad de Medicina, Universidad de La Frontera, Temuco, Chile.*

Background: Interindividual differences in the activity and expression of the metabolising enzymes cytochrome P450 (CYP) 3A4 and 3A5 and the multidrug efflux pump P-glycoprotein (P-gp, encoding by ABCB1 gene) contribute considerably to lipid-lowering efficacy of statin treatment in subjects with hypercholesterolemia. Variability in the activity of CYP3A4, CYP3A5 and P-gp could be considered to result from genetic polymorphisms encoding their genes. However, the available data indicate that the frequencies of *ABCB1*, *CYP3A4* and *CYP3A5* gene polymorphisms differ significantly across populations. Thus, the aim of the present study was to determine the allelic frequency of three common variants of these genes in Chilean individuals with primary hypercholesterolemia (HC) and controls. **Methods:** A total of 135 unrelated patients (44 ± 7 years old) with diagnosis of hypercholesterolemia (Total cholesterol ≥ 240 mg/dL) and 120 normolipidemic healthy controls (40 ± 10 years old; total cholesterol ≤ 200 mg/dL) were included in this study. The 3435C>T (*ABCB1*), -290A>G (*CYP3A4*) and 6986A>G (*CYP3A5*) gene polymorphisms were analyzed by PCR-RFLP. **Results:** The genotype distribution for 3435C>T variant of *ABCB1* in HC patients (CC: 49%, CT: 36%, TT: 15%) and controls (CC: 41%, CT: 48%, TT: 11%) was comparable (P=0.322). Similarly, the genotype distribution for -290A>G polymorphism of *CYP3A4* in HC subjects (AA: 52%, AG: 41%, GG: 7%) and controls (AA: 53%, AG: 38%, GG: 9%) was equivalent ($P = 0.910$). Finally, the genotype distribution for 6986A>G variant of *CYP3A5* in HC individuals (AA: 4%, AG: 33%, GG: 63%) and controls (AA: 3%, AG: 48%, GG: 49%) was similar (P=0.150). **Conclusion:** The allelic frequencies of 3435C>T (*ABCB1*), -290A>G (*CYP3A4*) and 6966A>G (*CYP3A5*)

polymorphisms are similar between Chilean HC patients and controls, and comparable to frequencies found in Asian populations. **Financial support:** Convenio de Desempeño-I-2007 (LS), Dirección de Investigación y Desarrollo, Universidad de La Frontera, Chile.

P625

Endothelial function: Relationship between coronary grafts and brachial artery in patients of coronary artery bypass surgery.

V. Proto[1], C. Joo Turoni[2], R Marañon[2], J Salinas[2], J Muntaner[1], M Peral De Bruno[2]. *[1]CENTRO MODELO DE CARDIOLOGIA [2]DEPARTAMENTO BIOMEDICO- FISIOLOGIA-UNIVERSIDAD NACIONAL DE TUCUMAN*

Joo Turoni Claudio1; Proto Víctor2; Marañón Rodrigo1; Salinas Juan1; Muntaner Juan2; Peral de Bruno María1 1. Departamento Biomédico – Fisiología – Universidad Nacional de Tucumαn Argentina 2. Centro Modelo de Cardiología Tucumαn Argentina In coronary artery bypass grafting surgery (CABGS), internal mammary artery (IMA) and saphenous vein (SV) are used as bypass conduits. In previous works, we demonstrated in isolated IMA from patients of CABGS an impaired endothelial function [Clinical and Experimental Hypertension 29:327–344; 2007]. Endothelial function may be evaluated by non-invasive method estimating the flow-mediated dilatation (FMD) in brachial artery. The objective of the present work was to compare the endothelial function in rings of IMA and SV with FMD of brachial arterial in patients from CABGS. **Material and methods:** From 26 patients of CABGS, paired rings (4 mm) of discarded segments of IMA and SV were obtained. In both vessels, endothelial-dependent relaxation was evaluated by the effect of acetylcholine (Ach 10−9−10−4 M) in precontracted noradrenaline (NA)-vessels. Endothelial function was considered present or absent when ring relaxed (E+) or not (E-) to Ach (>40% of NA precontraction). Complementary studies with immunohistochemistry examination (monoclonal CD34 antibodies) were performed in order to test the presence of endotelium. In addition, in this group, 13 randomized patients were selected in order to assay FMD in brachial artery by impedancimetric method. FMD was expressed as difference of pulse wave pressure trough-peak before and after 5 min of total arterial occlusion. Endothelium was considered present when FMD increased >10% of basal pulse wave pressure. FMD was also compared with 13 healthy subjects. **Results:** Ach response detected E- in IMA from 24 patients and E- in SV from 21 patients. That means values of Ach effect were +23.4±12.4mg (corresponding to 1.05% of NA-precontraction) and +89.8±28.6mg (6.1% of NA-precontraction) in IMA and SV respectively. In both IMA and SV the immunohistochemistry studies showed similar results than Ach response. No significant correlation in the presence of E+/E- between IMA and SV was found (Chi square: 1.9; p=NS). Endothelial dysfunction estimated by FMD was present in 11 patients. FMD values were significantly lower in patients than healthy subjects (-6.4±5.0; n=13 vs +20.1±5.8%; n=13 respectively; p<0.02). In addition the proportion of patients with impaired endothelial response by FMD was similar to that observed "in vitro" in IMA and SV rings (p=0.21 and p=0.37 respectively, the difference between two percentages: NS). **Discussion:** Although IMA is the main vessel used in CABGS, is controversial its endothelial integrity. In this work, it was compared, for the first time, the endothelial function in isolated IMA and SV rings with FMD in brachial artery, demonstrating that not only IMA and SV showed an impaired endothelial function but also this dysfunction may be present in other peripheral vessels.

P626

FAMILY MYXOMATOSIS. PRESENTATION OF THREE CLINICAL CASES.

R. Marelli[1], **A Hauqui[2]**, M Portis[3], D Vazquez[4], C Viscuso[5], C Echeverria[6], V Strada[7], J Como Birche[8], F Hauqui[9], N Baungartner[10]. *[1]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [2]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [3]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [4]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [5]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [6]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [7]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [8]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [9]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA [10]HOSPITAL SAN JUAN DE DIOS LA PLATA ARGENTINA*

Clinical case: sex, female; age,18. Complaints: it started with intermittent claudication of lower limbs and there followed a congestive cardiac insufficiency. Physical examination: Taquypnea. Yugular ingurgitation. Absence of pulse in both lower limbs. Crepitant rales. Lab tests: anemia, elevated eritrosedimentation. Electrocardiogram: left auricular enhancement, negative antero-lateral T. Chest X-ray: biventricular cardiomegalia, signs of postcapilar pulmonary hypertension. Ecocardiogram and peripheral Doppler: dilated myocardiopathy with severely depressed left ventricular ejection fraction, dilated left auricle and left cavities, moderate to severe mitral and tricuspid insufficiency, pulmonary hypertension. Total occlusion of left primitive carotid, subclaviae with diminished flow and critical reduction of bilateral radial flow. Marked left renal hypoflow, absence of flow in abdominal aorta, both femorals with monophasic flow and colateral circulation. Aortogram: Abdominal aorta occluded alter the emergency of renal arteries, severe ostial obstructive lesion of left renal artery, enhanced vascular resistence. Angioresonance: abdominal aorta thinned and occluded after the emergency of the renal arteries, with intensity of positive signal in both, although no signal is observed in left kidney, important colateral circulation. Takayasu Disease was diagnosed. Treatment: Metilprednisone 40 mg/day. Enalapril 10 mg/day. Carvedilol 6.25 mg/day. Espironolactone 25 mg/day. It remarkably improved the symptoms of cardiac insufficiency and it does not refer any intermittent caludication of lower limbs. It is an idiopathic vasculitis of great vessels that envolves the aorta and its main branches thus affecting young individuals (25 years of age average). The annual incidence is 2.6 per million people and the frequency in females is 10/1. The diagnosis is made, according to American College of Rheumatology, in presence of 3 or more of the following criteria: 1.- Onset age 40 years old or younger. 2.- Intermittent claudication. 3.- Pulse reduction in one or both brachial arteries. 4.- Difference of systolic arterial pressure between both upper limbs higher than 10 mm/Hg. 5.- Audible bruits on one or both subclavian arteries or abdominal aorta. 6.- Arteriography with narrowing or occlusion of the whole aorta, its primary branches or the big arteries in proximal upper and lower limb zones, not due to atherosclerosis, fibromuscular dysplasia or similar causes. The evolution of this disease is uncertain, with a slow progression during months or years. The most frequent causes of death are cardiac insufficiency and strokes. The interest of the case lies in the fact that it is a rare entity, which should be taken into account in young patients with intermittent claudication and high caliber vessels' affectation.

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Secondary acute coronary syndromes in older people.

G. F. López Soutric[1], A. Brignoli[1], S. Swieszkowski[1], A. Lakowsky[1], V. Brito[1], J.M. Caparrós[1], R. Perez De La Hoz[1], E.A. Sampó[1]. *[1]Coronary Care Division. Hospital de Clínicas " [5]José de San Martín" [9]. Buenos Aires University. Argentina*

Background: Secondary acute coronary syndromes (SACS) are viewed as a low risk entity. In general, older patients are a subgroup with major risk of events. Few studies have evaluated the clinical course of older patients with secondary acute coronary syndromes. **Objectives:** To analyze the in-hospital course of older patients with SACS admitted to our coronary care unit between 2005 and 2007. **Material and Methods:** We reviewed clinical records of 57 patients older than 75 years old with diagnosis of SACS admitted to our coronary care unit. We assessed the cause of secondary angina, clinical characteristics and outcomes during the hospitalization. Statistical analysis was performed. **Results:** Median age was 81.3 years (CI 95% 79.8−82.8), 49,1% men. The most frequent cause of secondary angina was arterial hypertension (AHT) (33.9%). Thirty one patients (54.4%) had ST segment depression in the initial electrocardiogram and twenty one (36.8%) had high troponin levels at admission. Nineteen patients (33,3%) had cardiac complications (recurrent angina, myocardial infarction or dead). Three patients (5,3%) died. The causes of angina other than AHT (OR 0.13 CI95% 0.02−0.64 p = 0,006) was a variable associated with cardiac complications. ST segment depression was associated with a major risk of recurrent angina (OR 4.9 CI95% 1.05 – 25.02 p=0,04). **Conclusion:** Older patients with secondary acute coronary syndromes have a high risk of cardiac complications. This may reflect a more extensive coronary artery disease, plaque complications during the event, or an equivocal assessment as SACS of the initial diagnosis. In our population the angina secondary to other causes than AHT, and the presence of ST-depression at admission suggested higher risk to a new ischemic event.

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TAKAYASU DISEASE. PRESENTATION OF A CLINICAL CASE

R. Marelli[1], **L Bernardini[2]**, D Braziunas[3], J Di Siervi[4], C Echeverria[5], C Viscuso[6], N Bangartner[7], R Lagos[8], O Pisano[9], O Rastelli[10]. *[1]HOSPITAL SAN JUAN DE DIOS DE LA PLATA ARGENTINA*

Clinical case: sex, female; age,18. Complaints: it started with intermittent claudication of lower limbs and there followed a congestive cardiac insufficiency. Physical examination: Taquypnea. Yugular ingurgitation. Absence of pulse in both lower limbs. Crepitant rales. Lab tests: anemia, elevated eritrosedimentation. Electrocardiogram: left auricular enhancement, negative antero-lateral T. Chest X-ray: biventricular cardiomegalia, signs of postcapilar pulmonary hypertension. Ecocardiogram and peripheral Doppler: dilated myocardiopathy with severely depressed left ventricular ejection fraction, dilated left auricle and left cavities, moderate to severe mitral and tricuspid insufficiency, pulmonary hypertension. Total occlusion of left primitive carotid, subclaviae with diminished flow and critical reduction of bilateral radial flow. Marked left renal hypoflow, absence of flow in abdominal aorta, both femorals with monophasic flow and colateral circulation. Aortogram: Abdominal aorta occluded alter the emergency of renal arteries, severe ostial obstructive lesion of left renal artery, enhanced vascular resistence. Angioresonance: abdominal aorta thinned and occluded after the emergency of the renal arteries, with intensity of positive signal in both, although no signal is observed in left kidney, important colateral circulation. Takayasu Disease was diagnosed. Treatment: Metilprednisone 40 mg/day. Enalapril 10 mg/day. Carvedilol 6.25 mg/day. Espironolactone 25 mg/day. It remarkably improved the symptoms of cardiac insufficiency and it does not refer any intermittent caludication of lower limbs. It is an idiopathic vasculitis of great vessels that envolves the aorta and its main branches thus affecting young individuals (25 years of age average). The annual incidence is 2.6 per million people and the frequency in females is 10/1. The diagnosis is made, according to American College of Rheumatology, in presence of 3 or more of the following criteria: 1.- Onset age 40 years old or younger. 2.- Intermittent claudication. 3.- Pulse reduction in one or both brachial arteries. 4.- Difference of systolic arterial pressure between both upper limbs higher than 10 mm/Hg. 5.- Audible bruits on one or both subclavian arteries or abdominal aorta. 6.- Arteriography with narrowing or occlusion of the whole aorta, its primary branches or the big arteries in proximal upper and lower limb zones, not due to atherosclerosis, fibromuscular dysplasia or similar causes. The evolution of this disease is uncertain, with a slow progression during months or years. The most frequent causes of death are cardiac insufficiency and strokes. The interest of the case lies in the fact that it is a rare entity, which should be taken into account in young patients with intermittent claudication and high caliber vessels' affectation.

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ASSOCIATION BETWEEN BIRTH WEIGHT AND CARDIOVASCULAR RISK FACTORS IN BRAZILIAN ADOLESCENTS

M. A.C. Sousa[1–2], I.C. Guimarães[3], C. Daltro[1], A.C. Guimarães[1–2]. *[1]BAHIANA SCHOOL OF MEDICINE AND PUBLIC HEALTH [2]BAHIANA FOUNDATION FOR SCIENCE DEVELOPMENT [3]FEDERAL UNIVERSITY OF BAHIA*

Size at birth is determinant of long term risk for obesity,type2 diabetes and cardiovascular disease[1]. It has been suggested that the intrauterine environment may be critical for the development of obesity,and that high birth weight (HBW) (BW≥4000g) increase the risk of obesity in adult life, but, paradoxically, don't increase the later propensity to cardiovascular disease[2]. **Objective:** investigate the association between cardiovascular risk factors in adolescence and birth weight. **Methods:** we evaluated retrospectively 209 subjects, aged 11–18 years, from private and public schools in Salvador-Brazil. Anthropometric measurements and blood pressure(BP) were collected and information on birth weight was extracted from medical records. Blood samples were collected in fasting state in order to obtain lipid and glucose profile, HOMA-IR and plasmatic insulin. Results were expressed by mean±standard deviation and percentage. Mean values were compared by one-way ANOVA and the Pearson Qui-square was used to compare proportions. **Results:** mean age was 13.9±2.1, mean birth weight was 3264.1±616.3 and 134(64.1%)were females. In account to birth weight, 22(10.5%) had HBW, 170(81.4%) normal birth weight(NBW) and 17(8.1%) low birth weight-(LBW). **Conclusion:** this study suggests that high birth weight was associated with higher BMI and higher blood pressure in adolescence, but the differences in lipid and glicemic profile, did not reached statistical significance between the three groups.

TABLE1: CHARACTERISTICS OF ADOLESCENTS IN ACCORDANCE OF BIRTH WEIGHT

VARIABLES	TOTAL 209(100%)	HIGHBW 22(10.5%)	NORMALBH 170(81.4%)	LOWBW 17(8.1%)	p
CHOLESTEROL	162.2±29.6	159.6±28.4	162.2±30.4	166.2±22.9	0.78
HDL	49.2±12.0	47.6±8.9	49.0±12.0	53.5 ±14.5	0.27
LDL	95.7±25.7	93.7±23.9	96.0±26.2	95.9±24.0	0.93
TG	86.3±33.8	91.5±38.0	85.8±33.9	84.5±28.5	0.74
NON HDL	108.1±27.0	106.0±25.1	108.3±27.5	108.2±25.2	0.93
TG/HDL	1.9±1.1	2.0±0.9	1.9±1.2	1.7±0.9	0.73
HOMA-IR	1.3±0.8	1.1±0.5	1.3±0.8	1.7±0.8	0.38
INSULIN	7.2±4.1	6.6±3.5	7.2±4.2	8.6±3.7	0.57
GLYCEMIA	85.7±7.1	84.5±7.7	85.9±7.1	85.7±6.7	0.68
OBESE	46(22.0%)	10(45.5%)	32(18.8%)	4(23.5%)	**0.02**
OVERWEIGHT	73(34.9%)	6(27.3%)	61(35.9%)	6(35.3%)	0.27
NORMAL BMI	90(43.1%)	6(27.3%)	77(45.3%)	7(41.2%)	0.27
WAIST CIRC.≥P75	100(47.8%)	14(14.0%)	77(77.0%)	9(9.0%)	0.24
SYSTOLIC BP≥P85	43(20.6%)	10(45.5%)	30(17.6%)	3(17.6%)	**0.01**
DIASTOLIC BP≥P85	38(18.2%)	9(40.9%)	25(14.7%)	4(10.5%)	**0.01**

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Usefulness of the rapid test of NT-ProBNP and non-invasive haemodynamic assessment with tissue Doppler for early diagnosis of decompensated heart failure in a cardiovascular emergency room

E. Perna[1], E Garcia[2], O Querencio[3], E Villegas[1], P Pozzer[1], G Pereira Zini[1], R Sanchez De Coll[1], W Garcia[2], E Fernandez[3], J Parras[2]. *[1]Heart Failure Clinic, Instituto de Cardiologia J, F, Cabral, Corrientes, Argentina [2]Echocardiography, Instituto de Cardiologia J, F, Cabral, Corrientes, Argentina [3]Emergency Room, Instituto de Cardiologia J, F, Cabral, Corrientes, Argentina*

The diagnosis of acute decompensated heart failure (DHF) in the emergency room is challenging. In spite of the recognized diagnostic utility of the natriuretic peptide, its use by cardiologists in our country is limited. In addition, the diagnostic role of non-invasive estimation by tissue Doppler of end diastolic left ventricular pressure (EDLVP) has been poorly assessed in this setting. **Objective:** To evaluate the utility of the rapid bedside NT-proBNP test (POC) and EDLVP in patients admitted by dyspnea to a cardiovascular emergency room for the diagnosis of DHF. **Material and methods:** We prospectively included 41 consecutive patients with dyspnea at rest in the absence of previous diagnosis of heart failure; or with an alternative diagnosis. NT-proBNP was measured by POC (Cardiac Reader, Roche) and with an electro-chemiluminescent immunoassay (Elecsys proBNP, Roche)(Lab). EDLVP was estimated by tissue Doppler technique through the formula: (septal LV wall E/E′+ Free LV wall E/E′)/2. **Results:** The mean age was 65±13 years, 68% were women and 36% had history of heart failure. The mean value of NT-proBNP was 1146±1235 pg/mL (60–3000) for POC and 1947±3493 pg/mL (4–18896) for Lab, with a coefficient R of 0,94 ($p<0.0001$). The area under ROC curve of POC and Lab to predict EDLVP <12 was 0.85 and 0.84, and for EDLVP >15 was 0,80 for both. The area under ROC curve of EDLVP to "rule-in" diagnosis of DHF (defined by NT-proBNP >450 in <50 years, >900 in 50–75 and >1800 in >75) was 0.77 whereas to rule-out DHF (NT-proBNP < 300) was 0.88, and a cut-off of 12 showed a sensivity/especificity of 86/71 and 89/78 %, respectively. Clinical indecision (defined by a clinical probability of DHF at admission between 21–79%) was established in 64%, whereas according to the POC the "biomarker" indecision (defined by NT-proBNP levels between values for ruling-in and ruling-out DHF) was 19%, and the tissue Doppler indecision (defined by EDLVP between 12–15) was 15% with EDLVP. Thus, the indecision was reduced by 71% ($p=0.001$) by NT-proBNP and 77% by tissue Doppler ($p=0.001$), without differences between both methods. **Conclusions:** Both, a rapid test of NT-proBNP and non-invasive determination of EDLVP by tissue Doppler are useful and comparable tools in the assessment of patients with dypsnea of uncertain origin. Both methods allow an early reduction of clinical indecision at emergency room.

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Comparing drug eluted with bare metal stents: Are we treating the same patients in the same way?

F Braga[1], L Armini[1], J Kezen[1], S Gomes Jr[1], R Guerreiro[1], A Bahia[1], A Neno[1], M Batista[1], R Villela[1], J Mansur[1]. *[1]Hospital Samaritano*

Background: Since their introduction into the market, drug eluted stents (DES) have been extensively used worldwide. Despite the specified label indications, they have been frequently used in an off-label scenario. In addition, the patients risk profile has been increasing. Together, these two conditions could increase the incidence of short-term complications. **Objective:** To analyze clinical and interventional characteristics (CC and IC) of the patients underwent to percutaneous coronary intervention (PCI) from DES era, and compare with those from bare metal stents era. **Materials and Methods:** Cohort of patients underwent to PCI with stent between January 1999 and July 2007. Brazilian ministry of health approved DES in March 2002. Then we compared PCI done before that time point (ERA1) with those done after that (ERA2). CC compared were: age, previous AMI, diabetes mellitus (DM), chronic renal failure (CRI), heart failure (HF) and any previous revascularization procedure (PRP). IC were: bifurcations lesions (BF), stent reestenosis (SR), small vessel defined as < 3 mm (SV), venous graft PCI (VG), chronic total occlusion (CO), unprotect left main PCI (ULM) total length of the stents (TL), more than one vessel PCI (M1V), number of treated vessels (NTV) and number of stent per patient(NSP). The in-hospital mortality was also reported. **Results:** Five-hundred seventy two PCI were performed in both eras (70.6% in ERA2). Mean age and the frequency of previous AMI, DM, CRI, HF and PRP were 67.59±12.86 vs. 70.43±11.7 years old ($p=0.03$); 13.1 vs. 13.4% ($p=0.8$); 11.3 vs.19.1% ($p=0.024$); 6.0vs.3.7% ($p=0.23$); 6.7vs. 14.5% ($p=0.01$) and 26.5 vs. 34.4% ($p=0.055$) respectively for ERA1 and 2. The rates of BF, SR, SV, VG, CO, ULM and M1V were: 3.6vs.14.1% ($p<0.001$); 2.4 vs. 6.9 ($p=0,031$); 44.2 vs. 58.9 ($p=0.002$); 7.1 vs. 2.5% ($p=0.008$); 7.1 vs. 4.2% ($p=0.145$); 0 vs. 0.5% ($p=1.0$) and 6 vs. 16.8% ($p=0,001$) respectively for ERA1 and 2. The mean TL, NTV and NSP were: 20.49±9.4 vs. 35.84±23mm ($p<0.001$); 1.10±0.5 vs. 1.43±0.68 vessels per patient ($p<0.001$) and 1.06±0.69 vs. 1.64±0.96 stents per patients ($p<0.001$) respectively for ERA1 and 2. The in-hospital mortality rates were 5.4 vs. 3.7% ($p=0.372$). **Conclusion:** In our population after advent of DES patients treated with PCI had more comorbidities as DM and HF, more complex lesions as BF and SR, received more stents, had more treated vessels and had smaller vessels. Despite of that we did not observe increased in-hospital mortality.

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Transradial percutaneous coronary angiography and interventions

EC Eric J. Carro-Jiménez[1], HQ Humberto O. Quintana-Irazola[2], JB Jonathan Bonilla Díaz[3], CA Claudia Algaze[3], JDR Juan M. Del Río[3], JC Joaquín Crespo[3], JO José Ortiz Betancourt[3], ER Ernesto Ruiz[3], MA Michelle Arrieta[3], IP Iris Parrilla Boria[3]. *[1]Cardiology Section, University of Puerto Rico School of Medicine, San Juan, Puerto Rico [2]HIMA San Pablo Hospital, Bayamón, Puerto Rico [3]Universidad Central del Caribe, Bayamón, Puerto Rico*

Coronary artery disease is the leading cause of death in both men and women worldwide. Coronary angiography is widely performed to diagnose and monitor coronary artery disease. Percutaneous transluminal coronary interventions are part of the mainstay therapy for both acute and chronic coronary obstructions. Coronary angiography and interventions have traditionally been done through the femoral arterial access. Complications with the transfemoral approach may at times constitute a significant problem in cardiac catheterization procedures. Of particular concern are the occurrence of vascular complications such as hematoma, pseudo aneurysm, arteriovenous fistula formation, vessel damage, and bleeding, with the possible need for blood transfusions. As a preventive measure, diagnostic and, more commonly, interventional procedures, require a post procedure bed rest and frequent overnight stay for observation. Complications and prolonged hospital stay, besides having a negative effect on patients, increases health costs. Studies suggest that the transradial artery approach allows diagnostic and interventional coronary artery procedure outcomes comparable to the transfemoral approach, but with certain advantages, such as minimal vascular complications, early ambulation, and improved patient comfort. Also, the decreased rate of complications and early ambulation provide for earlier discharge of patients and a decrease in hospital costs. Despite growing evidence that the transradial approach is a safe and cost effective technique for both diagnostic and therapeutic coronary procedures, there is a limited use of this technique both in the United States and in many countries of the world. The experience of one interventional cardiologist, Dr. Humberto Quintana-Irazola, was reviewed. A random sample of 517 (out of 1992) patients that had cardiac catheterization and/or interventional procedures done through the transradial access from 2002 to 2005 were reviewed. Mean age of patients was 66 years (range from 31 to 93 years old). Sixty six percent were males and 34% were female. Of these patients, 10 developed access related complications, none of them with serious consequences (4 hematomas on puncture site, 2 bleedings from puncture sites with one requiring 1 unit of red blood cells, 4 patients with transient edema of hand, 1 patient with pain on puncture site, and 2 patients with spasm of radial artery, which resolved). There was no loss of radial pulse, as well as no arteriovenous fistula or pseudo aneurysm formation. There were 3 deaths in this group, but none of them due to radial access complications (one patient had periprocedure myocardial infarction, one was in cardiogenic shock prior to procedure, and one had coronary dissection and tamponade). Of all the 517 patients with transradial approach, 192 were discharged on the same day of the procedure. In 124 of these patients an interventional procedure had been performed, and were discharged without a significant complication. In this group of patients the radial access was associated with a low complication rate, was safe, and provided for early discharge of patients post procedure. It is wondered if, in view of its advantages, the transradial approach should be used more frequently than the transfemoral approach.

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Conduct relation comparison between cardiac frequency and work load during stress test on patients with cardiopathy

N. Pacheco[1], N. Ceron[2], J. Alonso[3], H. Ilarraza[4]. *[1]National institute of cardiology " [3]Ignacio Chávez" [5]México [6]National Institute of cardiology " [8]Ignacio Chávez" [10]México*

Objectives The variables that evaluate the cardiovascular performance in exercise usually is interpreted in an isolated manner (work load changes or better put in cardiac frequency etc). An individual's performance is based on the relation of these physiological variables and the work load. The objective of the following study is to describe the index frequency cardiac work (IFC/W) during the stress test in individuals with cardiopathy. **Methods** This is a descriptive study in which 42 individuals were recluted with different cardiopathy problems. All underwent a cicloergometer stress test. The beginning load was 1Watt and began with an initial pedal speed of 60 revolutions per minute (rpm) 3min afterwards the load was increased to a rate of 2Watts every 10 seconds until the maximum stress. Immediately the recuperation phase began at 40 rpm and 10% of the maximum stress realized (3minutes) and finally at rest for 5 minutes. During the test the conventional cardiopulmonary variables were measured (analysis of gases exhaled) the IFC/W is calculated by dividing the cardiac frequency (heart beat per minute) by the work load (W), other indexes were also calculated. **Results** No complications were found during the study, the stress and cardiac frequency lineal conduct exhibited an increase with additional load, but with a slope change (2 lines). The first (a) since the beginning of the load increase until a value of approximately 20Watts As from then the slope line changes (b) being lineal until the stress ends, on the other hand the IFC/W exhibited a clear conduct during exercise that is at the beginning, it requires small load changes to provoke major changes in the IF/CW. Afterwards the curve stabilized, requiring mayor changes in the work load to provoke small changes in the IFC/W. This stabilization coincides with the slope change in the FC conduct. The curve equation is IF/CW = 24.131* Load (W) -0.748, and a correlation of R2=0.98. **Conclusions** The IF/CW calculation guides us with major precision the cardiovascular performance of an individual during exercise. In the future the IF/CW could be useful in determining the optimum work load of an individual or better put, to measure the conditioning that is acquired during a training program.

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INCIDENCE OF CORONARY ARTERY STENT THROMBOSIS IN THE "REAL WORLD" EXPERIENCE OF A UNIVERSITARY COLOMBIAN HOSPITAL

B. Lombo[1], C. Satizabal[2], I. Rendon[1], D Sarmiento[1], C. Carvajal[1], J. Mor[1]. *[1]Fundaciòn Santa Fe de Bogotá [2]Universidad de los Andes*

Background The available evidence for thrombosis in drug-eluting stents are based on randomized control studies with strict inclusion criteria and usually in patients with non complex lesions, this limits the conclusions and makes it difficult to apply them in the real world **Objectives** Determine the incidence of thrombosis between bare metal stents versus drug-eluting stents in patients of the Fundacion Santa Fe de Bogota (Tertiary level University Hospital In Colombia) between the years January 2004-January 2007. **Methods** It consisted of an incidence study to determine the number of cases of thrombosis in implanted stents. The information was gathered from the clinical history, Interventional cardiology data bases and clinical follow up consults identifying demographic characteristics, risk factors, clopidogrel treatment and events of thrombosis within 0 to 90 days. **Results** The study included 430 patients with a total of 581 stents (68, 7% bare metal stents, 31, 3% drug-eluting stents). There were 7 events of thrombosis within 0 to 90 days (4 with bare metal stents and 3 with drug-eluting stents). The incidence of thrombosis with any kind of stent was 1, 2% (CI 95% 0,5–2,5). The incidence of thrombosis with the drug-eluting stents was 1, 6% (CI95% 0,3–4,7), and with the bare metal stents 1,0% (CI 95% 0,3–2,5) p=0,55. The relative risk of a thrombosis with a drug eluting stents is 1, 6% (CI 95% 0, 4–7, 2) p=0, 68. 60,6% of the patients followed, received clopidogrel after the intervention, for a media of time of 15 months SD 7,37. 39, 4 % of the patients did not receive ambulatory clopidogrel after the procedure **Conclusions** This study does not show significant differences in the incidence of thrombosis between both types of stents. Although the relative risk for thrombosis is higher for drug-eluting stents between the total population and the total of lesion this were not significant. It's necessary to conduct future studies that involve a higher sample of the population with a longer follow up. There are a great proportion of patients who did not receive ambulatory clopidogrel after the implantation of stents. Several reasons in developing countries affects the possibility to receive clopidogrel after implantation of stents, they may be cultural, logistical and or economical ones.

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The relationship of left atrial size and stress echocardiography

S. Enar[1]. *[1]Türkiye Hospital*

Objective: It has been proposed that left atrial(LA) size can further risk stratify patients undergoing stress echocardiography.And normal resting LA predicts normal stress echocardiography.The aim of this study was to evaluate LA size in patients undergoing stress echocardiography. **Methods:** 63 patients undergoing Dobutamine stress echocardiography (DSE) were included in the study.Mean age was 61.8 and 52.4% were male.Patients with significant mitral valve disease were not included.DSE was performed according to the established protocol.Patients were divided into 3 groups.Group A (N:40) LA size <4cm,group B (N:16) LA size >4cm and <4.5 cm,andgroup C (N: 7) as LA size >4.5 cm.La size was measured from 4 chamber view. **Results:** Patients in group C were relatively older and had lower EF.32.5% of patients in group A had +test results,whereas it was 37.5% in group B and 70% in groupC.The findings in group C were statistically significant (p<0.001). **Conclusion:** LA size may predict the outcome of stress echocardiography results.Patients with dilated left atriums (especially >4.5 cm) are expected to have more positive test results when compared to those with normal atriums.

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Effects of Amaranthus caudatus L. hydroalcoholic extract on new risk factors of cardiovascular diseases and prevention of fatty streak formation and comparing its effect with lovastatine

S. Asgary[1], N Kabiri[2], H Madani[2], P Mahzoni[3], N Jafari Dinani[1]. *[1]Basic Science,Isfahan Cardiovascular Research Center [2]Biology Department, The university of Isfahan [3]Biology Department, The university of Isfahan [4]Pathology Department, University of Medical Science [5]Basic Science,Isfahan Cardiovascular Research Center*

Background and Objectives: Cardiovascular diseases and atherosclerosis are the leading cause of mortality and morbidity around the world, which they are due to gradual precipitation of lipid in arteries' muscular tissue. In this article, anti atherosclerotic effect of Amaranthus caudatus (AC) on rabbits was studied, and then it was compared with lovastatine. **Method:** In this study, 25 male, adult rabbits from New Zealand were distributed randomly in five groups of five. They were treated by these diet programs, for 60 days ; basic, high level cholesterol, regular diet plus 150 mg/kgbw of AC extract, high level cholesterol plus 150 mg/kgbw of AC extract and high level cholesterol plus 10 mg/kgbw of lovastatine. At the beginning and the end of study, rabbit blood samplings have been done and serum factors have been studied. In order of approving the performance, the aorta has been sampled for histological procedures. **Results:** Results show that AC leads to reduction of cholesterol level, TG, LDL-C, VLDL, OX-LDL, apoB, hs-CRP, AI and rise of HDL-C, apoA in comparison with high cholesterol group. Also lesion severity, in extract recipient group, is declined in comparison with high cholesterol group. **Discussion:** AC extract causes prevention of atherosclerosis by ; decrease of serum lipoproteins and new risk factors especially apo-lipoprotein B, that is one of the most important new risk factors of cardiovascular diseases, and by decreasing of LDL oxidation and inflammatory factors cause prevention of atherosclerosis. Also results show that, the extract is more effective on decreasing of cardiovascular risk factors and atherosclerotic lesions in aorta than lovastatine. Risults in this study showed that treated groups with hydroalcoholic extract effects of AC in a significant amount more effective than lovastatine.

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Effect of hydroalcoholic extracts of Jugulans Regia on blood sugar in diabetes-induced rats

S Asgary[1], P Rahimi[2], H Madani[2], P Mahzouni[3], N Jafari Dinani[1]. *[1]Isfahan Cardiovascular Research Center, Isfahan University of Medical Sciences [2]Department of Biology, Isfahan University [3]Department of Biology, Isfahan University [4]Department of Pathology, Faculty of Medicine, Isfahan University of Medical Sciences*

Background Walnut is one of the medicinal plants which is used in traditional Iranian medicine as a treatment for diabetes, but few scientific documents support its anti-diabetic action. Aim of the study This study designed to evaluate the anti-diabetic effect of hydroalcoholic extract from walnut leaf. **Materials and Methods** 24 mature male rats of Wistar race were divided into 4 groups; non diabetic rats, alloxan-induced diabetic rats with no treatment, alloxan-induced diabetic rats treated with extracts of Jugulans regia 200mg/kg and alloxan-induced diabetic rats treated with glibenclamide 0.6 mg/kg. **Results** Blood Sugar (BS) had a meaningful decrease in diabetic rats treated with Juglans regia and diabetic rats treated with glibenclamide. Insulin level increased significantly in both groups in comparison with diabetic group with no treatment. The histological study revealed size of islets of langerhans enlarged consequentially as compared with diabetic rats with no treatment. **Conclusions** Our data show that hydroalcoholic extract from leaves of Juglans regia has a dramatic anti-diabetic effect on diabetes-induced rats.

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Dietary supplementation with Artemisia sieberi reduce atherosclerosis in hypercholesterolemic rabbits

S. Asgary[1], N. Jafari Dinani[1], P. Mahzouni[2]. *[1]Isfahan Cardiovascular Research Center, Isfahan University of Medical Sciences [2]Isfahan Cardiovascular Research Center, Isfahan University of Medical Sciences [3]Department of Pathology, Faculty of Medicine, Isfahan University of Medical Sciences*

The objective of this study was to evaluate the effect of Artemisia sieberi extract on blood lipids and the development of atherosclerosis in hypercholesterolemic rabbits. Fifteen rabbits were randomly divided into three experimental groups: normal diet group, hypercholesterolemic diet group and a third group fed with hypercholesterolemic diet supplemented with 100 mg/kg body weight with the Artemisia sieberi extract every other day. The treatment lasted for 60 days. Biochemical factors (total cholesterol, LDL-cholesterol, HDL- cholesterol and triglycerides) were measured at first, middle and final period of the study(0th, 30th and 60th days). At the end of the study, the aortas were removed for assessment of atherosclerotic plaques. The results indicate that Artemisia sieberi significantly reduces the levels of total cholesterol, LDL-cholesterol and triglycerides, and it also significantly increases the levels of HDL-cholesterol. The degree of atherosclerotic thickness is significantly reduced in the treated group which indicates that Artemisia sieberi extract inhibits the development of atherosclerosis. This may be related to the effect of Artemisia sieberi on plasma lipoproteins in addition to its antioxidant and anti-inflammatory properties.

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The Utility Rates of Integrated Treatment Strategies for CHD Secondary Prevention among High Risk CHD Patients in China

D. Zhao[1], Q. Liu[2], M. Hunn[3], W. Wang[4], CM. Yu[5], JR. Zhu[6], J. Liu[7], S. Smith Jr[8]. [1]*Capital Medical University affiliated Beijing Anzhen Hospital* [2]*Capital Medical University affiliated Beijing Anzhen Hospital* [3]*World Heart Federation* [4]*Capital Medical University affiliated Beijing Anzhen Hospital* [5]*The Chinese University of Hong Kong* [6]*Fudan University affiliated Shanghai Zhongshan Hospital* [7]*Capital Medical University affiliated Beijing Anzhen Hospital* [8]*University of North Carolina at Chapel Hill*

The Utility Rates of Integrated Treatment Strategies for CHD Secondary Prevention among High Risk CHD Patients in China Dong Zhao, Qun Liu, Marilyn Hunn, Wei Wang, Cheuk-Man Yu, Jun Liu, Junren Zhu, Sidney C. Smith Jr. on behalf of WHF BRIG project **Objectives:** To investigate if the integrated treatment strategies for CHD secondary prevention are appropriately used in clinical practice and to identify problems and barriers in high risk CHD patient care in China. **Method:** A representative sample of high risk CHD patients was drawn nationwide from secondary and tertiary hospitals. The high risk CHD patients included CHD patients with a history of ACS seen in outpatient clinics and ACS patients admitted to hospitals. The utility rates of secondary prevention strategies were examined. **Results:** 6126 high risk CHD patients were recruited. Among them, 2803 CHD patients with ACS history were recruited from outpatient clinics and 3323 ACS patients were recruited from hospitalized ACS cases. Mean ages of the patients were 65. Among the CHD outpatients, only 28% were fully treated as required by guidelines. One third of the patients received only one or two drugs with Aspirin having the highest utility rate and Statin had lowest. In hospitalized recurrent ACS patients, the utility rates of CHD treatment strategies before hospitalization were the poorest. Only 6.6% of recurrent ACS patients received a complete treatment regimen whereas 27% received only one or two drugs and 57% did not receive any treatment. Among hospitalized ACS patients the rate of integrated CHD secondary prevention strategies prescribed before discharge was 29%, 25% received only one or two drugs and 15% received none of the treatments required by guidelines. **Conclusion:** There is a wide gap between current best knowledge and contemporary practice for high risk CHD patient care in China. The majority of CHD patients with ACS history are not fully treated using integrated or complete secondary prevention treatment therapies.

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Adipokines In Coronary Artery Disease And Heart Failure: Relationships With Left Ventricle Hemodynamics And Cachexia

C. Antoniades[1], D. Tousoulis[1], A. Antonopoulos[1], A. Drolias[1], N. Koumallos[1], K. Marinou[1], K. Bakoyiannis[1], C. Tentolouris[1], E. Vavouranakis[1], C. Stefanadis[1]. [1]*University of Athens*

Background: Adiponectin is an adipokine with a protective role in cardiovascular system, while resistin and leptin are adipokines with a pro-inflammatory effect. Despite the importance of adipokines in cardiovascular disease, the role in end-stage heart failure (HF) or stable coronary artery disease (CAD) is unclear. We compared the expression of adiponectin, resistin and leptin between patients with HF, CAD and healthy individuals, and we examined their association with left ventricular function. **Methods:** The study population consisted of 268 individuals: 147 patients with HF (ejection fraction of the left ventricle (EF) 32.5±0.5%, 137 with CAD and normal EF (54.4±0.5%) and 80 healthy individuals matched for age, gender and risk factors for atherosclerosis. EF was measured by ultrasound and serum adiponectin, resistin and leptin were measured by ELISA. **Results:** Serum resistin was significantly higher in HF (8.6±0.35 ng/ml) compared to CAD (6.5±0.3 ng/ml $p<0.001$) or healthy controls (7.0±0.4ng/ml, $p<0.001$), while there was an inverse association between resistin and EF (rho=-0.294, $p=0.0001$). Surprisingly, adiponectin levels were also significantly greater in patients with HF (26.5±2.1 μg/ml) compared to either patients with CAD (14.8±0.9μg/ml, $p<0.001$) or healthy individuals (9.95±0.8μg/ml, $p<0.001$ vs HF and p=NS vs CAD), and adiponectin was negatively correlated with EF (rho=-0.245, $p=0.0001$). Importantly, serum leptin was significantly lower in HF (10.9±0.7 ng/ml) compared to CAD (14.4±1.5ng/ml $p<0.05$) or healthy individuals (13.6±0.7ng/ml, $p<0.05$), but there was no linear association between leptin and EF. In linear regression, the associations between EF and either resistin or adiponectin lost significance when body weight was introduced into the regression models. **Conclusions:** Heart failure is associated with elevated resistin and adiponectin but decreased leptin levels. Resistin and adiponectin are both inversely associated with EF, but this effect is dependent on body weight. These findings indicate that cachexia modifies adipokines expression in heart failure, and adipokines may have a role in heart failure syndrome.

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Genetic Polymorphism On Angiotensin Receptor Type 2, Modifies Plasma Levels Of Acute Phase Proteins And Affects Cardiovascular Risk In Hypertensive Subjects

D Tousoulis[1], N Koumallos[1], C Antoniades[1], A Antonopoulos[1], D Kardara[1], D Mentzikof[1], C Vasiliadou[1], C Tentolouris[1], E Stefanadi[1], C Stefanadis[1]. [1]*University of Athens*

Background: Renin-angiotensin system affects cardiovascular disease pathogenesis through a balance of angiotensin II effects on proatherogenic constitutive type 1 and antiatherogenic inducible type 2 (AT2R) receptors. The impact of A1675G polymorphism on the development of hypertension and advanced atherosclerosis is controversial. We examined the impact of A1675G polymorphism on AT2R, on the risk for arterial hypertension and coronary atherosclerosis, and its effect on the expression of proatherogenic inflammatory molecules. **Methods:** The study population consisted of 310 males: 145 with arterial hypertension and 165 controls, matched for age and risk factors for atherosclerosis. Among hyoertensive subjects, 37 had angiographically documented coronary atherosclerosis and 108 had no evidence of atherosclerosis. The presence of A1675G polymorphism on AT2R gene (located in chromosome X) was determined by PCR. Serum levels of C-reactive protein and fibrinogen was measured in all the participants. **Results:** The frequency of the A allele was similar between patients with arterial hypertension (64/145, 44.1%) and non-hypertensive subjects (73/165, 44.2%, p=NS), while the risk for arterial hypertension was OR[95%CI]:1.004[0.641–1.574], p=0.985 for the G vs A carriers. However, the risk for coronary atherosclerosis within the group of hypertensive subjects was significantly elevated in the carriers of the A allele (OR[95%CI]:2.128[1.003–4.513], p=0.04 vs carriers of the G allele). Importantly, the presence of the A allele was also associated with significantly higher levels of CRP (4.8±0.8mg/dl) compared to the carriers of the G allele (3.0±0.3mg/dl, $p<0.05$). Similarly, fibrinogen levels were higher in A-allele carriers (median(25th-75th percentile) 395(340–455) mg/ml) compared to G-allele carriers (369(320–406) mg/ml, $p<0.05$). **Conclusions:** Although genetic polymorphism A1675G on AT2R is not associated with the development of arterial hypertension, it affects the risk for coronary artery disease among hypertensive patients. The presence of the A allele also leads to higher levels of CRP and fibrinogen, implying that this polymorphism may induce atherogenesis by modulating acute phase response in hypertensive individuals.

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The Impact Of Acute Consumption Of Corn Oil, Liver Oil, Olive Oil Or Soya Oil On Endothelial Function And Oxidative Stress Status, In Healthy Adults

C. Tentolouris[1], D. Tousoulis[1], N. Papageorgiou[1], C. Antoniades[1], A. Giolis[1], E. Stefanadi[1], C. Tsioufis[1], G. Bouras[1], K. Marinou[1], C. Stefanadis[1]. [1]*University of Athens*

Background: Evidence suggests that consumption of different types of oil may have different effects on cardiovascular risk. However, the exact role of corn oil, liver oil and olive oil on endothelial function in humans is unknown. We evaluated the effect of acute consumption of corn oil, liver oil and olive oil on endothelial function in healthy adults. **Methods:** The study population consisted of 28 healthy adults (aged 28.1±1.3 years old). Subjects were randomly allocated into 4 groups to receive a single oral amount of corn oil (n=7), liver oil (n=7) or olive oil (n=8) or soya oil (n=6). Endothelial function was evaluated by gauge-strain plethysmography at baseline and after 1, 2 and 3 hours. Endothelium dependent dilation was defined as the %change of flow from baseline to the maximum flow during reactive hyperemia. Oxidative stress status was determined by total lipid peroxides (PEROX). **Results.** EDD was significantly decreased 1 hour after consumption of corn oil (from 81.6±10.8% to 64.9±7.6% $p<0.05$ vs baseline) and remained at the same levels at 2 (64.9±12.8%, p=NS vs 1hour) and 3 hours (63.9±10.2%). EDD was slightly but not significantly increased 1 hour after consumption of liver oil (from 63.6±10.2% to 83.5±15.4% p=NS), remained at the same levels after 2 hours (85.5±12.2% p=NS vs baseline) and returned to baseline at 3 hours (64.2±13.2%, p=NS vs baseline). Acute consumption of olive oil or soya oil had no effect on endothelial function, since EDD remained unchanged at 1, 2 and 3 hours. PEROX remained unchanged in all groups (from 125±32, 147±39, 140±27 and 102±16 to 128±40, 164±49, 148±32 and 90±19 U/L for corn oil, liver oil, olive oil and soya oil respectively, p=NS for all). **Conclusions.** Consumption of corn oil leads to impaired endothelial function, while liver oil may improve endothelial function in humans, while oxidative stress does not seem to be involved in these effects. These findings suggest that consumption of different types of oil may affect vascular endothelium in a different way, partly explaining the important role of dietary oil consumption on cardiovascular risk.

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Oxidative Stress IS Not The Main Regulator Of Asymmetrical Dimethyl-Arginine (ADMA) Synthesis In Experimental Homocysteinemia

C. Antoniades[1], D. Tousoulis[1], K. Marinou[1], G. Bouras[1], E. Stefanadi[1], C. Vasiliadou[1], C. Vlachopoulos[1], A. Antonopoulos[1], C. Tentolouris[1], C. Stefanadis[1]. [1]*UNIVERSITY OF ATHENS*

Background: Endothelial nitric oxide synthase endogenous inhibitor, asymmetical-dimethyl arginine (ADMA), has been associated with endothelial dysfunction, and is considered to be a new risk factors for atherosclerosis. Although methionine-induce homocysteinemia is associated with increased oxidative stress which results to impaired endothelial function, the role of ADMA remains unclear. We investigated the role of ADMA and oxidative stress in endothelial dysfunction observed during methionine-induced homocysteinemia in healthy individuals. **Methods:** Thirty (30) healthy subjects (24±2 yrs, 18 males 12 females) underwent methionine loading (100 mg methionine/Kg body weight). Fifteen of them also received vitamin C (2gr) and E (800IU) before methionine loading. Forearm blood flow was measured by gauge-strain plethysmography at baseline and 4 hours post methionine loading (4h-PML). Endothelium dependent dilation (EDD) was expressed as the %change of flow from rest to the maximum flow during reactive hyperemia. EDD, plasma homocysteine (Hcy), ADMA and oxidized-LDL (ox-LDL) were determined at baseline and 4h-PML. **Results:** Plasma Hcy was increased in both vitamins-treated and control groups (from 12.05(6.6–26.2) and 11.3(6.8–15.5) to 34.6(22.7–54.4) and 31.4(23.7–47.6) μM $p<0.01$ for both at 4h-PML. Ox-LDL levels were increased only in the control group (from 56.3±8.26 to 107.6±8.9 IU/L $p<0.01$) but remained unchanged in the vitamins treated group (from 61.57±5.31 to 61.78±9.76 IU/L p=NS). However, EDD was decreased in both vitamin-treated and control groups (from 86.6±10.5 and 96.7±9.6 to 41.1±6.3 and 52.2±6.5% respectively, $p<0.01$ for both). Plasma levels of ADMA were also increased in both vitamin-treated and controls (from 0.59±0.03 and 0.61±0.041 to 0.78±0.048 and 0.82±0.038 μM respectively, $p<0.01$ for both) at 4h-PML. **Conclusions:** Both oxidative stress and ADMA are implicated in endothelial dysfunction observed during methionine-induced homocysteinemia. Although high-dose antioxidant treatment prevents the increase of oxidative stress in acute homocysteiemia, it does not affect the increase of ADMA and the development of endothelial dysfunction. These findings suggest that the release of ADMA during methionine-induced homocysteinemia is not regulated by oxidative stress, and it is partly responsible for the rapid development of endothelial dysfunction in this disease model, independently from free radicals production.

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Gender differences in a population suspected of ischemic heart disease: exercise response, perfusion abnormalities and prognosis

M. Ferreira[1], A. Ferrer-Antunes[1], J. Lima[1], L.A. Providência[1]. [1]*COIMBRA UNIVERSITY HOSPITAL*

Background: Ischemic heart disease in women assumes different characteristics in what concerns pathophysiology, clinical presentation, diagnosis and prognosis. Women have higher prevalence of vasospastic angina, microvascular angina and abnormal vasodilator reserve. These mechanisms influence the response to exercise, the incidence of myocardial perfusion abnormalities and the prognosis of disease. **Objective:** The aim of this study was to analyse gender differences in what concerns: response to exercise, results of myocardial perfusion imaging and prognosis of a population referred to myocardial perfusion scintigraphy for suspected ischemic heart disease. One hundred and seventy four patients were included, 91 men and 83 women. Myocardial perfusion imaging was performed according to the stress-rest protocol with Tc-99m tetrafosmin. Stress images were acquired after the injection of the radiotracer during Bruce treadmill exercise test. Patients were clinically followed, during 3 years or until the ocurrence of death, myocardial infarction or myocardial revascularization. There were no age differences between the groups (men 59.0 $\pm$ 10.8; women 58.6 $\pm$ 9.8; p = ns). Exercise capacity was inferior in women (men 8:30 $\pm$ 2:00 min; women 6:42 $\pm$ 2:00 min; $p < 0.0001$). Angina during exercise was referred by 11.8% of men and 12.0% of women (p = ns). The number of positive exercise tests was similar (men 42.9%; women 48.8%; p = ns). Perfusion images were abnormal in 64.8% men and in 20.5% women ($p < 0.0001$). The observed concordance between tests was of 58% in men and 53% in women with a Kappa coefficient of 0.16 and 0.09, respectively. During follow-up, 12 events occurred: 8 revascularizations, 3 myocardial infarctions and 1 death (11 events in men). Using Kaplan-Meier analysis, the chi-square (Logrank test) was of 8.7 $p \leq 0.005$. **Conclusion:** Women referred to myocardial perfusion scintigraphy for suspected ischemic heart disease had lower exercise capacity. Angina during exercise was equally referred by men and women. The incidence of myocardial perfusion abnormalities and cardiac events during the follow-up period was higher in men. The tests were weakly concordant in both men and women, which was not unexpected as this was a population referred for myocardial perfusion scintigraphy. The response to exercise, the number of normal perfusion scans and the better prognosis in studied women seemed to support the hypothesis of other mechanisms for angina-like chest pain.

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The Underlying Disease State As The Main Modifier Of The Relationship Between Inflammatory Status And The Release Of sCD40L In Coronary Atherosclerosis

D. Tousoulis[1], C. Antoniades[1], C. Tentolouris[1], A. Nikolopoulou[1], K. Marinou[1], N. Koumallos[1], K. Koniari[1], C. Vasiliadou[1], E. Stefanadi[1], C. Stefanadis[1]. [1]*UNIVERSITY OF ATHENS*

Background: The soluble form of CD40-ligand is released from activated platelets during the acute phase of myocardial infarction (AMI). Although sCD40L is considered to be part of the physiological immune response, the mechanisms regulating its release in different disease states remain unknown. **Methods:** This study enrolled 596 subjects: 201 pts with stable coronary artery disease (CAD), 109 pts with AMI (recruited by their admission to the hospital) and 286 healthy controls. Circulating sCD40L, interleukin 6 (IL-6), vascular cells adhesion molecules (sVCAM-1) and intercellular adhesion molecules (sICAM-1) were measured. **Results:** Patients with AMI had significantly higher levels of sCD40L (18.8$\pm$1.2 ng/ml) and IL-6 (9.1$\pm$0.5pg/ml) compared to CAD (7.0$\pm$0.5 ng/ml and 5.0$\pm$0.4pg/ml $p<0.01$ for both) or controls (4.6$\pm$0.2ng/ml and 2.1$\pm$2.3pg/ml $p<0.01$ for both vs CAD or AMI). Similarly, SICAM-1 and sVCAM-1 levels were higher in CAD (316$\pm$8 and 753$\pm$39 ng/ml) and AMI (360$\pm$18 and 806$\pm$52 ng/ml) compared to controls (287$\pm$6.5 and 631$\pm$270 ng/ml, $p<0.05$ for both vs CAD and AMI). IL-6 was the only independent predictor of sCD40L in healthy individuals (β(SE):0.491(0.096), p=0.0001). However, in CAD or AMI, only diabetes mellitus (β(SE):2.689(1.082), p=0.044 and β(SE):10.406(3.215), p=0.002 respectively) and smoking (β(SE):3.470(1.111), p=0.002 and β(SE):9.694(2.478), p=0.0001 respectively) (but not IL-6), were independently associated with sCD40L. **Conclusions:** IL-6 is an independent predictor of sCD40L levels in healthy individuals. However, diabetes mellitus and smoking (but not IL-6 or adhesion molecules) are the only independent predictors of sCD40L levels in CAD and AMI patients. These findings suggest that the complex interaction between proinflammatory cytokines and sCD40L release is largely dependent on the underlying disease state.

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Value of Myocardial Performance Index in Evaluation of Patients with Hepatoesplenic Mansonic Schistosomiasis

V T Carvalho[1], **MM Barbosa**[2], LCS Silva[3], JR Lambertucci[4]. [1]*Tropical Medicine Post-Graduation Program, UFMG, Belo Horizonte, Brazil* [2]*Ecocenter, Socor Hospital, Belo Horizonte, Brazil* [3]*Tropical Medicine Post-Graduation Program, UFMG, Belo Horizonte, Brazil* [4]*Tropical Medicine Post-Graduation Program, UFMG, Belo Horizonte, Brazil*

Introduction: The real prevalence of cor pulmonale in hepatoesplenic schistosomiasis (HMS) has not been well established, with clinical and histological studies showing discordant findings. Myocardial performance index (MPI) analyzes both systolic and diastolic function of both ventricles, and has been well validated in many diseases that course with right ventricular involvement, but not in HMS. **Aims:** In the present study, we investigated if MPI could predict pulmonary arterial hypertension (PHA) in patients with HMS. **Methods:** 44 patients diagnosed to have HMS (40 $\pm$ 13 years, 30 male) underwent a comprehensive Doppler echocardiogram with color flow mapping. MPI was obtained in all. Pulmonary artery systolic pressure was calculated using the tricuspid regurgitation maximal velocity to calculate right ventricle/right atrial systolic gradient (RVRAG). A RVRAG $\geq$ 30 mmH, indicative of a pulmonary systolic pressure of at least 35 mmHg, was considered indicative of PAH. Spearman's test was used to evaluate the association between right ventricular MPI and RVRAG. A ROC curve was also built to obtain the best myocardial performance cut-off index that could predict a RVRAG $\geq$ 30 mmHg. **Results:** Right ventricular MPI correlated with the RVRAG (r=0.587, p=0.01). The area under the ROC curve was 0.86; a right ventricular MPI $\geq$ 0.29 was able to predict a RVRAG $\geq$ 30 mmHg (indicative of PAH), with a sensitivity of 81% and a specificity of 80%. **Conclusion:** Right ventricular MPI showed significant correlation with RVRAG and was able to predict PAH in HMS.

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Low-Dose Atorvastatin Treatment Suppresses Inflammatory And Thrombotic Processes During Post- STEMI Period

C. Tentolouris[1], D. Tousoulis[1], C. Antoniades[1], V. Katsi[1], E Bosinakou[1], A. Antonopoulos[1], K. Marinou[1], P. Aggelopoulos[1], E. Stefanadi[1], C. Stefanadis[1]. [1]*UNIVERSITY OF ATHENS*

Background : ST elevated acute myocardial infarction (STEMI) is accompanied by increased expression of interleukin 6 (IL-6), tumor necrosis factor alpha (TNF-a), and soluble vascular cell adhesion molecule (sVCAM-1), as well as increased thrombogeneicity. Aggressive statins treatment reduces mortality in patients with STEMI, but the effect of low-dose atorvastatin on inflammation and thrombogeneicity in these patients, is unknown. **Methods.** Twenty four patients with STEMI were randomly allocated into 2 groups to receive atorvastatin 10 mg/day (n=12, ATR) or no statin (n=12, controls) for 6 weeks after the incident. Serum IL-6, TNF-a and sVCAM-1, and plasma antithrombin III (ATIII) and proteins S (prtS) and C (prtC), were measured at baseline, the 1st and 6th week after admission. **Results:** Baseline, levels of IL-6, TNF-a, sVCAM-1, ATIII, PrtS and PrtC were not significantly different between ATR (7.7$\pm$0.7 pg/ml, 2.2$\pm$0.3 pg/ml, 455$\pm$43 ng/ml, 79.3$\pm$4.0%, 92.1$\pm$5.6% and 94.2$\pm$5.3% respectively) and control group (6.09$\pm$1.01 pg/ml, 2.45$\pm$0.29 pg/ml, 496$\pm$34 ng/ml, 68.6$\pm$3.1%, 92.1$\pm$7.8% and 89.2$\pm$4.9% respectively, p=NS for all). At the 1st week after admission, IL6 was slightly but not significantly increased increased in both ATR (7.6$\pm$0.8pg/ml p=ns) and controls (6.82$\pm$1.02pg/ml p=ns), while it was significantly decreased at 6 weeks only in ATR (4.7$\pm$0.8pg/ml $p<0.05$ vs baseline) but not in controls (4.18$\pm$1.38 p=ns). sVCAM-1 was significantly increased at the 1st week in controls (552$\pm$40ng/ml $p<0.05$ vs baseline) but not in ATR (438$\pm$24 ng/ml p=ns), although it returned to baseline in both controls (546$\pm$71ng/ml p=ns vs baseline) and ATR (445$\pm$56ng/ml p=ns vs baseline) at the 6th week. Although ATIII was increased at 6th week in controls (to 78.9$\pm$2.2% $p<0.05$ vs baseline), it was almost doubled in ATR (157.7$\pm$7.66% $p<0.01$). Plasma PrtS and PrtC remained unaffected in both groups throughout the study period. **Conclusions.** Low dose atorvastatin treatment decreases inflammatory process and induces antithrombotic mechanisms, during the first 6 weeks after an STEMI, in patients with low cholesterol levels. These findings imply that even low-dose statin treatment may modify important pathways and affect the outcome of patients during the post-infarction period.

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Homocysteine Variations Induce Endothelial Dysfunction By Activating Endothelin-1 Pathway In Hypertensive Patients

D. Tousoulis[1], G. Bouras[1], C. Antoniades[1], K. Marinou[1], C. Tentolouris[1], C. Vasiliadou[1], A. Antonopoulos[1], E. Stefanadi[1], P. Aggelopoulos[1], C. Stefanadis[1]. [1]*UNIVERSITY OF ATHENS*

Background: Endothelin-1 (ET-1) is a key regulator of arterial blood pressure in humans, and homocysteinemia is associated with increased oxidative stress. It is still unclear whether homocysteine-induced oxidative stress is implicated in the regulation of ET-1 expression. We examined the impact of acute homocysteinemia on endothelial function in hypertensive patients and healthy individuals, and the potential role of ET-1. **Methods:** In this double-blind placebo controlled study, 35 hypertensive subjects and 30 healthy volunteers underwent methionine-loading (100mg met/Kg BW) after they received vitamins C (2g) plus E (800IU) (16 hypertensives (HTN+vit) and 15 healthy (C+vit)) or placebo (18 hypertensives (HTN+placebo) and 15 healthy (C+placebo)). Endothelial function was evaluated by gauge-strain plethysmography (to determine endothelium dependent dilation (EDD)), at baseline and 4 hours post loading (4hPML). ET-1 and lipid hydroperoxides (per-ox) levels were measured by ELISA. **Results:** Homocysteine was similarly increased in both hypertensives (by 22.2$\pm$1.26μM $p<0.0001$) and healthy controls (by 23.2$\pm$2.22 μM, $p<0.0001$), and was not affected by pre-treatment with antioxidants. EDD was significantly decreased in HTN+placebo (75.4$\pm$11.5 to 51.6$\pm$7.3%, $p<0.05$) and C+placebo (96.7$\pm$9.6 to 52.2$\pm$6.5%, $p<0.0001$), while antioxidant treatment did not prevent this effect in either HTN+vit (76.4$\pm$8.8 to 53.7$\pm$7.8%, $p<0.01$) or C+vit(86.6$\pm$10.5 to 41.1$\pm$6.3%, $p<0.001$). Importantly, ET-1 was increased 4hPMLonly in hypertensive individuals (HTN+placebo: 1.09$\pm$0.3 to 1.40$\pm$0.4pg/ml, $p<0.05$) an effect not prevented by antioxidants (HTN+vit: 0.82$\pm$0.08 to 1.1$\pm$0.09pg/ml $p<0.01$). Per-ox were significantly decreased in the HTN+vit (170[65–368] to 148[98–372]pg/ml, $p<0.05$) but not in the HTN-placebo (170[65–268] to 148[98–372]pg/ml, p=NS). No effect of methionone-loading was observed on ET-1 levels in healthy individuals (C+placebo: 1.96$\pm$0.84 to 1.87$\pm$0.77pg/ml and C+vit: 3.59$\pm$1.35 to 2.84$\pm$1.15pg/ml, p=NS). **Conclusions:** Experimental homocysteinemia rapidly blunts endothelial function in both hypertensive subjects and healthy individuals. The rapid elevation of ET-1 levels observed only in hypertensives, suggests that the ET-1 may be the key mediator of homocysteine-induced endothelial dysfunction, independently of oxidative stress status.

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Role of Telemedicine for the Detection of ST-segment Elevation Acute Myocardial Infarction

F. C. Cura, Fernando , R. L. Levi, Regina, L.V. Verruna, Leticia, A.S. Szyszko, Ariel, M.F. Farias, Marcelo, F.O. Olejnik, Francisco, N.V. Navarro Victor, D.D. Drago, Daniel, J.E. Estrella, Javier. *[1]Telemedicina ITMS [2]Telemedicina ITMS [3]Telemedicina ITMS [4]Telemedicina ITMS [5]Telemedicina ITMS [6]Telemedicina ITMS [7]Telemedicina ITMS [8]Telemedicina ITMS [9]Telemedicina ITMS*

Introduction: Early and accurate diagnosis of patients with ST-elevation myocardial infarction (STEMI) is critical to reduce time to reperfusion and improve prognosis. The use of telemedicine with electrocardiogram (ECG) assessment may improve the diagnosis accuracy, collaborate in the early management and intercommunicate between the primary practitioner and tertiary hospital. **Objectives:** The aim of this study is to show the effectiveness of early diagnosis of STEMI using telephone transmission of standard 12-lead ECG from remote geographic areas with general practitioners. **Methods:** A standard 12-lead electrocardiogram (ECG) is recorded in patients with ischemic symptoms and is transmitted through regular telephone to a 24/7 centralized telemedical system. Paramedic personal receives the emergency call, collects pre-specified clinical data and verifies the technical quality of the ECG tracing. Then, the ECG is assessed by the expert cardiologist, re-transmitted with the diagnosis using fax or e-mail to the site and a telephone contact is established with the remote physician. **Results:** Since December 1, 2006 to September 30, 2007, 85 blinded dedicated ECG equipments were distributed across Argentine. From a total of 7249 transmitted ECGs, 55 patients had ischemic symptoms and ST-segment elevation myocardial infarction. Demographic characteristics were as follows: age 60.5/11.2 y/o, 63% male gender, 65% with hypertension, 14% of diabetics and 22% of smokers. The rate of anterior location of the STEMI was 51%. Routine telephone contact with the general practitioners was established in every case for early advice and management. **Conclusions:** Telemedicine has the potential role of early detection of patients with STEMI in remote geographic areas with general practitioner and collaborate in the early management of this high-risk group of patients.

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PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH ATRIAL FIBRILLATION. ANTITHROMBOTIC THERAPY AND BASELINE CLINICAL CHARACTERISTICS ANALYSIS.

J.M. Ruiz-Nodar[1], T.A. Brouzet[1], J. Hurtado[2], J. Valencia[1], J.R. Jimeno[2], J. Pineda[1], M. Valdés[2], F. Sogorb[1], G.Y.H. Lip[3], F. Marín[2]. *[1]HOSPITAL GENERAL UNIVERSITARIO DE ALICANTE. ALICANTE. SPAIN. [2]HOSPITAL VIRGEN DE LA ARRIXACA. MURCIA SPAIN. [3]CITY HOSPITAL. BIRMINGHAM. UNITED KINGDOM.*

Purpose: Actual guidelines don't resolve the problem of the antiplatelet therapy in patients with atrial fibrillation (AF) who undergoes percutaneous coronary intervention (PCI). At the time to decide this kind of treatment there are many variables in consideration like the embolic, thrombotic and bleeding risks and the stent type. We analyzed the baseline clinical characteristics of this population and the variability of the antithrombotic treatment at the discharge. **Methods:** In this retrospective, multicenter and international study, 426 patients admitted between 2001 and 2006 were included. The principal variables analyzed were the baseline clinical characteristics, thrombotic risks factors, antithrombotic therapy before the PCI and at the discharge, the AF type and the implanted stent type. **Results:** The mean age was 72±9 and 71% was male. 60.4% had permanent AF. Of the whole cohort, 75% of the patients were hypertensive, 40% were diabetics, 14% had renal failure, 16% had a stroke episode previously, 27% had heart failure and 44% had isquemic events. At the time of the admission, 36% of the patients were taking aspirin and 50% was anticoagulated. The most frequent indication of PCI was non-ST elevation acute coronary syndrome (64%) follow by the ST elevation myocardial infarction. (20%). 59% had multivessel disease and in 60.2% of the cases the revascularization was complete. In the 40% of the cases at least one drug-eluting stent was implanted. The most frequent antiplatelet therapy at the discharge (50%) was the triple therapy (aspirin, clopidogrel and acenocumarol), follow by the combination of aspirin and clopidogrel (40.7%), acenocumarol and clopidogrel (3.7%) and only one antiplatelet drug (either aspirin or clopidogrel) in 3.6%. **Conclusions:** Patients with AF treated with PCI represent a high risk population because of his high age, comorbidity and the embolic risks factors. There are not coordinated strategies for the thrombotic and embolic events prevention.

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CASE REPORT: ASSOCIATION OF 2 VERY UNCOMMON PATHOLOGIES IN THE SAME PATIENT

C Stringi[1], S Pereiro Gonzalez[2], M Masuelli[3], A Bordenave[4], A Crespo[5], G Sumay[6], B Nadinic[7], C Poliserpi[8], J Modenesi[9], S Chekherdemian[10]. *[1]HOSPITAL CHURRUCA [2]HOSPITAL CHURRUCA [3]HOSPITAL CHURRUCA [4]HOSPITAL CHURRUCA [5]HOSPITAL CHURRUCA [6]HOSPITAL CHURRUCA [7]HOSPITAL CHURRUCA [8]HOSPITAL CHURRUCA [9]HOSPITAL CHURRUCA [10]HOSPITAL CHURRUCA*

We describe a patient with Brugada's Syndrome (BS) who had sincopal episodes and the finding of a rare coronary fistula (CF) connecting Anterior Descendent artery (AD) to the main Pulmonary artery (PA) which was discovered during the coronary angiography (CA) for the evaluation of the arrythmogenic disease. This rare entity can cause syncope in a few number of patients and the therapeutic conduct is controversial in asymtomatic young adults. **Case Report.** A 30-year-old male with risk factors (obesity, dislipidaemia, sedentary) dysnea FC I-II since 3 months ago that was admitted due to a sincopal episode preceded by palpitations. The electrocardiogram (ECG) revealed sinus rhythm, 50 bpm and a typical Brugada's pattern in right prechordial derivations. Ajmaline test was positive with an episode of ventricular bigeminia after isoproterenol infusion. An exercise test on a treadmill evidenced frecuent ventricular extrasistolia in the immediate post exercise. In a 24 hs holter didn't appear any anormal rhythm. ECG showed a right ventricle with regional motility alteration and a mild pulmonary regurgitation with diastolic flow in the pulmonary artery trunk. Right ventricular arrythmogenic displasia was dismissed with a magnetic resonance (MR). With the suspicion of a coronary illness a CA was performed: angiographic coronary lesions weren't evidencied but this study revealed a CF arising from the proximal AD coronary artery draining into the PA. For a better evaluation a 64-multislice CT was developed. It evidenced the CF connecting the anterior conal artery (emerging from AD) to the pulmonary trunk (1.6mm over the valvular plane). A Tc99Sestamibi myocardial perfusion didn't show ischaemic signs. An expectant conduct was taken in relation to the fistula according to these findings and the age of the patient. The patient evolutioned with 2 new sincopal episodes with autolimited ventricular arrhythmia in the ECG. An automated implantable cardioverter-defibrillator (ICD) was indicated without complications and he was externed. Three weeks later the patient was readmitted in Cardiology because he had two electric shocks (one of them with syncope) due to multimorphe ventricular tachycardia (evidenced at the ICD interrogatory). These 2 entities have a very low prevalence: for the Brugada's Syndrome the incidence could vary from 0.0006% in children and teenagers up to 0.05% in adult population. The coronary fistulae represents 4% of congenital cardiopathy and these use to be an incidental finding in the 0.6–1.5% of the angiographic studies during the coronary illness evaluation. Syncope has been reported in a few patiens due to a "vascular steal" mechanism (angor and heart failure are the most common presentation way) and the closure with invasive procedures may be indicated. These defects have been relationed with atherogenic illness development because of blood flow disorders, with subsecuent infarction risk. In our patient the episodes are now clearly adjudicated to the BS but the angiographic anomaly performed as a "distractor" during the patient evaluation. To the best of our knowledge, the presence of these two patologies in a same patient has not been reported up to date.

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Value of TIMI risk Score for predicting mortality and major clinical events in patients with STEMI that underwent Percutaneus Coronary Intervention on admission to hospital.

I. Santos-Rodriguez[1], M.J. Ruiz-Olgado[1], V. Ramirez-Castro[1], J. Rodriguez-Collado[1], M. Cascon-Bueno[1], A. Perez-Bueno[2], V. Leon-Arguero[1], I. Cruz-Gonzalez[1], F. Martin-Herrero[1], M. Diego-Dominguez[1]. *[1]Department of Cardiology, University Hospital. [2]Faculty of Biology. University of Salamanca.*

Background: Thrombolysis in Myocardial Infarction (TIMI) risk score is a simple validated integer score for predicting 30-day mortality on admission to hospital of fibrinolytic eligible patientes with STEMI. **Objective:** To evaluate the TIMI risk score as a univariate predictor of mortality and Major Clinical Events (MACE: mortality, Miocardial infarction-MI, or new coronary artery revascularization-CAR) in patients with STEMI that underwent primary, rescue or elective Percutaneus Coronary Intervention(PCI) on admission to hospital. Mean patient follow-up was 17 months. **Methods:** TIMI risk score was calculated as the arithmetic sum of eight variables (age, systolic blood pressure, heart rate, Killip class, weight, anterior ST-segment elevation, time from symptom-onset to treatment and history of angina, diabetes, or hypertension) weighted according to its independent predictor value. 233 patients with STEMI were treated with primary (59%), rescue (23%) or elective ischemic or ventricular disfunction guided (18%) angioplasty on admission to hospital. For a possible score of 0 to 14, we applied the TIMI risk score to clasify patients as low (≤5points) or high risk (>5points). Time to treatment was defined as time from symptoms onset to first balloon inflation in the case of primary or rescue angioplasty, and time to onset of fibrinolysis in the case of elective angioplasty after fibrinolysis. **Results:** The mortality cause was non-cardiovascular in 3 cases y cardiovascular in 23 patients (heart failure 18, MI 3,CVA 1 and sudden death 1 case), **Conclusions:** In patients with STEMI treated with PCI, the TIMI risk score is a good predictor of mortality (heart failure mainly) but it does not predicts of new myocardial infarction or revascularization

	Total(n 233)	Low Risk(n131)	High Risk(n102)	P-value High/low risk
Age	65±13	61±12	70±12	0,000
Male/Female%	82/18	89/11	72,5/27,5	0,001
History of infarction%	7	5	10	<0,3
Hypertension%	53	44	64	0,001
Diabetes%	24	19	29	<0,07
Smoking%	34	43	23	0,001
Hypercolesterolemia%	46	55	35	0,008
STEMI location A/I%	49/48	44/53	57/41	<0,2
PCI P/R/E%	59/23/18	57/21,5/21,5	63/25/12	<0,3
PCI %(1/2/3v)	85/12/3	85/13/2	85/10/5	<0,5
PCI location%(LAD/LC/RC/LM)	52/12/35/1,3	47/13/39/0,8	59/10/29/2	0,3
Complete Revascularization%	61	68	53	0,02
Follow-up months	17±10	18,9±9	14,9± 10,7	0,003
MACE n(%)	46(20)	13(10)	33(32,3)	0,000
- New CAR n(%)	21(7)	13(10)	8(8)	0,5
- MI n(%)	14(6)	7(5)	7(7)	0,3
- Mortality n(%)	26(11)	2(1,8)	24(25)	0,000
17m Kaplan-Meier survival%	79	89,5	67	0,000

LAD=left anterior descending, A/I: Anterior/Inferior; RC:right coronary, LC: left circunflex artery. LM: left main coronary. P/R/E: Primary/Rescue/Elective.

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Postgraduate and Systematic Distance Learning Experience in Cardiology

R. Ortego[1], A. Pacher[1], S. Berman[1], T. Bertuzzi[1], A. Carli[1], B. Kennel[1], R. Lombardo[1], S. Nanfara[1]. *[1]Argentine Federation of Cardiology-FAC and Bioengineering-National University of Entre Ríos-FIUNER. Argentina*

One of the principal targets of the Argentine Federation of Cardiology (FAC) is the promotion of learning and update in Cardiology. The Centre of Medical Teleinformatic of the FAC, CETIFAC,

has been working since 1998 in distance learning environments (DLE) on the Internet using Linux based open source and free software. The 1st Virtual Congress of Cardiology (www.fac.org.ar/cvirtual) was an original experience. DLE on cardiologic postgraduate issues, have many pedagogical difficulties. Most Cardiologists do not have enough time for training in DLE, even those who are teaching in a traditional way. On the other side, it is quite frequent in postgraduate update to convoke some people requiring specific expertise. The focus is on teaching more than on learning and neither feedback from the students nor pedagogical backgrounds from the experts are of great concern. Looking to improve DLE, CETIFAC began to work with MOODLE (Modular Object-Oriented Dynamic Learning Environment) in 2005 for a Virtual Campus (VC) platform (www.fac.org.ar/moodle). MOODLE is an open source free Course Management System (CMS) software, copyright from Martin Dougiamas under the GNU-GPL (GNU-General Public License). MOODLE offers two ways of learning: resources and activities. Resource means classic forms of teaching: texts, audiovisual presentations, and the like. Activity means ways of interacting among learners and teachers: forums, questionnaires, lessons, to mention some. CETIFAC has offered and developed 3 courses and 3 clinical consensuses in the VC since June 2006. The courses were "Basic Biostatistics for Health Care Physicians", "Some Aspects of Epidemiologic and Cardiovascular Prevention" and "Research Methodology". The consensuses were "Venous Thromboembolism", "Cardiopulmonary Resuscitation" and "Cardiovascular Interventionism". The term course is used in a restrictive way. A course means that the learning process has a scheduled program with resources but must have many activities with real learner-teacher interaction. A course must focus on learning. Clinical consensus is a set of resources tending to obtain the state of the art on a particular issue. A consensus focuses on making guidelines. 17 teachers have participated in the courses and 64 experts in consensuses. 1067 people have registered like VC users up to now. They are from Argentina and other countries; 97 of them have taken the courses and 1017 have entered the consensuses. Interaction with the learners is a goal for DLE and it requires skilled people. It has been very hard to obtain a real and fruitful interaction between teachers and learners, since it is a challenge by itself to provide learners feedback with guest teachers in DLE. The appropriate use of CMS, such as MOODLE, means people who have the will and the time to train. It is improbable that occasional teachers accept to learn the aspects of the CMS. Distance education trained teachers are needed in DLE, which is more demanding than conventional teaching and therefore different.

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Expanded Clinical Indications for a Tissue Engineered Blood Vessel

L. M. De La Fuente[1], S. Garrido[1], A. Marini[1], J. Antonelli[1], A. Fiorillo[1], A. Kocher[2], I. Gasperovich[2], N. Dusserre[2], T. McAllister[2], N. L'heureux[2]. *[1]Instituto Argentino de Diagnostico y Tratamiento, Buenos Aires, Argentina [2]Cytograph Tissue Engineer Inc. San Francisco, CA, U.S.A.*

Background: We have developed a completely autologous tissue engineered blood vessel (TEBV) using a process called sheet-based tissue engineering. In this approach, we depart from the usual tissue engineering strategy by eliminating the need for synthetic scaffolds. Instead, cells are cultured in conditions that promote the production of matrix proteins such that the cells themselves assemble the proteins which form the mechanical backbone of the graft. In initial clinical trials, we implanted the TEBVs as arterio-venous shunts for hemodialysis access in patients with end stage renal disease. In this indication, the grafts were able to withstand multiple punctures, and demonstrated patency at time points beyond 12 months. Incidence of aneurysm and thrombogenic events compared favorably with ePTFE. In an effort to justify evolution to coronary use, we have further expanded our mechanical testing to include dynamic fatigue, low pressure static fatigue, and step-wise fatigue testing. Based on these test results, we have expanded enrollment indications to include lower limb revascularization and radial artery replacement when the radial is harvested for coronary use. **Methods:** TEBVs were built from cells harvested from patients with advanced cardiovascular disease as described previously. Ten to Fourteen vessels were grown for each patient. Static fatigue tests were run by pressurizing the vessels to 250 mmHg for 5 days and then increasing pressure to burst. Dynamic fatigue testing was performed by cycling the pressure between either 120/80 or 600/400 mmHg for 14 and 3 days respectively (1 Hz). Vessels were then pressurized to burst. Step-wise fatigue testing was performed by pressurizing internal membranes (TEBVs with only 3 decellularized plies) at 1200 mmHg for 15 minutes and then increasing pressure in 200 mmHg increments until failure. At each pressure level, the pressure was held for 15 minutes or until burst. Results are reported as a summation of the time multiplied by the pressure until failure. **Results/Discussion:** Previously we reported that human TEBVs built from cells harvested from an age and risk matched population demonstrated burst pressures in excess of 3000 mmHg. It was unclear, however, how these grafts would perform in in vitro fatigue testing where the grafts were subjected to lower pressures, but held (or cycled) over long periods of time. We demonstrated that graft burst pressure did not diminish significantly after fatigue loading relative to controls that were maintained in static conditions (2346 +/- 404mmHg n=4 versus 2602 +/- 202mmHg, n=3, respectively). We further demonstrate that internal membranes tolerate 13,800 mmHg-minute step-wise fatigue strength. These results demonstrate that the tissue engineered blood vessels withstand supraphysiological burst pressures where pressures are increased rapidly until failure. Moreover, we demonstrate that lower pressure fatigue testing does not significantly alter burst pressures, suggesting that the rapid burst test is, in fact, an excellent predictor of in vivo performance. These mechanical results, coupled with positive initial results in peripheral indications, would appear to support coronary use. We will report updated results in lower limb and coronary bypass models

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Ambulatory Blood Pressure Monitoring In Hypertensive Offsprings

J. Knopfholz[1], A. Ribeiro Langowiski[2], E. Lima Junior[1], A. Reichert[1], M. Oliveira Nogueira[1], L.C. Guarita-Souza[1]. *[1]Pontifícia Universidade Católica do Paraná (PUCPR) [2]Irmandade Santa Casa de Misericórdia de Curitiba*

Background: Recognizing populations with risk factors for arterial hypertension is important because early control of vascular damage may be performed. The aim of this study is to evaluate blood pressure monitoring (BPM) in hypertensive offsprings. **Methods:** We evaluated BPM Bdata in 31 students, aged between 17 and 25, whose parents were in treatment for hypertension (group I) and in 30 normotensive subjects, whose parents were not hypertensive individuals (group II). Epidemiological date were collected from all participants. **Results:** There were no statistical difference between both groups comparing the mean systolic blood pressure (SBP) (p=0,195) and mean diastolic blood pressure (DBP) (p=0,958), SBP dropping (p=0,61) and DBP dropping (p=0,289), SBP charges (p=0,314) and DBP charges (p=0,475), SBP variabilty (p=0,24) and DBP variability (p=0,497). There were statistical difference in the pulse pressure (p=0,032) and in the minimum SBP during the awakening period (p=0,048), greater in the group II. **Conclusion:** In this population, there were statistical difference in pulse pressure and in minimum SBP during the awakening period. There were no difference between the two groups in other analysed data. Therefore, blood pressure monitoring may not be considered a reliable method for predicting future hypertension. Keywords: arterial hypertension; hypertensive offspring; blood pressure monitoring

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Continuous Activity in Telemedicine Focused on Teaching Cardiology

A. Pacher[1], R. Lombardo[1], R. Ortego[1], E. Schapachnik[1], S. Eskenazi[1], S. Nanfara[1], J. Sanagua[1], M. Heñin[1], S. Berman[1], Pcvc Group[1]. *[1]Argentine Federation of Cardiology-FAC and Bioengineering-National University of Entre Ríos-FIUNER. Argentina*

Argentine Federation of Cardiology - FAC, through its Centre of Medical Teleinformatic - CETIFAC has maintained a continuous activity on telemedicine using Internet as an educational tool since 1998 (www.fac.org.ar). CETIFAC was created in 1994 by an agreement between FAC and Bioengineering of National University of Entre Ríos to improve cardiologic postgraduate education in Argentina. CETIFAC human resources are twenty moderators who work pro bono (PCVC group) and three staff members. Two Linux servers are owned by FAC. Main educational activities are virtual congresses on cardiology - VCC, Forum on Continuous Education on Cardiology - FECC and Virtual Campus. VCC were developed in 1999, 2001, 2003, 2005 and 2007 (the last being currently developed). All the conventional activities of a medical congress are provided including lectures, symposia, courses, brief communications and forums. Activities for physicians, nurses, technicians and the general public are organized. English, Spanish and Portuguese are the official languages. Forums are moderate and messages are translated and distributed in three languages. For subscribers in countries without free access to the Web (e.g.: Cuba), FTPMail system has been configured so that they can request and receive all kinds of digital files by e-mail. Each VCC has had an increasing number of participants and countries. Therefore, the 1st had (participants/countries) 7,574/75, the 2nd 11,700/107, the 3rd 13,638/122, the 4th 18,155/128. The 5th VCC (www.fac.org.ar/qcvc), in progress, which started on September 1st, had on October 13th, 22,265 participants from 133 countries (being the first ten countries Argentina/8021, Spain/1946, Peru/1608, Cuba/1565, Mexico/1429, Brazil/1426, Colombia/899, Uruguay/755, Venezuela/605, USA/573). In the interval between congresses, the activities continue in Spanish through the FECC and the Virtual Campus. FECC activities consist of clinical rounds, case discussions, bibliographical guides, thematic updating, symposia, courses, self-assessment and accreditation activities. Forums have nearly 9,000 subscribers with an average of 422 per forum. Virtual Campus (www.fac.org.ar/campus) started in 2005 using Course Management System Moodle as platform and up to now has developed 3 courses and 3 consensuses. Campus users are 1,067 from 26 countries (being the first ten Argentina/645, Peru/70, Cuba/47, Mexico/45, Colombia/44, Spain/38, Uruguay/25, Venezuela/23, Ecuador/18, Brazil/17); 97 people have taken the courses and 1,017 have entered the consensuses. These activities began to improve cardiologic postgraduate education in Argentina and have been sustained. Nowadays, they reach people from other Spanish-speaking countries. They have become a distance-learning environment which is much more than an exchange of medical information on the Internet.

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ENDOTHELIAL FUNCTION IN RESPONSE TO ORAL LIPIDS AND POSTPRANDIAL LIPEMIA

C. Ponte- N[1–2], O. Sanchez[1], R Melendez[1], J Isea-P[1–2], J Feijoo[1], J Gomez-M[1]. *[1]Cardiology service, Hospital "Domingo Luciani" Caracas.Venezuela [2]2Fundación Venezolana de Cardiología Preventiva*

Purpose: To determine grades of modifications, if any, after a charge of standard oral lipids on endothelial function, in subjects with atherosclerotic risk factors, we designed a randomized, prospective, double-blind, placebo-controlled study. **Methods:** Population:One hundred one subjects between 25 and 65 years old from preventive cardiovascular external consult, after signed a consent form, a forearm ultrasonography reactive hyperemia test (RHT) was performed for estimating basal endothelial function, RHT was made with a 7,5 MHz vascular transducer to determine brachial artery diameters with the electrocardiogram R wave before and after 5 minutes of external brachial artery occlusion above the left antecubital fossa with the sphygmomanometer cuff. The change in diameter cause by flow-mediated dilatation was expressed as the percent change relative to that at the initial resting test. Simultaneously blood determination of fasting plasma lipids: tryglicerides (T), Total cholesterol (TC), LDL cholesterol (LDL-C) and HDL cholesterol (HDL-C) was performed. Then the subjects take an standard rich lipid meal (two eggs, 20 gr of butter, bacon, bread and a cup of milk). RHT and plasma lipids were made at three hours from de meal intake. **Results:** We divided the subjects in three groups: those with two or less risk factors (group A); subjects with three or more risk factors (group B); and subjects with coronary heart diseases or equivalents (group C). A proportional and significant statistical relation between the number of risk factors and the test of endothelial function was found. more risk factors, lesser diameter of brachial artery in response to its occlusion (p=0,05 group B) (p<0,001 group C). 100% of the individuals of group B with LDL-C less than 160 mg/dl, with a global risk of 10% or less but with an post prandial increase of Triglicerides of more than 75% presented an abnormal endothelial response (p:0,01) **Conclusion:** In this group of subjects we found a direct proportional relation between number

of risk factors and endothelial response. But in a group of patients with a global cardiovascular risk of 10% or less based on Framinghan score, an abnormal postprandial lipemia was associated with an abnormal endothelial response, these finding suggest that the measure of postprandial lipoptoteins can be an useful tool to discriminate patients with diferents global cardiovascular risk independent of the initial global risk stratification.

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Are Lateral or Postero-Lateral Veins The Optimal Site to Implant Left Pacing Leads? A study of 77 consecutive resynchronized patients

C. D'Ivernois[1], J. Lesage[1], A. Lagrange[1], P. Blanc[1]. [1]*Hôpital Universitaire Dupuytren, Limoges, France*

Background: Cardiac resynchronization therapy is a recognized treatment for severe heart failure. The main beneficial effect is by reducing left ventricular (LV) dyssynchrony. The recommended ideal LV lead position is in a lateral or postero-lateral coronary vein. However, LV leads cannot always be implanted at the expected site. The aim of our study was to compare the clinical response to resynchronization when the LV lead could be implanted in the initial target vein or not. **Method:** In consecutive resynchronized patients, we determined the LV lead success rate for the initial target vein, and the final position achieved by the tip of the LV lead in the left and the right anterior oblique projections. Patients were followed for 6 months after implantation. They were defined as responders if they had gained 1 NYHA class and had not been hospitalized for heart failure. **Results:** Seventy seven patients (56 men, 71 ± 10 years, 81% NYHA class III, 19% NYHA class IV) were implanted with a resynchronization device. The mean ejection fraction was 27 ± 8%. Coronary artery disease was present in 26%, 21% were in chronic atrial fibrillation, 19% were upgrades. The mean LV end-diastolic diameter was 69 ± 9 mm. The LV lead was implanted in the initial target vein in 56 patients (group A) and in another vein in 21 patients (group B). In group A, 80% of the leads were in a lateral or postero-lateral location versus 20% in an antero-lateral position. In group B, these were respectively 38% and 62%. At 6 months, 7 patients (9%) died (all in group A). The responder rate was 71% in group A compared to 90% in group B. **Conclusion:** The responder rate was surprisingly superior when the LV lead was not implanted in the initial target vein. Thus, a more anterior position of the LV lead might be better than the usually recommended lateral or postero-lateral. Further studies are required to confirm these findings.

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Echocardiographic evaluation of myocardial contractility in hypertensive left ventricular hypertrophy by a load-independent index

A. Tufare[1], E. Escudero[1]. [1]*Magister de Ultrasonido en cardiología. UNLP*

Introduction: Hypertensive left ventricular hypertrophy (LVH) is associated with increased cardiovascular risk and progression to congestive heart failure. There is controversial in published information about LVH systolic function. While studies in animals show contractility deterioration in isolated myocardial fiber, clinical studies found, by echocardiographic evaluation, normal or even supernormal systolic function. The use of echocardiographic indexes with low specificity and sensitivity like ejection fraction and endocardial fractional shortening, load dependent indexes, may explain this opposite findings. The purpose of this study was to assess LV myocardial contractility in patients with essential hypertension using a load independent index: LV end systolic wall stress (ESWS)-myocardial fractional shortening (MFS) relation. **Material and Methods:** 47 hypertensive subjects were included, 25 with LVH (LVH group) and 22 without LVH (N-LVH group), and 25 controls. Complete echocardiographic study was performed in all subjects calculating usuals systolic function indexes (ejection fraction, endocardial fractional shortening, MFS) and LV mass index, relative wall thickness (RWT) and ESWS. Simple linear regression was used to calculated ESWS extent of MFS equations in a control population. The index was obtained through the relation between the MFS observed by echocardiographic study and the MFS expected from each patient's ESWS and expressed as percentage (MFSo/MFSp). **Results:** There were no differences in MFSo/MFSp between the three groups, with a tendency to be lower in the LVH group (LVH:93,7±3,5%, N-LVH:103±4,2%, C:100±2,5% p ns). When we analized only patients with concentric LVH (RWT > mean±2SD of C group: 0,35+2*0,06) (n 16), we observed that LVH group with RWT > 0,47 showed significant lower MFSo/MFSp than N-LVH and C groups (90.9±4.1%, 103±4,2%, 100±2,5% p≤0,05), without differences in usuals LV systolic parameters. **Conclusions:** Hipertensive concentric LVH shows impairment of contractil function since early stages, not detected with usual parameters that not consider LV afterload.

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Drug-eluting-stent-based percutaneous coronary intervention for treatment of acute coronary syndrome with multivessel disease; Comparison of 'culprit-vessel-only' and complete revascularization

B. Hong[1], H. Kim[2], S. Yoon[1], M. Kim[1], H. Moon[1], Y. Yoon[1], P. Min[1], S. Rim[1], H. Kwon[1]. [1]*Yonsei University College of Medicine* [2]*Kosin Uninversity*

Purpose: We evaluate the efficacy of 'culprit-vessel-only' versus complete revascularization using drug-eluting stents (DES) for treatment of acute coronary syndrome (ACS) with multivessel coronary artery disease. **Methods:** We retrospectively analyzed 187 patients (mean age 60±11 years) of acute coronary syndrome with multivessel disease suitable for stent deployment. Patients were divided into two groups; group 1 (n=108) underwent percutaneous coronary intervention (PCI) for culprit vessel only with DES, and group 2 (n=79) underwent complete revascularization with at least two DES. The culprit vessel was defined by reviewing pateint's coronary angiogram, electrocardiogram, echocardiogram and/or nuclear stress test. MACE (myocardial infarction, CVA, or death) and the incidence of revascularization of culprit and non-culprit vessel(s) were evaluated. Mean follow-up duration was 26±21 months. **Results:** There was no significant difference of baseline clinical and angiographic characteristics between two groups, and there were no significant difference between two groups in MACE; 13 (11.5%) in group 1 and 6 (8.2%) in group 2 (p=0.695). In the rate of non-culprit vessel(s) revascularization, group 1 showed higher than group 2 (n=45 [60.4%] vs. 14 [29.7%], respectively, $p<0.001$), while there was no significant difference in the rate of culprit vessel revascularization (group 1; n=16 [21.3%], group 2: n=20 [33.9%]. $p=0.119$). **Conclusion:** Based on this study, in DES era, the complete revascularization including non-culprit vessel(s) suitable for PCI as well as 'culprit-vessel-only' revascularization should be positively considered for patients who present acute coronary syndrome with multivessel disease.

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Proarrhythmic effects of Flecainide during exercise stress test in coronary artery disease detecting

KG Adamyan[1], AV Astvatsatryan, AL Chilingaryan. [1]*Institute of Cardiology, Myocardial Infarction Department, Yerevan, Armenia*

It is widely known that in patients undergoing antiarrhythmic therapy, sustained exercise-induced ventricular tachycardia is associated with a high risk of sudden death, and exercise testing has been used to unmask proarrhythmic responses. It is also known that QRS widening on ECG (QRSW) during exercise stress test (ST) is an obvious mark of proarrhythmia phenomenon in patients (pts) receiving Flecainide (F). We wanted to use this phenomenon in coronary artery disease (CAD) detecting. **Methods:** 266 pts (female/male=81/185, aged 44.7 ± 22.7) with atypical chest pain and controversial ST after 3–5 days were undergone to second ST with taking F 400 mg PO before test. Pts who developed QRSW more than 25% from initial were considered as pts with CAD. Diagnostic coronary angiography was made all pts by specialists unaware of study aims. **Results:** 79 pts (29.7%) developed QRSW during ST with F, 187 pts (70.3%) did not. Significant coronary occlusion was revealed in 74 cases (27.8%). 69 (93.2%) of pts with QRSW and 5 pts (6.8%) without QRSW had CAD revealed by coronary angiography. 182 pts (94.8%) without QRSW and 10 pts (5.2%) with QRSW had not CAD. According received data sensitivity of ST with F is 93.2% and specificity 94.7%. **Conclusion:** QRSW during ST with F could be useful in CAD detecting when standard stress test fails to diagnose.

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Antioxidant spectrum changes due to trimetazidine treatment in patients with coronary artery disease and diabetes mellitus type 2. Experience in 44 patients

KG Adamyan[1], AV Astvatsatryan, AL Chilingaryan. [1]*Institute of Cardiology, Yerevan, Armenia*

The aninginal drug trimetazidine (T) shifts cardiac energy metabolism from fatty acid oxidation by inhibiting mitochondrial long-chain 3-ketoacyl coenzyme A thiolase. Treatment with T increases sarcolemmal mechanical resistance in reoxygenated myocytes. We supposed that T could influence on antioxidant spectrum in pts with coronary artery disease (CAD) and diabetes mellitus type 2 (DM2). **Methods:** 44 normotensive pts (female/male=14/30, aged 53.9±13.3 yrs) with 3.0±2.7 history of CAD without left ventricular dysfunction and DM2 were involved in the study. All pts were on standard anti-ischemic treatment as also on anti-DM2 diet and therapy with good metabolic control (HbA1c<7.5%). Antioxidant spectrum was estimated by: Erythrocyte Superoxide Dismutase (E-SOD; U/gHb), Erythrocyte Glutathione Peroxidase (E-GPx; U/gHb) activity and Plasma Total Antioxidant Status (P-TAS; mmol/l) with spectrophothometric determination. Plasma lipids: triglyceride, total cholesterol and HDL cholesterol were measured by enzymatic methods. Blood samples were taken before and one month after T therapy (60 mg/daily). **Results:** After initiation of T there were no marked changes in HbA1 and plasma lipid levels but E-SOD activity was significant increased by almost 42% (622±77.1 vs 847±91.1, p<0.03), although E-GPX and P- TAS were changed insignificantly. **Conclusion.** Trimetazidine seems to improve antioxidant spectrum in patients with CAD and DM2.

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Different Effect of DM and Other Cardiovascular Risk Factors on Circulating Monocyte Count in Patients with Stable CAD

S. A. Kocaman[1], A. Sahinarslan[1], T. Timurkaynak[1]. [1]*Gazi University School of Medicine, Department of Cardiology, Ankara, TURKEY*

Aim: In recent years, it has been recognized that atherogenesis is an active, chronic inflammatory process. Inflammation is a central critical feature of atherosclerosis and its clinical manifestations. Leukocytes, especially monocytes play a major role in this inflammatory process. The goal of this study was to evaluate the effect of cardiovascular risk factors on monocyte count in patients with stable CAD and normal subjects. **Methods:** We enrolled 159 consecutive patients admitted to our cardiology clinic for suspected or known CAD who underwent coronary angiography. The study population was divided into two groups; first group consisted of 98 patients with normal coronary arteries and the second group consisted of 61 patients with CAD. **Results:** In first group, monocyte counts were 436±110 vs 493±166 with or without diabetes mellitus (DM), respectively. In second group, the counts were 497±128 vs 568±183. Although monocyte count was higher in the atherosclerotic group compared to normal (p=0,021), DM decreased monocyte count in both groups significantly (p=0,030). Smoking increased monocyte count in both groups. The other risk factors did not have any effect on monocyte count (Table 1). **Conclusion:** In addition to attenuating the monocyte functions like other cardiovascular risk factors, DM unlike other risk factors, also depresses

their count. If monocytes have reparative functions in atherosclerosis in stable situations, decreased monocyte count in diabetics may explain why all reparative mechanisms are poor in this patient cohort. **Keywords:** Coronary artery disease; Diabetes mellitus; Risk factors; Monocyte count

TABLE 1: EFFECT OF CARDIOVASCULAR RISK FACTORS ON MONOCYTE COUNT

	NCA	(n=98)	CAD	(n=61)	*P	**P
Risk factors (0/1)	0	1	0	1		
DM	**493±166**	**436±110**	**568±183**	**497±128**	**0,021**	**0,030**
HT	495±165	463±146	512±182	559±168	0,056	0,860
Smoking	431±130	549±164	519±183	601±112	0,041	0,004
Family History	471±160	514±144	529±184	525±146	0,316	0,564
Gender (male)	445±127	517±177	571±151	540±158	0,003	0,416

Univariate analysis of variance. *p value - effect of atherosclerosis on monocyte count. **p value - effect of the risk factor on monocyte count. NCA: Normal coronary arteries CAD: Coronary artery disease DM: Diabetes mellitus HT: Hypertension

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Treatments and outcomes of acute myocardial infarction. A three year experience in a progressive care unit.

M. Perez[1], C. Martinez Sagasta[1], E. Brunel[1], E. Soloaga[1], G. Medina[1], J. Bori[1], C. Smith[1], A. Palazzo[1], M. Veltri[1], J. Ubaldini[1]. [1]*HOSPITAL BRITANICO DE BUENOS AIRES*

Background: Progressive care is a relative new concept in the management of critical care patients. We hypothesize that this model is at least as equally effective as the traditional coronary care unit in the management of acute myocardial infarction. **Objective:** to report procedures and outcomes of patients with myocardial infarction in a Progressive Critical Care Unit over a 3-year period. **Methods:** a prospective database of patients admitted from April 1999 to June 2002 in a Progressive Critical Care Unit was analyzed. **Results:** From April 1999 to June 2002, 245 patients with myocardial infarction were admitted. Mean age was 62.2 (33–95). In hospital mortality was 5.3%. The mean length of stay was 7.9 days. There were 126 percutaneous coronary interventions and 8 CABGs. From July 1999 to June 2000 the following variables were also analyzed (table) **Conclusion:** mortality and standard of care results of a progressive care unit in Argentina are comparable with the international registries performed in the same period of time.

Measure (%)	Rate (IC 95%)
ASA at arrival	98 (89–100)
ASA prescribed at discharge	98 (89–100)
ACEI for LVSD	100 (71–100)
Adult smoking cessation advice/counseling	84 (61–95)
Beta blocker at arrival	98 (86–100)
Beta blocker prescribed at discharge	100 (90–100)
Time to Thrombolysis * (min)	32 (8–79)
Time to PTCA * (min)	105 (86–184)

* continuous variable. Expressed in Median, 25th-75th Quartile

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Drug-eluting-stent-based percutaneous coronary intervention versus coronary artery bypass surgery for treatment of patients with multivessel coronary artery disease

B. Hong[1], **H. Mun**[1], N. Chon[1], M. Kim[1], C. Ahn[1], P. Min[1], Y. Yoon[1], S. Rim[1], H. Kwon[1]. [1]*Yonsei University College of Medicine*

Background; Drug-eluting stent(DES) constitutes a major breakthrough in prevention of in-stent restenosis after percutaneous coronary intervention(PCI). Some cardiologists assume that PCI using DES ought to be considered alternative strategy, if not superior, to coronary artery bypass surgery(CABS). We compared one year-outcome after DES implantation with that of CABS in patients with multivessel coronary artery disease(MVD). **Methods and Results**; From March 2004 to August 2006, 180 consecutive patients with MVD underwent complete revascularization in our single center (61 by PCI with DES, 119 by CABS). The primary end-point was major adverse cardiac and cerebrovascular event (MACCE) during follow-up period. Baseline characteristics showed somewhat meaningful differences in age (DES:58.7±10.5 vs. CABS :63.8±9.8, $p<0.01$), the presence of diabetes (DES :24.6% vs CABS :46.2%, $p=0.04$) and the rate of triple vessel involvement(DES :60.7% vs CABS :89.9%, $p<0.001$). In spite of these baseline demographic data, CABS showed significant lower rate of additive procedural needs for target or non-target revascularization (DES: 41.7% vs. CABS: 6.8%, $p<0.001$). In contrast, there were no significant differences in mortality, nonfatal myocardial infarction (MI), stroke (DES: 8.6% vs. CABS: 2.3%, $p=0.87$) and newly onset anginal attacks (DES: 36.1% vs. CABS: 23.1%, $p=0.177$) between two groups. **Conclusion**; In regards to MACCE after revascularization in patients with MVD, CABS seems to be reasonable including the lower rate of repeat target or non-target vessel revascularization. However, no significant differences were observed in one-year mortality, nonfatal MI and stroke between these groups in this study. The further randomized clinical trial will be necessary for discriminating in the superiority between two modalities.

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LEFT VENTRICULAR ROTATION AND TORSION AFTER ANTERIOR AND INFERIOR MYOCARDIAL INFARCTION.

M. Pinto[1]. [1]*Dpt.of Cardiology. Clinica Alemana de Santiago. Chile.*

LEFT VENTRICULAR ROTATION AND TORSION AFTER ANTERIOR AND INFERIOR MYOCARDIAL INFARCTION. Manuel Pinto, Gonzalo Alarcón, Álvaro Puelma, Rodrigo Ibañez, Roberto Aspee, Tatiana Leal, Eugenio Montaner. Department of Cardiology. Clínica Alemana de Santiago. Chile.

Background: Speckle Strain is a new clinical method to measure regional myocardial function with capabilities to assess rotation (Rot) and torsion (LVTor) of the left ventricle (LV). Anterior wall myocardial infarction (MI) most of the time is accompanied with regional wall motion abnormalities (WMA) in the LV apex and systolic rotation and LVTor are decreased. Purpose: We investigated if inferior MI with normal ejection fraction (LVEF) also has this kind of mechanical behavior. **Methods:** Apical and basal LV short axis images were acquired in 35 patients (pt) with anterior and inferior MI: 20 ANT and 15 INF, 63 ± 13 vs. 61 ± 11 years old. Speckle strain was performed with EchoPacPC software (GE Healthcare) and rotation in degrees was obtained in each level. LVTorsion was defined as the difference between apical and basal rotation. We used the wall motion score index WMI) and the 16 segments map (ASE) to define the extension of LV WMA. We compared the results with a normal group of 100 patients: 55± 18 years old. **Results:**

ANT INF Normal * P**

LVEF%	47 ± 8	61 ± 11	66,5±7 <0,001
BasalRot degrees	-1,7± 3,6	-0,05 ± 2,6	-2,1±4,4 NS
ApicalRot degrees	4,8 ± 3,5	1,9 ± 3,9	7,6±5,4 <0,02
LVTor	4,3 ± 5,3	5,6 ± 4,5	9,7±6,8 NS
WMI score	1,5 ± 0,2	1,37 ± 0,3	1 ± 0 NS *

Everything was P <0.001, except INF LVEF; ** between ANT vs. INF

Conclusions: There was a significant reduction in global LV torsion in anterior and inferior myocardial infarction. This effect appears unrelated to extension of segmental wall motion abnormalities. In our patients with inferior myocardial infarction and normal LVEF we found an unexpected diminish apical rotation.

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Different levels than proposed in abdominal waist circumference on a latinoamerican population

C. Ponte- N[1–2], N. Vargas[3], I. Brajkovich[2], L. Machado-H[1–2], J. Isea-Pérez[1–2], J. Gómez .M[2–3], C. Mendoza[1]. [1]*Cardiology Departament Hospital Dr. Domingo Luciani caracas* [2]*Fundación Venezolana de cardiología Preventiva* [3]*Hospital Universitario de Caracas*

Values of waist circumference as an anthropometric correlate to visceral fat representative of cardiovascular risk have been defined for European, Japanese and North Americans and from them extrapolated to Latino American populations to assist in metabolic syndrome (MS) diagnosis. This situation can be misleading both to individuals and populations alike since the extrapolated measurements could not reflect the real values for them. Thats why the International diabetes federation score for the definition and diagnoses metabolic syndrome encourage to know the local abdominal waist circumferential (AWC)in order to improve the MS diagnosis in each region. **Population,and methods T**o evaluate the real level of visceral fat and waist circumference of a Venezuelan population we have conducted a study in a cohort of 145 cardiovascular healthy individuals (72 men and 73 women, 18 to 71 years old) who attended the Radiology Department at 6 hospitals in Caracas, Venezuela, from July 2005 to august 2007 All the subjects were evaluated in a standardized manner to obtain waist circumference in centimeters and amount of visceral fat; this last was done in Hounsfield units using helical computed tomography measurements obtained at the L4-L5 vertebrae level. **Results:** The waist circumference correlating (liner regression) with the 100 cm2 amount of visceral fat measuring by abdominal tomography for these subjects was 88,9 cm for men ($r= 0.837$; $p<0.0001$); and 86,8 cm for women ($r= 0.8896$; $p= 0.0001$). **Conclusions** These meassured valuesof AWC are different than the ones proposed by the IDF for the latin American population and clearly emphasize the necessity of local determinations of ACW values for the correct diagnosis of MS in order to make a correct diagnosis of MS and to know the real prevalence and incidence of these conditions in Latin America.

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SOLITARY PAPILLARY MUSCLE HYPERTROPHY CAN BE A PRECURSOR OF HYPERTROPHIC CARDIOMYOPATHY

T. F. Cianciulli[1–3], M. C. Saccheri[1–3], **A. M. Bermann**[1], J. A. Lax[1], I. V. Konopka[1], R. S. Acunzo[2], H. J. Redruello[1], H. A. Prezioso[1], M. V. Elizari[2–3], L. A. Vidal[1]. [1]*Hospital " [2]Dr. Cosme Argerich" [3]. [4]Hospital " [5]J. M. Ramos Mejía" [6]. [7]Researcher of the Secretary of Health, Government of the City of Buenos Aires.*

Background: although hypertrophic cardiomyopathy (HCM) has traditionally been characterized as unexplained hypertrophy of a nondilated left ventricular (LV), there is considerable variability in the degree, pattern and localization of the hypertrophy. **Objective:** The aim of this study was to evaluate if the solitary papillary muscle hypertrophy could be related to HCM. **Methods:** We performed two-dimensional echocardiographic study (2-D echo) at first-degree relatives of 125 patients with HCM, and we found 45 patients with more than one member affected with the disease (familial HCM). In these familial HCM we performed 165 2-D echo for searching subjects with hypertrophied papillary muscles in the left ventricle (defined as a horizontal or vertical diameter > 1,10 cm), without hypertrophy in other segments. **Results:** we found two subjects with solitary papillary muscles hypertrophied without hypertrophy in other segments of the LV. A 20-year-old man had anterolateral papillary muscle hypertrophy (horizontal diameter: 1,38 cm) and a 18-year-old man had posteromedial papillary muscle hypertrophy (horizontal diameter: 1,43 cm). The 12-lead electrocardiogram was normal, the vectorcardiogram showed mild septal hypertrophy. Two years later a new 2-D echo demonstrated, in both patients left ventricular hyperthrophy, localized in the interventricular septum (1,4 cm) in the first patient and in the posterior wall of the LV (1,0 cm) in the second patient. None of them had clinical symptoms. **Conclusions:** These findings suggest that a solitary papillary muscles hypertrophy may be a subtype of HCM or an early form of HCM. 2-D echo and vectorcardiogram could identify this early manifestation of the disease.

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Acute Effects of Non Invasive Ventilation with Continuous Positive Airway Pressure on Pulse Pressure in Chronic Heart Failure

M. Quintão[1–2], S Chermont[1–2], N N. Rocha[1], E T. Mesquita[1], A C L. Da Nóbrega[1]. *[1]Federal Fluminense University [2]C.S.M.Santa Martha [3]Federal Fluminense University [4]Federal Fluminense University [5]Federal Fluminense University*

Backgrounds:. Elevated pulse pressure (PP), an indicator of increased arterial stiffness, has been shown to predict adverse outcome in patients with stable heart failure. Increased PP is a important risk marker for cardiovascular events in patients with chronic HF (CHF). Non-invasive ventilation (NIV) has been used for acute cardiogenic pulmonary edema to improve congestion and ventilation through mechanical and hemodynamic effects. However the effects of CPAP on PP in patients with CHF is poor known. **Objective:** The aim of this study was to determine the acute effects of NIV with CPAP on PP in outpatients with CHF. **Methods:** Following a double-blind, randomized, cross-over, and placebo-controlled protocol, twelve patients with CHF(8 male; 4 female; age 58±13 years; BMI 29±6 kg/cm^2, NYHA class II,III) underwent CPAP via nasal mask for 30 min in a recumbent position. Mask pressure was 3 cmH_2O for 10 min followed by individual progression up to 4–6 cmH_2O, whereas placebo was fixed 0–1 cmH_2O with a bypass valve. PP and other non invasive hemodinamycs variables was performed before, during and after placebo and CPAP. **Results:** CPAP decreased heart rate (Pre: 72±10; vs Post 5min: 67±12bpm; P<0.05), mean arterial pressure (CPAP: 87±11; vs control 96±11mmHg; P<0.05 post 5 min). and PP (CPAP: 39±19; vs control: 47±21 mmHg; P<0.05 post 5 min. **Conclusion:** NIV with CPAP decreased pulse pressure in patients with stable CHF. Future clinical trials should investigate whether this effect is associated with improved clinical outcome.

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PERCUTANEOUS CORONARY INTERVENTIONS (PCI) FOR UNPROTECTED LEFT MAIN CORONARY ARTERY (ULCMA)

M. Strozzi[1], D. Anic[1], B. Skoric[1]. *[1]Clinical Hospital Centre Zagreb, Croatia*

In several databases PCI was performed on patients with ULMCA, and the results are acceptable. This cohort of patients is at higher risk of death after CABG and the mortality of PCI in different groups of patients depend on the patients characteristics. In the group of patients, good surgical candidates, the results of PCI in ULMCA are comparable with CABG or even better. The difference in MACE is connected with higher need for target vessel revascularization (TVR) caused by restenosis in patients with bear metal stent (BMS) implantation. Drug eluting stents (DES) could change this, and recently a few registries are formed for PCI in ULMCA with DES. The results are encouraging. From 2002 in our institution, on 32 patients PCI of ULMCA with BMS was performed, and DES (predominantly sirolims Cypher stent) was implanted in ULMCA in 57 patients. Lesion locations were: ostial stenosis (30%), shaft (8 %), and bifurcation (62%) where the technique of provisional T- stenting was used, except in 3 cases where a V stenting was performed. We compared these two groups. There was no difference in clinical characteristics (age, sex, and angina class, DM, hypertension, hypelipidaemia status, smoking and prior IM) between these two groups. There was a statistical difference in Euroscore (3.1 versus 5.6, p=0.033). The angiographic characteristics were similar. There was no difference between groups in hospital complications (there was one death in the BMS group). The patients were on clopidogrel 3–12 month after PCI. In follow up of 6–60 months, mean 18, in majority of patients a control angiography was performed. In follow up there was a difference in MACE in favor of the DES group because of higher incidence of need for TVR (16% in DES, and 54% in BMS, p=0.019). On control angiography late loss (LL) in the DES group was 0.25 mm and in the BMS 0.85 (p=0.007). We compared our results with surgical patients operated for LMCA stenosis in the same period in our institution. PCI of ULCA with DES should not be principally avoided in highly experienced sites and in cases of suitable lesion anatomy.

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Importante of reperfusion strategy and heart failure in the acute myocardial infarction

S. M Macin[1], E. R Perna[1], P Barrios[1], J Parra Moreno[1], P Pozzer[1], E Villegas[1], G Zini[1], P Liva[1], J Baccaro[1], JR Badaraco[1]. *[1]Intituto de Cardiologia JF Cabral [2]Intituto de Cardiologia JF Cabral [3]Intituto de Cardiologia JF Cabral [4]Intituto de Cardiologia JF Cabral [5]Intituto de Cardiologia JF Cabral [6]Intituto de Cardiologia JF Cabral [7]Intituto de Cardiologia JF Cabral [8]Intituto de Cardiologia JF Cabral [9]Intituto de Cardiologia JF Cabral [10]Intituto de Cardiologia JF Cabral*

Introduction: The use of reperfusion strategy in the acute myocardial infarction reduced the mortality rate and complications. **Objective:** To evaluate clinical characteristics and short and long term evolution in patients with AMI with received reperfusion strategies and development heart failure. **Methods:** Between Jan/2004 and Dec/2006, 95 consecutive patients admitted for acute myocardial infarction with ST segment elevation, within 6 hrs period since symptoms onset and follow up 360 days. **Results:** The mean age was 60.94±11.48 years, 24.2% was diabetes, 41.5% tabacco, 24.2% previous used aspirin. During hospitalization used IECA/ARA II 92%, beta bloquers 92.6%, statins 89%, clopidogrel 63.5%. The reperfusion strategies were used in 85(90%) patients, 36.8% thrombolitic agents and 52.6% primary angioplasty. During hospitalization 17.9% had angina, 4.2% re-AMI and 37.2% Herat failure (HF). The total mortality rate was 5.3%, and higher in older patients (18.3 vs 4.3%, p=0.01), female gender (17.4 vs 5.6%,p=0.03), and Peel: I(0%), II(5.1%), III(12.5%) and IV (25%), p=0.002), and development heart failure (27.3 vs 2.7%,p=0.001). The survival rate was 89.5%. The survival rate for groups (with or without reperfusion strategies and development or non Herat failure: group I [reperfusion strategy (+) and development HF(-)]: 100%; group II [reperfusion strategy (+) and development HF (+)]: 84%; group III [reperfusion strategy (-) and development HF (-)]: 86%; Group IV [(reperfusion strategy(-) development HF (+)]: 33%(log rank test p<0.002). The independent predictors of mortality were: age (p=0.03,HR=1.68, IC95% 0.75–0.92), TnT at admission (p=0.001,HR=2.78, IC95% 0.72–0.89), no received reperfusion strategy(p<0.001,HR=8.19, IC95% 1.37–37) and development of heart failure during hospitalization (p<0.001, HR=4.4, IC95% 1.47–38). **Conclusions:** In this registry non-selective population with acute myocardial infarction with ST segment elevation the rate mortality was similar to clinical trials, age, non used reperfusion strategy, troponin T at admission and development Heart Failure during hospitalization were strong long-term prognostic predictor.

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HEPATOPULMONARY SYNDROME AND HEMODYNAMIC RESPONSE ON THE LEFT SIZE OF THE HEART

F. L. Weich Glogier[1], T. F. Cianciulli[1–2], J. Vilkas Anzorena[1], F. Spernanzoni[1], M. C. Saccheri[1–2], J. A. Lax[1], A. N. Dorelle[1], H. A. Prezioso[1], L. A. Vidal[1], O. C. Imventarza[1]. *[1]Hospital " [2]Dr. Cosme Argerich" [3]. [4]Researcher of the Secretary of Health of the Government of the City of Buenos Aires.*

Background: The Hepatopulmonary Syndrome (HPS) is characterized by a combination of liver disease, pulmonary microvascular dilatation, arteriovenous shunting, dyspnea and hypoxemia in the absence of cardiopulmonary disease. The presence of HPS increases mortality in the setting of cirrhosis. The orthotopic liver transplantation is considered the only effective treatment in most of these patients. Contrast echocardiography (CE) is the primary diagnostic tool that allows a better sensibility for diagnosis HPS. **Objectives:** The aim of this prospective study was to evaluate the possible hemodynamic response of the HPS over the left size of the heart. **Methods:** Adult patients (>18 yr old) with end-stage of liver disease who were referred for liver transplantation were enrolled in the study. Diagnosis of HPS was established when intrapulmonary microvascular dilatation and arteriovenous shunting were detected with contrast echocardiography in absence of primary cardiac or pulmonary disease. **Results:** We enrolled 20 patients (mean age 41.1 ± 9.5 yr), 9 were males, diagnosed with HPS. Also 109 end-stage liver disease (mean age 42.1 ± 9.6 yr), 56 were males, who have negative contrast echocardiography were selected for the purpose of comparison echocardiographic and Doppler variables. Peak early diastolic velocity and E/A ratio was significantly greater in patients with HPS compared to the control without HPS (90 ± 19 cm/sec and 1.20 ± 0.30 vs. 79 ± 17 cm/sec and 1.03 ± 0.30, respectively, p< 0.01). Conclusion: In patients with HPS, the volume overload of the intrapulmonary shunt doesn't produce changes in the left size of the heart, but it generates a significant increase of the peak early diastolic velocity with an increase of the E/A ratio.

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Quality of life improvement in stable angina pectoris by combining physical exercise and medical treatment

L. Matos[1], M. Lengyel[2], J. Szlavov[2], L. Pál[3]. *[1]Szt János Hospital, Cardiology [2]MedrepkeD [3]MedrepkeD [4]Novartis Hungaria*

Patients with stable angina pectoris are very high risk subjects for cardiovascular events, who should be participating in complex secondary prevention programs, including regular physical exercise, however, dynamic exercise might cause anginal attacks with increasing risk of acute coronary events and significantly impairing their quality of life. The aim of the TTS-Life Movement Program [Ten Thousend Steps for Life Movement Program (TTS-LMP)] was to study the influence of an antianginal medical treatment – Nitroderm TTS -, and regular dynamic exercise on the quality of life in patients with chronic stable angina pectoris. **Methods:** In two sets – patients treated in general medical practices, and patients controlled in cardiological outpatient wards – 2022 volunteers with the diagnosis of stable angina pectoris were participating in the study (men:52%, mean age 63.4±11.4 y.). The majority of patients (78.8 %) belonged to the 50–79 year age group. Quality Of Life (QOL) was assessed using the Hungarian version of the Duke Activity Status Index (DASI). The questionnaire was first filled in before the study, then at week 4, and 12. The anginal patients in the program were treated by Nitroderm TTS patch in a daily dose which was well tolerated (5 mg in 71.3 %) and regular walking of minimally 10.000 steps weekly, controlled by a pedometer. The statistical analysis was performed with the use of the 9.1 version of the SAS statistical program. Before the transdermal nitrate- and dynamic exercise program just 4 % of the patients were free of complaints, at the end of the study 35 % of the whole group had no complaints (p<0.001). Before treatment the majority of the group felt anxiety and depression and these have significantly improved after 12 week of combined medical and exercise treatment (p<0.001). The improvement of the physical performance as well as that of the quality of life moved generally in parallel, the pooled results of all replies in the questionnaire changed highly significantly for the better (p<0.0001). **Conclusions:** Combination of transdermal nitrate therapy and regular, dynamic physical exercise in a secondary prevention program is significantly improving physical performance and quality of life in chronic stable angina pectoris.

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Have adherence to guidelines in chronic coronary artery disease?

S. M Macin[1], J Bono[1], H Ramos[1], A Romano[2], M Balestra[3], G Zapata[1], E Hasbani[1], J Mountaner[1], H Luciardi[1]. *[1]Comite Cardiopatia Isquemica. Federación Argentina de Cardiologia [2]Comite Cardiopatia Isquemica. Federación Argentina de Cardiologia [3]Comite Cardiopatia Isquemica. Federación Argentina de Cardiologia [4]Hospital Central. Formosa. Argentina [5]Goya. Corrientes. Argentina [6]Comite Cardiopatia Isquemica. Federación Argentina de Cardiologia [7]Comite Cardiopatia Isquemica. Federación Argentina de Cardiologia [8]Comite Cardiopatia Isquemica. Federación Argentina de Cardiologia [9]Comite Cardiopatia Isquemica. Federación Argentina de Cardiologia*

Introduction: Adherence to published coronary artery disease (CAD) guidelines is suboptimal, particularly among minorities and the poor. **Objective:** The aim of this study was to assess the application of these guidelines and the treatment of chronic coronary artery disease in different centres in Argentina. **Methods:** Between Jul/2007 and Sep/2006, 792 consecutive patients admitted out patients for chronic coronary artery disease was included. We evaluated use of 4 drugs: betablockers, angiotensin-converting enzyme inhibitors (ACEIs), hydroxymethylglutaryl coenzyme A reductase inhibitors (statins), and aspirin. **Results:** A total of subjects were included. The mean age was 65 +/- 14 years, 68% were hypertension, 23% had type 2 diabetes, 22% had previous myocardial infarction, 22.5% had chronic stable angina and CABG previous 12%. Of 792 subjects in the analysis dataset, 38% were women; 51% were recruited in Corrientes. Beta bloquers were used in 82 %, ACE-Inhibitors in 78%, aspirin in 91%, statins in 68%; of 792 subjects used 262 (34%) had a low-density lipoprotein (LDL) level $>$ or $=$100 mg/dL and 112 of these (43%) were not on statin. Among those persons on statin treatment, only 28% had an LDL $<$ or $=$70 mg/dL. **Conclusions:** We observed good adherence of guidelines respect used aspirin, beta bloquers and ACEIs, approximately one out of three guideline-eligible patients in this study had low-density lipoprotein cholesterol concentrations above qualifying levels for pharmacologic therapy, but half of these patients were not taking a statin, and of those receiving statin treatment, less than half were within recommended lipid goals.

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DOPPLER TISSUE IMAGING IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY

M. C. Saccheri[1–3], T. F. Cianciulli[1–3], **S. E. Puga**[1], I. V. Konopka[1], R. S. Acunzo[2], J. E. Guerra[1], D. F. Serans[1], H. A. Prezioso[1], M. V. Elizari[2–3], L. A. Vidal[1]. *[1]Hospital " [2]Dr. Cosme Argerich" [3]. [4]Hospital " [5]J. M. Ramos Mejía" [6]. [7].Researchers of the Secretary of Health, Government of the City of Buenos Aires.*

Background: the ratio of transmitral early left ventricular (LV) filling velocity (E) to early diastolic Doppler tissue imaging velocity of the lateral mitral annulus (E/E' ratio) was calculated to estimate the LV filling pressures. Objective: to analyze if E/E' ratio allows detect different grade of LV diastolic myocardial dysfunction in different types of hypertrophic cardiomyopathy (HCM), and compare this index with healthy volunteers. **Methods:** the study group comprised 83 patients with HCM, which were separated in 4 group (group 1A: 31 patients with non obstructive HCM, group 1B: 20 patients with obstructive HCM, group 1C: 20 patients with apical HCM and group 1D: 12 patients with other forms of HCM: midventricular, symmetrical, and biventricular). E/E' ratio was calculated in the lateral mitral annulus in patients with HCM (48 women, 51.5 $\pm$ 18 years) and was compared with 27 healthy volunteers (group 2: 16 women, 48.3 $\pm$ 15 years) of similar sex and age. **Results:** E/E' ratio was significantly higher in the group of HCM (group 1) that in the healthy volunteers (group 2): 7.6 (5.4–11.1) vs. 4.6 (3.6–5.3), p $<$ 0.0001. There were not differences among the different groups of HCM: group 1A: non obstructive: E/E' ratio 7.64 (4.6–10.8), group 1B: obstructive: E/E' ratio 9.7 (6.7–13.3), group 1C: apical: E/E' ratio 6.3 (5.2–9.9) and group 1D: other forms: E/E' ratio 9.2 (6.3–12.8). **Conclusions:** patients with HCM presented a significant increase of E/E' ratio, independently of the distribution of the hypertrophy. This LV myocardial diastolic dysfunction shows that the increased LV filling pressures were similar in all the types of HCM.

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POSITIVE CORRELATION BETWEEN WAIST CIRCUMFERENCE, HDL-CHOLESTEROL AND TOTAL CHOLESTEROL IN CENTRAL AFRICANS WITH CONGESTIVE HEART FAILURE : REVERSE EPIDEMIOLOGY AND U-RELATIONSHIP IN CARDIOVASCULAR RISK

B. Longo-Mbenza[1], HF Agongola Mambune[2], JB Kasiam On'Kin[2], E Kintoki Vita[2], S Mbungu Fuele[2], J Nkondi Nsenga[2], L Mabwa[2], V Nzuzi[2]. *[1]University of Kinshasa [2]Division of Clinical Epidemiology and Biostatistics, LOMO MEDICAL*

Background: There are controversies as to what the traditional risk factors for coronary heart disease should be in sub-Saharan Africa.. The objective of the study is to assess the determinants of TC and HDL-C as well as their U-shaped relationship with cardiovascular diseases and coronary heart disease risk factors including Helicobacter pylori infection and HDL-C stratification in black Africans with congestive heart failure. **Design:** A cross-sectional and observational study. **Results:** One hundred black Africans with congestive heart failure (48 men and 52 women) were examined. Congestive heart failure was defined by high levels of CHD risk factors such as abdominal obesity (90%), hypertension (81%), chronic renal failure (62%), moderate levels of low HDL-C (58%), excessive alcohol intake (54%) and hyperuricemia (53%), low levels of hypercholesterolemia (10%), and absence of hypertriglyceridemia. Univariate analysis showed red cells (r= - 0.265), glucose (r=0.205) weight (r=0.416), waist circumference (r= 0.503), HDL-C (r=0.498), urea (r=0.185), CRP (r=0.675), fibrinogen (r=0.474) and IgG antibodies against H pylori (0.834) significantly related to TC. Multivariate analysis revealed that waist circumference (B=0.688) and HDL-C (B=0.826) were the significant determinants of TC. Only TC (B=0.160) and BMI (B=0.886) were the significant determinants of HDL-C. There was a respective U-shaped relationship between CVD (P$>$0.05), chronic renal failure (P$<$0.05), H pylori-induced chronic gastritis (P$<$0.05) and the HDL-categories. However the rates of ischemic stroke and myocardial infarction were significantly (p$<$0.05) associated with low HDL-C, respectively. Triglycerides and LDL-C did not show any significant correlation with the rest of parameters. Clinical Insulin resistance (P$<$0.01) were predominantly present in the intermediate HDL-C category than in low and high HDL-categories, respectively. There was a inverse relation between lower TC:HDL-C ratio, high HDL-C and abdominal obesity/insulin resistance in men. H. pylori gastritis was positively related to higher TC:HDL-C ratio in both men and women. **Conclusion:** The rates of non-communicable diseases including hypertension, stroke, CHD, chronic renal failure, obesity and diabetes are paradoxically very high or emerging among these black Africans with low total cholesterol, higher HDL-C and absence of hypertriglyceridemia. Reverse epidemiology is also suggested by inverse relation between total cholesterol and HDL-C, and U-shaped relationship between CVD, chronic renal failure, H pylori gastritis and HDL-C stratification. The rates of ischemic stroke and myocardial infarction were significantly associated with low HDL-C. Preventive measures and more studies explaining the interplay between HDL-C level and HDL-C function are need. A specific ethnic definition of metabolic syndrome is also needed. **Keywords:** Africans, Atherosclerosis, Elevated high density lipoprotein, reverse epidemiology, metabolic syndrome, heart failure.

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Heart rate variability after different cardiac surgery procedures and its prognostic value

N. Lakusic[1], F. Baborski[1], J. Mirat[2], LJ. Pavelic[3], K. Fuckar[1], D. Cerovec[1], M. Majsec[1]. *[1]Department of Cardiology, Hospital for Medical Rehabilitation Krapinske Toplice, Croatia, Europe [2]Department of Cardiology, General Hospital " [3]Sveti Duh" [4], Zagreb, Croatia, Europe [5]University Hospital Jordanovac, Zagreb, Croatia, Europe*

Objectives: Coronary artery bypass grafting (CABG) often leads to significantly decreased heart rate variability (HRV). There are reports showing that the decreased HRV after CABG has no prognostic value, as oppose to decreased HRV after myocardial infarction (MI). Furthermore the studies analyzing HRV and its predictive value after heart valve surgery are lacking. Thus the goal of this research was to define the differences in HRV between patients subjected to various cardiosurgical procedures and to establish the value of HRV in mortality prediction. **Patients and Methods:** After an initial screening and follow up period 307 patients were included in the study. The patients were subjected to some form of cardiac surgery procedure in period of 6 months prior to cardiac rehabilitation. There were 206 CABG patients and 101 patients with implanted artificial heart valve prosthesis. HRV was analyzed from the 24-hours Holter electrocardiograph (ECG) recording. After the follow up period, patients were contacted via mail in order to obtain an insight in their health status and the course of their disease after cardiac rehabilitation. The predictive value of HRV after cardiosurgical procedures was assessed using various statistical tests. **Results:** Patients with implanted artificial heart valve prosthesis had lower HRV in relation to patients after CABG. Patients with implanted artificial mitral valve had lower HRV as oppose patients with artificial aortic valve. There were no significant differences in HRV in patients after CABG depending on usage of the machine for extra-corporal circulation. Analyzing the survival rates in all groups of patients, the patients with decreased HRV (SDNN$<$93 ms) had more fatal outcomes of cardiovascular origin then the one with normal HRV (SDNN$\geq$93 ms), (p$<$0.001). Also, the fatal outcome rates of cardiovascular origin within were significantly higher in the group of patients after CABG with decreased HRV then in one with normal HRV values (p=0.001). **Conclusion:** Different cardiosurgical procedures have various influences on autonomic disbalance and post-operative HRV. Opposite to some previous reports, the results of this study show that the patients with decreased post-operative HRV have significantly higher long term mortality rates in relation to ones with normal HRV.

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EARLY DETECTION OF MYOCARDIAL DAMAGE IN CHAGAS DISEASE.

T. F. Cianciulli[1–3], J. A. Lax[1], M. C. Saccheri[1–3], A Papantoniou[1], **R. J. Mendez**[1], N. G. Prado[1–2], A. N. Dorelle[1], A. R. Riarte[2], H. A. Prezioso[1], L. A. Vidal[1]. *[1]Hospital " [2]Dr. Cosme Argerich" [4]Instituto Nacional de Parasitología "Dr. Mario Fatala Chaben", Buenos Aires, Argentina. [5]Researcher of the Secretary of Health, Government of the City of Buenos Aires.*

Objective: to investigate whether transmitral Doppler and Doppler tissue imaging (DTI) can detect early abnormalities of myocardial function in patients during the indeterminate phase of Chagas disease, in which the ECG, chest x-ray and 2-D echocardiogram (2D-echo) are normal. **Background:** Chagas disease may cause left ventricular dysfunction and its early detection in asymptomatic patients would allow stratify risk and optimize medical treatment. DTI is a simple method which could detect early abnormalities in left ventricular function. **Methods:** 277 patients with Chagas disease were studied and compared to a control normal group of 79 subjects of similar age. All were assessed with an ECG, chest X-ray, 2-D echo, transmitral Doppler and DTI. **Results:** both groups had similar values in the 2D-echo. Compared with normal group, patients with Chagas had transmitral Doppler with a higher peak A velocity: (0.57 m/sec (0.47–0.65) vs. 0.44 m/sec (0.40–0.51), p$<$0.001, a lower E/A ratio: 1.31 (1.00–1.53) vs. 1.80 (1.41–2.06), p$<$0.001, a lengthening of the deceleration time of early ventricular filling: 173$\pm$40 vs. 140$\pm$32 msec, p$<$0.001, and a greater E/E′-septum ratio: 6.8$\pm$1.9 vs. 6.0$\pm$0.1, p$<$0.001, showing an early disorder of the diastolic function in patients with Chagas disease. Compared with normal group, DTI in the Chagas group showed, a lengthening of the isovolumic relaxation period: 77$\pm$18 msec vs. 56$\pm$28 msec, p$<$ 0.001 and a lower E′/A′ ratio in the lateral LV wall: 1.37 (0.93–1.66) vs. 2.09 (1.40–2.6), p$<$0.001, demonstrating an early disorder of the systolic and regional left ventricular function. **Conclusions:** in patients with Chagas disease in indeterminate phase, transmitral Doppler and DTI allowed to identify early abnormalities of the left ventricular function, which provides useful clinical information for prognostic stratification and treatment.

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ASSOCIATION BETWEEN CORONARY HEART DISEASE, CERTAIN COMPONENTS OF METABOLIC SYNDROME AND THE QTc INTERVAL IN HYPERTENSIVE CENTRAL AFRICANS

B. Longo-Mbenza[1], JC Manzala Kumbi[2], G Milongo Dipa[2], A Nge Okwe[2], S Mbungu Fuele[2]. [1]*University of Kinshasa* [2]*Biostatistics Unit, LOMO MEDICAL*

Background - Increased QTc interval has been associated with an increased risk for coronary heart disease and higher levels of certain components of the metabolic syndrome in developed countries. Data on these issues are lacking in developing sub-Saharan Africa. Therefore, we investigated this in a case-control study of black and Central African patients. **Methods and results –** Variations of QT interval measured on resting electrocardiograms with use of a computer program and corrected for heart rate with standard equations (QTc) were assessed with simple and multiple linear regressions among 295 hypertensives (101 with CHD and 194 controls;62.8% of QTc≥0.421 ms). Adjusted coronary heart disease risk was assessed using logistic regression model. The determinants of QTc were as follows: Y=0.453 + 0.184 DBP-0.168 BMI-0.150HDL-C. The QTc ≥0.421 ms (OR=4.4 95%CI 1.04 to 18.2; P=0.044) and blood glucose ≥100mg/dL (OR=3.8 95%CI 1.1 to 13.2; P=0.033) were the independent predictors of coronary heart disease. **Conclusion –** We found a significant relation of QTc to many components of the metabolic syndrome. Hypertensives with long QTc are at higher risk for coronary heart disease. QTc may therefore serve as a valuable marker for risk stratification in sub-Saharan Africa. **Keywords:** QTc electrocardiography; coronary heart disease; metabolic syndrome; hypertension; Africans.

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Evaluation of chest pain with BNP: Do we have a new tool?

F Braga[1], L Armine[1], PP Sampaio[1], A Bahi[1], M Simoes[1], J Kezen[1], S Gomes Jr[1], AC Neno[1], F Alvim[1], J Mansur. [1]*HOSPITAL SAMARITANO*

Background: The B-type natriuretic peptide (BNP) has been widely used on the emergency room (ER) for the differential diagnoses (DD) of dyspnea. However, his use for chest pain (CP) DD, although promising, is still undefined. **Objective:** To assess the diagnostic performance (DP) of B-type natriuretic peptide (BNP) in the diagnosis of acute coronary syndrome (ACS) among patients (pts) with chest pain. **Materials and Methods:** Cohort of pts admitted to the ER with chest pain and underwent to an investigation protocol, with serial ECG and Troponin I (TnI). Immediately after ER admission, a blood sample was taken for BNP and TnI analysis. The patients were classified according to their diagnosis in four groups: G1: Non-cardiac chest pain; G2: Non-ST elevation ACS; G3: ST elevation ACS and G4: ACS with left ventricular failure. The median BNP were compared between groups. The DP to identify cardiac origin CP was assessed using the area under the ROC curve (AUROC). **Results:** We analyzed 51 pts with CP (58% male; mean age 70±13 years).The median BNP were 38; 70.7; 399 e 925pg/ml (p=0.002; Spearman rho=0,432(p<0.001) respectively for G1, G2;G3 and G4. The AUROC for the cardiac origin CP was 0.769 (CI95% 0.630 to 0.908; p=0.001). The best cutoff was ≥100pg/ml (Odds ratio = 15.16 CI95% 3.4 to 66.4; p<0.001) with sensitivity = 63.6%; specificity=89.7%; positive predictive value =82.4% and negative predictive value =76.5%. **Conclusion:** In this small sample BNP shown to be a good tool to differentiate cardiac and non cardiac CP. In addition, BNP significantly correlate with ACS severity.

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Usefulness of Tissue Doppler Imaging alone and with Stress-Dobutamine Echocardiography in cardiotransplanted patients.

F.S. Deketele[1], M.A. Morales Lezica[1], L. Ahualli[2], D. Radlovacky[2], V. Piccone[2], C.A. Rivas[1]. [1]*Hospital Aleman (Buenos Aires)* [2]*Hospital Argerich (Buenos Aires)*

Objectives: To assess if clinical variables and systolic and dyastolic tissue Doppler (TD) parameters in cardiotransplanted patients (p.) at baseline and during stress echocardiography may predict acute rejection. **Method:** 26 cardiotransplanted p. (21 men) with a follow-up of more than 1 year after transplantation with intramyocardial biopsies, were evaluated with dobutamine-stress echocardiogram according to usual protocol: 17 had rejection signs class IIIA or higher (group A), and 9 were normal (group B). The isometric contraction time (ICT), S wave (S), E wave (E) and isovolumic relaxing time (IRT) were obtained with TD at the level of mitral annulus on septal and lateral faces at the 4-chamber apical view, bothe at baseline and maximum dose. We also compared clinical variables between both groups relating to age, gender, arterial hypertension, diabetes, coronary lessions, presence of mitral regurgitation and duration of myocardial ischaemia from donor to recipient. All p. had a coronary arteriography. Mean and standard deviation values were obtained for each segment. Statistical analysis was performed using Fisher's exact test for variables of dichotomous scale and the Mann-Whitney not-Parametric Test for comparison of two independent groups for numerical scale variables (p≤0.05). **Results:** There were no significant differences between both groups relating to clinical variables. 8/17 p. in group A presented mitral regurgitation vs 0/9 p. in group B *(p=0.019).* All p. in group A compared to group B had smaller S (0.06m/sec±0.01 vs 0.09±0.008 *p=0.002),* E (0.09m/sec±0.01 vs 0.14±0.02 *p=0.002),* ICT (106ms±7 vs 113±7 *p=0.02)* and IRT (102ms±9 vs 115±5 *p=0.002*), in basal evaluation. Values obtained with dobutamine-stress echocardiogram were lower than baseline, but still maintained the same relationship between the two groups. Only 4 p. (all group A), had significant coronary lessions. **Conclusions:** Stress test did not bring further information to basal values. In our cohort, p. with an S basal value > 0.08m/seg or >0.14 during maximum stress showed no signs of rejection and thus, this could be used to avoid further biopsies. The presence of mitral regurgitation may be an indicator of acute rejection. The high number of p. without coronary artery lessions in group A suggests that rejection is due to microvessel disease.

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Prediction of echocardiography risk factors of thromboembolism using D-dimmer in non-valvular atrial fibrillation

F Braga[1], P Medeiros[1], F Brasil[1], F Nogueira[1], A Godomiczer[1], M Spelta[1], AC Neno[1], R Salomao[1], RH Lins[1], B Hellmuth[1]. [1]*CASA DE SAUDE SAO JOSE*

Background: Atrial Fibrillation (AF) is a common arrhythmia and confers a hypercoagulable state with an increased risk of thromboembolism. Transesophageal echocardiography (TEE)is the gold standart to predict these events in the presence of left atrial appendage (LAA) thrombus, spontaneous left atrial echo contrast (SEC) and low left atrial appendage flow velocity (LAAFV). As a non invasive test, D-dimmer (DD) levels has been advocated as a useful marker for assessing the degrees of hipercoagulability. **Objective:** To investigate the correlation between echocardiography risk factors of thromboembolism and D-dimmer levels in patient with AF. **Methods:** Thirty-one patients with AF were investigated using TEE as gold standard and DD levels were measured with a latex-enhanced method and a semi-quantitative analysis. The LAA flow velocity was dichotomized between high velocity and low velocity (< 0,4cm/s). **Results:** Among 31 patients (mean age 70.8±13 years) with AF, 22.6% had positive DD, 32.3% thrombus or SEC and 74.2% low LAAFV. The Spearman Rho correlation coefficients between DD and LAAFV and DD and presence of SEC or thrombus LAA were respectively -0.462(p<0.009) and 0.453(p=0.011). The mean LAAFV was 0.38±0.16 and 0.23±0.08cm/s respectively for negative and positive DD. The positivity of DD was 9.5 and 50% (p=0.022; OR=9.5, 95%CI 1.4 – 64.3) respectively for patients without and with SEC or thrombus in LAA. The sensibility of DD was 50%, specifity 90.5%, positive predictive value 71.4% and negative predictive value 79.2% for identifying risk factors of thrombogenesis in AF pts. **Conclusion:** In patients with AF, DD may be helpful for predicting hypercoagulable state with a reasonable correlation. Nevertheless there is an unacceptable high rate of false negatives. Therefore, DD should not be used as an exclusive investigation method for thrombogenicity in pts with AF.

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Evaluation of physicians' knowledge on reperfusion therapy for acute myocardial infarction in Argentina: a tool for quality improvement process.

R Iglesias[1], F Rolandi[1], F Di Tommaso[1], I Chaves[1], M Strumminger[1], P Stuzbach[1], A Pocovi[1]. [1]*Sociaedad Argnetina de Cardiología*

Evidence supporting the benefits of reperfusion therapy (RT) in acute myocardial infarction (MI), delivered in a timely fashion, is undoubtedly. However, in Argentina only 53% of patients (pts) receive RT and delays to reperfusion are extremely long. Knowledge of this situation may be itself part of a quality process to improve pts outcomes. **Objectives:** 1 -To describe physicians' knowledge related to reperfusion rates in Argentina, 2 - To assess differences between real and perceived data about delays to RT. 3- To evaluate physicians'perception about management of MI. **Methods:** We designed a questionnaire with close-ended items assessing physicians' knowledge and perceptions regarding RT for MI. Survey was distributed among 900 doctors from around the country who attended a national meeting of the Argentine Society of Cardiology. Statistical analyses were performed with STATA 8.0. **Results:** 338 physicians were surveyed, most (89%) directly involved in the acute management of MI: 75.7% cardiologists, 4.2% intensive care specialists, 12.2% fellows and 7.9% other specialties. Most worked in sites with RT availability: thrombolytics (91.1%), primary PCI (58.3%) or both (52.1%). Only 24.8% of responders were aware that reperfusion rate in Argentina is 50%, 14.5% estimated a reperfusion rate lower than 30%, 8% a rate higher than 70% and the remaining 52.7% admitted not knowing how many pts are treated. Reasons described for not giving RT to pts without contraindications in Argentina were: ignorance of benefits of RT (64.2%), late arrival (58.3%), old age (50.9%), lack of availability of lytics or PCI (34.3%) and female sex (13.6%). The reperfusion rate in responders' sites was: lower than 40% in 6.5%, between 40%–70% in 40.3% and higher than 70% in 31.9%; 21.3% of physicians did not know that percentage. The most common reason for not prescribing RT in the responders' sites was late arrival (73.1%). Routine measurement of door-to-balloon and door-to-needle time was 23.3% and 10.1% respectively. Door-to-balloon time was significantly longer in those sites who systematically measure delays compared with those that do not collect such information (Median, P25%-75%): 135, 120–180 minutes vs. 90, 60–120 minutes, p=0.0001. Similar findings were observed with door-to-needle delay: 90, 60–110 minutes vs. 30, 27.5–90 minutes, in p=0.0001. Finally, most of responders (64.5%) classified management of the acute phase MI as inadequate, 17.2% as good and the remaining 18.3% didn't answered. **Conclusions.** In Argentina reperfusion therapy for AMI is being underused. Only one out of four physicians is aware of this situation. Routine data collection on time to RT is uncommon. Real, measured delays are significantly longer than those perceived by physicians who do not perform any measurement. Improving knowledge about reperfusion rates and collecting data on real time to reperfusion can lead to a better management of MI and necessarily to a better prognosis for our patients.

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Aortopulmonary fistula as an unusual complication in the follow-up of an arterial switch operation (ASO) for Transposition of the Great Arteries.

B. Chiostri[1], I. Lugones[1], M. Grippo[1], J.L. Simon[1], A.J. Schlichter[1]. [1]*Cardiovascular Surgery Division, Children's Hospital Ricardo Gutierrez, Buenos Aires, Argentina*

A 21 months old patient that had been operated on as a neonate performing an arterial switch operation (ASO) for transposition of the great arteries, was subjected to balloon dilatation because of a supravalvular pulmonary stenosis. The procedure relieved the pulmonary stenosis but disclosed the presence of an unsuspected aortopulmonary defect. The patient presented severe congestive heart failure after the dilatation. Post catheterization transthorasic echocardiography confirmed an aortopulmonary fistula with severe pulmonary hypertension. An intent

to close the defect with a device failed. Surgery was performed, and a 6 mm oval defect was found at the posterior wall of the pulmonary artery communicating with the anterior aspect of the ascending aorta. The defect was closed with a PTFE patch. The patient recovered successfully and is asymptomatic one year postoperatively. Transthoracic echocardiography revealed no residual aortopulmonary shunt and low pulmonary pressure. This is a previously unknown complication and has to be kept in mind in patients presenting congestive heart failure in the follow-up of ASO.

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THE COMBINATION OF AMLODIPINE 5 MG AND VALSARTAN 160 MG LOWERS PULSE PRESSURE EFFECTIVELY AND SAFELY IN ELDERLY AND NON-ELDERLY HYPERTENSIVE PATIENTS NOT CONTROLLED BY MONOTHERAPY WITH CALCIUM CHANNEL BLOCKERS

J. Brachmann[1], R. Handrock[2], **S. Klebs[2]**. *[1]Dept. of Cardiology, Coburg Hospital, Coburg-Germany [2]Clinical and Regulatory Affairs, Novartis Pharma GmbH, Nuernberg-Germany*

Objective: Pulse pressure has been identified as an independent predictor for cardiovascular events especially in elderly patients (≥ 65 years). Pulse pressure values above 65 mmHg have been rated as abnormal. It has been observed that an increase of 10 mmHg in pulse pressure was associated with a 32% higher risk for heart failure or a 24% higher risk for stroke. Physicians often are reluctant to titrate to maximal doses of calcium channel blockers if controlled blood pressure (BP) levels are not achieved under the standard dose (e.g., amlodipine 5 mg (Aml 5) or felodipine 5 mg (Fel 5)) to avoid frequent adverse events like edema. Such patients could be treated with the fixed dose combination of amlodipine 5 mg and valsartan 160 mg (Aml 5/Val 160) instead. The study investigated whether the combination of Aml 5/Val 160 is able to significantly improve BP reduction in hypertensive patients not adequately controlled by Aml 5 or Fel 5 (1:1). This analysis assessed the effect on mean sitting pulse pressure at trough in elderly and non-elderly patients. **Methods:** 214 patients with mean sitting systolic BP (MSSBP) ≥ 160 and < 180 mmHg entered a 4-week treatment with Aml 5 (phase 1, week 0–4). In 181 patients, BP was still uncontrolled at week 4 (MSSBP ≥ 140 mmHg). These patients entered the second 4-week treatment (phase 2, week 4–8) with Aml 5/Val 160. **Results:** In the intent-to-treat population (n=180), 62% of patients were younger than 65 years and 38% were aged ≥ 65 years. At day 1, pulse pressure was 70.3±6.5 mmHg. At week 4, pulse pressure was decreased to 62.8±8.7 mmHg with Aml 5 or Fel 5. Subsequent treatment of patients not adequately controlled by Aml 5 or Fel 5 with Aml 5/Val 160 for 4 weeks reduced pulse pressure to 55.1±11.3 mmHg. The additional decrease achieved by Aml 5/Val 160 was statistically ($p<0.0001$) and clinically significant. In non-elderly patients, pulse pressure additionally decreased by 9.1±9.8 mmHg, in elderly patients by 5.6±9.9 mmHg. The overall reduction in pulse pressure from day 1 to week 8 in the intent-to-treat population was 15.2±11.9 mmHg. 7 cases of edema/leg swelling were reported with Aml 5 or Fel 5. One case was reported with Aml 5/Val 160 in phase 2. There were no clinically relevant changes in mean uric acid, creatinine, bilirubin, blood glucose, cholesterol, LDL cholesterol, and triglycerides observed with Aml 5/Val 160. **Conclusion:** In hypertensive patients not controlled by Aml 5, Aml 5/Val 160 is an efficacious and well-tolerated therapy, providing a clinically relevant and statistically significant additional pulse pressure reduction.

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THE COMBINATION OF AMLODIPINE 5 MG AND VALSARTAN 160 MG LOWERS BLOOD PRESSURE EFFECTIVELY AND SAFELY IN OVERWEIGHT AND OBESE HYPERTENSIVE PATIENTS NOT CONTROLLED BY MONOTHERAPY WITH CALCIUM CHANNEL BLOCKERS

J. Brachmann[1], R. Handrock[2], **S. Klebs[2]**. *[1]Dept. of Cardiology, Coburg Hospital, Coburg-Germany [2]Clinical and Regulatory Affairs, Novartis Pharma GmbH, Nuernberg-Germany*

Objectives: Obesity and hypertension are co-morbid risk factors for the development of cardiovascular disease and require an effective antihypertensive therapy. Physicians often are reluctant to titrate to maximal doses of calcium channel blockers if controlled blood pressure (BP) levels are not achieved under the standard dose (e.g., amlodipine 5 mg (Aml 5) or felodipine 5 mg (Fel 5)) to avoid frequent adverse events like edema. Such patients could be treated with the fixed dose combination of amlodipine 5 mg and valsartan 160 mg (Aml 5/Val 160) instead. The study investigated whether the combination of Aml 5/Val 160 is able to significantly improve BP reduction in hypertensive patients not adequately controlled by Aml 5 or Fel 5 (1:1). This subgroup analysis assessed the efficacy in relation to the body mass index (BMI). **Design and Methods:** After wash-out, 214 patients with mean sitting systolic blood pressure (MSSBP) ≥ 160 and < 180 mmHg entered a 4-week treatment with Fel 5 or Aml 5. 181 patients whose BP was still uncontrolled at week 4 (MSSBP ≥ 140mmHg), entered a second 4-week treatment phase with Aml 5/Val 160. Primary efficacy parameter was the reduction in MSSBP at trough between week 4 and week 8. **Results:** In the intent-to-treat population (n=180), 49% of patients were overweight (BMI ≥ 25 and <30) and 37% were obese (BMI ≥ 30). At day 1, MSSBP in the overweight and obese population was 168.7±5.7mmHg and 167.3±5.2mmHg, respectively. At week 4, MSSBP decreased to 153.1±8.8mmHg and 155.1±8.8mmHg with Aml 5 or Fel 5. Subsequent treatment of patients not adequately controlled by Aml 5 or Fel 5 with Aml 5/Val 160 for 4 weeks reduced MSSBP to 139.6±10.3mmHg and 144.2±15.0mmHg. Mean sitting diastolic BP (MSDBP) in the overweight and obese population was 97.4±5.0mmHg and 97.8±5.3mmHg at day 1, respectively. At week 4, MSDBP decreased to 89.8±6.8mmHg and 91.9±7.1mmHg with Aml 5 or Fel 5. Subsequent treatment of patients not adequately controlled by Aml 5 or Fel 5 with Aml 5/Val 160 for 4 weeks reduced MSDBP to 84.7±7.2mmHg and 87.3±9.3mmHg, respectively. The reductions achieved by Aml 5/Val 160 were statistically highly significant (p-value<0.0001). The overall BP reduction for MSSBP/MSDBP in the overweight and obese population from day 1 to week 8 was 29.1±10.9mmHg/12.8±7.3mmHg and 23.1±14.4mmHg/10.5±9.6mmHg. There were no clinically relevant changes in mean uric acid, creatinine, bilirubin, blood glucose, cholesterol, LDL cholesterol, and triglycerides observed with Aml 5/Val 160. **Conclusions:** In overweight and obese hypertensive patients not controlled by Aml 5 or Fel 5, Aml 5/Val 160 is an efficacious and well-tolerated therapy, providing clinically relevant and statistically significant additional BP reductions.

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Predictive value of preoperative BNP for adverse outcomes in Coronary Artery Bypass Grafting

L. Valtuille[1], L. Gomez[1], F. Rolandi[1], A. Domenech[1], R. De Miguel[1], D. Perez De Arenaza[1], A. Cagide[1], JL. Navarro Estrada[1]. *[1]Hospital Italiano de Buenos Aires*

Introduction The value of preoperative BNP to predict adverse outcomes in Coronary Artery Bypass Grafting (CABG) has been published previously. Most of these data come from univariate analysis, mainly because of small study groups. This fact, alongside the lack of a uniformly accepted cutoff point limits the application of BNP dosage in this clinical setting. The aim of this study was twofold; first, to aid in establishing an optimal cutoff point for preoperative BNP that accurately predicts adverse outcomes in CABG and second, to asses BNP prognostic value in univariate and multivariate analysis. **Methods** Prospective cohort study of patients undergoing CABG. Patients with valve disease or preoperative creatinine ≥2.5 mg/dl were excluded. Preoperative BNP was assessed within 24 h prior surgery and physicians were blinded to test results. Postoperative Low Cardiac Output Syndrome (LCOS) was defined as inotropic requirement to maintain a cardiac index ≥2.2 l/min ≥24 h not due to bleeding complications. Prolonged Hospitalization (PH) was defined as postoperative stay ≥10 days. The combined endpoint of in-hospital adverse outcome was defined as the presence of LCOS and/or PH. We performed a ROC analysis to determine the optimal BNP cutoff point for predicting the endpoint. A stepwise logistic regression model was developed to identify independent predictors of the outcome. **Results** 71 consecutive patients were included between September 2006 and September 2007. Mean age was 67.1±2.4 years, 57 (80%) were males and 18 (25.4%) were diabetics. Mean ejection fraction (EF) was 54±2.6%. 15 (21.1%) had EF <50%. Median EuroSCORE was 3 (0–13). 35 (49.3%) underwent surgery because of recent Unstable Angina/NSTEMI. Rate of perioperative intraaortic balloon pump use was 26%. The incidence of LCOS, PH and Adverse Outcome was 23.9%(17), 9.8%(7) and 30.9%(22) respectively. ROC curve analysis determined preoperative BNP ≥163,5 pg/ml as the optimal cutoff point for predicting both postoperative LCOS and/or PH with a sensitivity of 59% and a specificity of 89% (Area 0.78). 18 (25.4%) patients presented with BNP levels above this cutoff point. Univariate analysis showed preoperative BNP >163,5 pg/ml, EF <50%, age >75 years and female sex to be significant predictors of LCOS. BNP >163,5 pg/ml and age >75 years also predicted PH. Multivariate analysis identified preoperative BNP >163,5 pg/ml (OR 6.20[1.20–31.84], p=0.028), age >75 years (OR 6.54[1.04–40.83], p=0.044) and female sex (OR 16.31[2.93–90.67], p=0.001) to be significant and independent predictors of adverse outcomes. EF<50% was not found to be an independent predictor in this model (p=0.11). **Conclusions** In our study population, we found preoperative BNP levels ≥163,5 pg/ml to be a significant and independent predictor of postoperative adverse outcomes in Coronary Surgery. More data are needed to confirm that BNP adds independently to established risk factors for postoperative complications.

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LEFT ATRIAL APPENDAGE FUNCTION AND RISK OF THROMBOEMBOLISM IN MITRAL STENOSIS IN SINUS RHYTHM

T. F Cianciulli[1–4], M. C. Saccheri[1–4], J. A. Lax[1], **F. L. Weich Glogier[1]**, J. J. Cirio[2], R. A. Sarmiento[1], M. L. Talavera[1], D. A. Kyle[1], O. Fustinoni (h)[3], H. A. Prezioso[1]. *[1]Hospital " [2]Dr. Cosme Argerich" [4]Hospital " [5]Dr. Juan A. Fernández" [7]INEBA-Instituto de Neurociencias Buenos Aires. [8]Researcher of the Secretary of Health of the Government of the City of Buenos Aires.*

Background: Transesophageal echocardiography (TEE) is commonly performed to detect the presence of a left atrial appendage (LAA) thrombus in the setting of an embolic event. The predictive value of TTE findings in patients with mitral stenosis and sinus rhythm has not been well defined. **Objective:** This study evaluated whether TEE findings can predict LAA thrombi, systemic embolism, silent brain infarction and cardiac death in patients with mitral stenosis and sinus rhythm. **Methods:** one-hundred and thirty one patients (121 female, mean age 44 ± 13 years, range: 18 to 82 years), with mitral stenosis and sinus rhythm, who underwent trasthoracic echocardiography (TTE), TEE and brain computerized tomography (CT) scans were included in this prospective study, from 1995 to 2007. None were on anticoagulant therapy. TTE, TTE and CT variables were analyzed using univariate and multivariate logistic regression to identify predictors of cardiac event, defined as: LAA thrombi, systemic embolism, silent brain infarction or cardiac death. **Results:** During a mean follow up of 7 ± 3 years we identified 31 cardiac event (23,7 %): LAA thrombi were identified by TEE in 5 patients (3,8 %), 16 patients (12,2 %) had stroke, 2 patients (1,5 %) had silent brain infarction, 2 patients (1,5 %) had peripheral embolism and 6 patients (4,6%) died. Several TEE variables suggesting LAA dysfunction, predicted cardiac event, including a velocity time integral (VTI) of LAA empty less than 2.07 cm (sensitivity: 88 %, specificity: 49%), a VTI of LAA filling less than 2.18 cm (sensitivity: 82 %, specificity: 61%) and a upper left pulmon5ary left diameter more than 17 mm (sensitivity: 44 %, specificity: 85%). **Conclusion:** despite the fact that left atrial clot is usually sought in mitral stenosis patients with atrial fibrillation rhythm, mitral stenosis patients in sinus rhythm are also at risk from intra-atrial clot formation. We conclude that anticoagulant therapy should be considered in patients with mitral stenosis and sinus rhythm with TEE variables suggesting LAA dysfunction, because they were found to be predictive of cardiac event.

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Body Image Analysis In Obeses, Overweight And Eutrophic Subjects

K.C. Guidini[1], P.M. Lese[1], K.C. Belli[1], A.C. Côrrea[1], D.C. Bündchen[1], T. Dipp[1], T.F. Panigas[1], C.M. Richter[1], M.C. Romero[1], P.R.N. Viecili[1–2]. [1]*Cruz Alta Heart Institute - ICCA* [2]*Cruz Alta University - UNICRUZ*

Background: The corporal image refers to the individual's psychological experience on his/her appearance and the operation of his/her body. The negative corporal image may be generated by the individual's dissatisfaction with his/her body weight, feeling that this is caused by the social imposition of a body pattern that, most of the time, it is unreal or unattainable. The fantasy of the perfect body and the thinness may cause to the individuals with or without overweight, dissatisfaction with his/her corporal image, revealing a contradiction between individual and social needs. **Objective:** Analyze the distorted status of the body image in obese, overweight and eutrophic subjects. **Methods:** The sample was composed by 118 subjects (63 ± 7 years), 90 female (F) and 21 male (M). Data were measured according to body weight, body mass index (BMI=kg/m2)) and abdominal circumference (AC:cm). The body image distortion (BID) was measured by Body Shape Questionnare (BSQ questionnaire). Data were expressed as mean ± SD; Student t test to continue variables, x2 test to categorical variables and correlation test for analyses of BID index with anthropometric variables were used. Significance was accepted at p <0,05. **Results:** Body weight average was 72 ± 15 Kg, BMI: 28 ± 12 Kg/m^2 and AC: 97 ± 11 cm. According to BMI classification, 31% subjects in obese situation and 58% showed BID (19 F/2M) were found. Results also demonstrated that 40% were overweight and approximately 32% had some distortion on BID (13F / 2M). Finally, other 29% were female eutrophics subjects. The table below represents the distribution of different obesity and BID levels. There was not correlation between measured anthropometric variables and BID levels. **Conclusion:** The alteration in body image was more evident in obese women. However, in eutrophics women there was some presence of BID, possibly, revealing contradiction between individual and social needs. More studies about this theme are necessary to rise up the investigation of the occurrence of BID in individuals with different anthropometrics indexes.

	EUTROPHIC BMI (18,5–24,9)		OVERWEIGHT BMI (25–29,9)		OBESE BMI(>30)	
BID	N	%	N	%	N	%
Light (>70 <90)	2	9	17	6	8	25
Moderate (>91 <110)	3	7	2	8	1	19
Severe (>110)	2	5	14	6	6	14
NO BID	28	15	67	80	32	42

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THE COMBINATION OF AMLODIPINE 5 MG AND VALSARTAN 160 MG LOWERS BLOOD PRESSURE EFFECTIVELY AND SAFELY IN HYPERTENSIVE PATIENTS WITH METABOLIC RISK FACTORS NOT CONTROLLED BY MONOTHERAPY WITH CALCIUM CHANNEL BLOCKERS

J. Brachmann[1], R. Handrock[2], **S. Klebs[2]**. [1]*Dept. of Cardiology, Coburg Hospital, Coburg-Germany* [2]*Clinical and Regulatory Affairs, Novartis Pharma GmbH, Nuernberg-Germany*

Objectives: Metabolic risk factors (RF) are common in hypertensive patients. Adequate antihypertensive therapy therefore is crucial for CV risk reduction. Physicians often are reluctant to titrate to maximal doses of calcium channel blockers if controlled blood pressure (BP) levels are not achieved under the standard dose (e.g., amlodipine 5 mg (Aml 5) or felodipine 5 mg (Fel 5)) to avoid frequent adverse events like edema. Such patients could be treated with the fixed dose combination of amlodipine 5 mg and valsartan 160 mg (Aml 5/Val 160) instead. The study investigated whether the combination of Aml5/Val 160 is able to significantly improve BP reduction in hypertensive patients not adequately controlled by Aml 5 or Fel 5 (1:1). This subgroup analysis focused on patients with selected metabolic RF. **Design and Methods:** After wash-out, 138 patients with metabolic RF and a mean sitting systolic BP at trough (MSSBP) ≥ 160 and < 180 mmHg entered a 4-week treatment with Aml 5 or Fel 5 (phase 1, week 0–4). 117 patients whose BP was still uncontrolled at week 4 (MSSBP≥ 140mmHg), entered a second 4-week treatment phase (phase 2, week 4–8) with Aml 5/Val 160. **Results:** 64% of the patients included in the trial had at least one of the selected metabolic RF. 71% presented with fasting glucose levels ≥ 100 mg/dl, 33% had a history of diabetes mellitus type II, 28% a LDL cholesterol ≥ 160 mg/dl, and 38% triglyceride levels ≥ 200 mg/dl. At day 1, MSSBP in the intention-to-treat population (n=117) was 167.7±5.3mmHg. At week 4, MSSBP decreased to 153.9±8.5mmHg with Aml 5 or Fel 5. Subsequent treatment of patients not adequately controlled by Aml 5 or Fel 5 with Aml 5/Val 160 for 4 weeks reduced MSSBP to 142.0±12.6mmHg. Mean sitting diastolic BP (MSDBP) was 97.2±5.0mmHg at day 1. At week 4, MSDBP decreased to 90.1±6.8mmHg with Aml 5 or Fel 5. Treatment with Aml 5/Val 160 for 4 weeks reduced MSDBP to 85.6±8.5mmHg. The reductions achieved by Aml 5/Val 160 were statistically highly significant (p-value<0.0001). The overall BP reduction for MSSBP/MSDBP from day 1 to week 8 was 25.7±12.8mmHg/11.5±8.4mmHg. 7 cases of edema/leg swelling were reported with Aml 5 or Fel 5. One case was reported with Aml 5/Val 160 in phase 2. There were no clinically relevant changes in mean uric acid, creatinine, bilirubin, blood glucose, cholesterol, LDL cholesterol, and triglycerides observed with Aml 5/Val 160. **Conclusions:** In hypertensive patients with metabolic risk factors not controlled by Aml 5 or Fel 5, Aml 5/Val 160 is an efficacious and well-tolerated therapy, providing clinically relevant and statistically significant additional BP reductions.

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Study of the Periodic Alimentary Compulsion in Individuals with Different Anthropometrics Indexes

P.M. Lese[1], K.C. Guidini[1], K.C. Belli[1], C.M. Richter[1], A.C. Côrrea[1], D.C. Bündchen[1], T. Dipp[1], T.F. Panigas[1], M.C. Romero[1], P.R.N. Viecili[1–2]. [1]*Cruz Alta Heart Institute - ICCA* [2]*Cruz Alta University - UNICRUZ*

Background: In the last decades it was observed, in due to sociological and cultural phenomena, an important increase of upset alimentary incidence. The socio-cultural aspects appear as a central component of the body image, being responsible for confirming as a good physical fitness, symbolized by thinness. Such body is incompatible for most of people who put themselves in wrong behaviors and alimentary practices looking for the ideal body. Alimentary upset is characterized as behavior syndromes, being their criteria diagnoses very studied in the last 30 years. The alimentary compulsion is defined as an alimentary upset, that includes eating great amounts of food in a short time, at least two hours, and accompanied by a sensation of losing control on what is eaten, repeating behavoir two days in a row, weekly, in the last six months. The present episodes of alimentary compulsion are followed by anguish, and the individuals make no attempts to avoid such situation. Given to the crescent increase of the obesity, it could be supposed that one of the hypotheses of that abnormality would be related to the increase of the levels of alimentary compulsion in this population type. **Objective:** Evaluate the periodical alimentary compulsion levels (PAC) in individuals with different anthropometric indexes. **Methods:** 118 individuals were evaluated, 90 women (64 ± 10 years) and 28 men (63 ± 7 years). Body weight (kg), abdominal circumference (AC:cm) and body mass index (BMI:kg/m^2) were measured. Subjects with BMI ≥ 30kg/m^2 were considered obese. The Scale of Periodic Alimentary Compulsion (Freitas et al., 2001), to evaluate the alimentary compulsion was used. They were divided in groups of obese and no obese, with and without PAC. The data were expressed by mean±SD; Student t test for continuous variables, X2 for categorical variables and correlation test to evaluate cause-effect were used. P<0.05 was considered significant. **Results:** Of 118 studied subjects, 36 (30,5%) were obese. Data are shown in the table. 13 cases of PAC (11,02%) were found, being five (38 %) in individuals no obese and eight (62 %) in obese, the great majority in women. The men presented higher corporal weight and BMI than women (87 ± 16 x 67 ± 12Kg, p<0.001; 29 ± 5 x 27 ± 4Kg/m^2, p=0.003, respectively). Moderate correlation of AC (R=0.47) and BMI ≥ 30 (R=0.43) with PAC was only observed in men. Although PAC case was frequently find in the women, there was no correlation with the anthropometric variables. **Conclusion:** In this study, few cases of PAC were observed, more frequently in obese woman; however the in majority there was no PAC. The anthropometric variables assessed may not serve as predictors for PAC. Future researches are necessary, with the best objective to investigate the occurrence of alimentary upset.

Without PAC				With PAC			
BMI < 30		BMI ≥ 30		BMI < 30		BMI ≥ 30	
M	W	M	W	M	W	M	W
17	60	9	19	—	5	1	7

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Progress of a Cardiac Transplantation Program in a Public Pediatric Hospital in Argentina

H. Vogelfang[1], G. Naiman[1], A. Villa[1], M. Disanto[1], A. Charroqui[1], G. Moreno[1], R. Magliola[1], L. Quiroga[1], G. Burlli[1], M. De La Riba[1]. [1]*Hospital de Pediatría " [2]Prof. Dr.J.P.Garrahan"*

Methods and Results: Since July 2000 till July 2007, 35 patients have been registered: 14% from the capital city; 34% from the largest province and 52% from the rest of the country. Female: 60%; male: 40%.Younger than 12 months old: 3; 12 to 36 months: 10; 37 to 60 months: 4; older than 61 months: 18 (Median Age: 83 months). Weight in kg: lighter than 10kg: 8; 10kg to 20kg: 12; 21kg to 40kg: 10; more than 40kg: 5 (Median Weight: 21kg). Diagnoses: Dilated Cardiomyopathy: 23(66%); Congenital Heart Disease:6(17%); Restrictive Cardiomyopathy: 4(11%); Pulmonary Hypertension:2(6%). Registered for Cardiac Transplant: 30/35; for Heart and Lungs Block Transplant: 5/35. In the unique National Waiting List with 3 categories, according to clinical status: elective, urgency, emergency; were initialy registered: in elective status:17; urgency: 10 and emergency: 8. Died, without receiving a suitable donor, 15/35 (45%); 8/35 going on waiting with spaces of 20 to 1.601 days and 12/35 have been transplanted. Diagnoses for the 12 trasplanted were: Dilated Cardiomyopathy: 9(75%); Congenital Heart Disease: 2(17%); Restrictive Cardiomiopathy: 1(8%). Median age was 66 months; 50% younger than 36 months and 25% younger than 12 months. Median weight was 18 kg; 50 % lighter than 20 kg. Only one patient(1/12), a failed Fontan, was trasplanted maintaining her initial elective status; 2/12 in urgency status and 9/12 in emergency status. Five were assisted with Mechanical Ventricle Support and in 1 case, a 14 months old baby, an incompatible ABO donor was accepted using the West Protocol. Died immediatly due to primary organ failure 2/12. The follow-up from 1 to 81 months shows 1 sudden death at 50 months; 1 limphoproliferative disease(class I); one rejection episode in three patients; esteroid are discontinued after 6 months and patients continued his immunosuppresive treatment with Cyclosporine/Azathioprine or Mycophenolate/Cyclosporine in low doses when renal failure seems to appear**. Conclusions:** A sustained pediatric transplantation program is feasible in public hospitals, even in countries with comparative low budgets allowing accessibility for all citizen. Lack of suitable donors is the main obstacle. Mechanical Support and ABO incompatible donor protocols may be a resourceful palliative.

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CARDIOVERTER-DEFIBRILLATOR THERAPY AND ITS RELATION WITH SYSTOLIC AND DIASTOLIC FUNCTION IN PATIENTS WITH CARDIOMYOPATHIES

C. Killinger[1], **G. Ceconi[1]**, L. Shocron[1], M. Senesi[1], A. Cueto[1], M. Del Campo[1], C. Sun[1], G. Cabrejos[1], E. Beck[1], A. Papadopoulos[1]. [1]*DURAND HOSPITAL BUENOS AIRES*

Background: Severe damage of the ventricular function is one of the main causes of complex ventricular arrhythmia, regardless of cardiomyopathy etiology. Implantable cardioverter defibrillator (ICD) is the eligible therapy for these patients. Its records allow observation of the long term behaviour of arrhythmias. **Aim:** Evaluation of therapies and records supplied by ICD in several cardiomyopathies (CMP) to observe the long term behaviour of different arrhythmias and its correlation with alterations in the systolic and diastolic function, by means of echo Doppler. **Method:** 32 patients (p) were studied. 29 men, age: 62.3 years (16–81). of which 11p suffered chagas disease, 15p ischemic cardiomyopathy, 1p hypertrophic cardiomyopathy, 3p idiopathic cardiomyopathy, 2 p valvular heart disease. The following parameters were evaluated: time to 1st shock, appropriate or inappropriate shock; ventricular tachycardia: stable, unstable (UVT), sustained, unsustained, ventricular fibrillation, electric cardioversion number (ECN), percentage of right ventricular pacemaker. Left ventricular diastolic diameter (LVDD), ejection fraction (EF), mitral annulus plane systolic excursion (MAPSE), by means of Doppler-echocardiography; E and A waves, DTE, E/A from mitral flow; mitral annulus: Eta, Ata, Eta/Ata by means of Doppler tissue imaging (DTI). Therapies and records from ICD were correlated with parameters of the diastolic and systolic function. Statistical analysis: values are expressed as medians; Spearman rho correlation coefficient; Mann-Whitney test and p values <0.05 were considered significant. **Results:** Mean period of observation of ICD records was of 57 months. The EF (40 $\pm$ 14 %), LVDD (60 $\pm$ 12 mm), MAPSE, E, A, DTE, E/A, Eta, Ata, Eta/Ata did not correlate with the records nor with ICD therapy. UVT vs. EF correlated inversely, yet non significantly (ns) p=0.27. **Conclusions:** 1. In our population EF and diastolic function were not predictive of events in the long term follow up since they did not allow discriminating arrhythmia density nor ICD therapeutical response. 2. Greater decrease of EF predisposes development of unstable ventricular tachycardia.

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Clopidogrel response in acute coronary syndrome patients: Comparing different loading doses

F. Braga[1], G Lavall[1], R Guerreiro[1], A Godomiczer[1], M Spleta[1], C Segadaes[1], AC Neno[1], G Gouvea[1], R Villela[1], RH Lins[1]. [1]*CASA DE SAUDE SAO JOSE*

Background: Acute and subacute stent thrombosis are rare events, but extremely severe. High post treatment platelet reactivity (PR) is closely related with this occurrence. Higher Clopidogrel (CP) loading doses have been used to improve PR, and avoid such events. **Objectives:** Compare the PR after two different Clopidogrel loading doses in patients (pts) with non ST elevation acute coronary syndrome (NSTEACS), undergoing to Percutaneous Coronary Intervention (PCI). **Materials and Methods:** The pts were classified in three groups (G) according to the CP treatment: G1 (n=15) – Pre treatment with CP (300 mg bolus followed by a 75 mg per day for 24 hour minimal); G2 (n=7) – 300 mg bolus on the cath lab; e G3 (n=6) – 600 mg bolus on the cath lab. All patients received 200 mg/day Aspirin. PR was measured with light transmission aggregometry (LTA) 6h after PCI using Adenosine Diphosphate (ADP) in two concentrations (5 and 10 μmoles/ml) as the agonists. No other anti-platelet drug was used. **Results:** Cohort of 28 patients with NSTCACS (71.4% male, mean age 64.68 $\pm$ 10.05 years). Mean TIMI RISK score was 3.43 $\pm$ 1.4 (p=0.308 between groups). The mean ADP5 and ADP10 LTA were 26.07$\pm$14% e 55.14$\pm$9%; 29$\pm$13% ($p<0.001$); 34$\pm$17%; 66$\pm$12% e 39$\pm$16% ($p<0.001$) respectively for G1, G2 and G3. Bonferroni's post hoc analysis showed a difference between G1 vs.G2 and G2 vs.G3 for both ADP doses ($p<0.01$ for both), but not G1 vs.G3 (p=1.0 for both). **Conclusions:** In this sample, pts that received 300 mg CP loading dose on the cath lab had the poorest antiplatelet response with the highest post-treatment PR.

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Platelet Aggregation and Post Percutaneous Coronary Intervention Myonecrosis.

F. Braga[1], E Sophia[1], G Lavall[1], R Guerreiro[1], B Zappa[1], R Max[1], R Villela[1], B Hellmuth[1], P Medeiros[1], RH Lins. [1]*CASA DE SAUDE DESAO JOSE*

Background: Optimal platelet inhibition is an important therapeutic goal for patients undergoing to Percutaneous Coronary Intervention (PCI) in order to prevent the thromboembolic events. High post treatment platelet aggregation (PA) is closely related with this occurrence, possibly through distal embolization of platelet thrombi into the coronary microcirculation, resulting in myonecrosis. **Objective:** To determine the presence of myonecrosis (MN) according the degree of PA after elective PCI. **Methods:** PA was measured with light transmission aggregometry, 6 hours after the procedure, using ADP in two different concentrations 5 and 10 μmol /L as agonists (ADP5 and 10). We considered ADP5>40% and ADP10 > 50% as sub-optimal PA. Troponin I (TnI) was measured in two blood samples, 6 and 12 hours after PCI. MN was defined as a TnI > 1 ng/dl. All patients received dual antiplatelet therapy with Clopidogrel and Aspirin. **Results:** Cohort of 91 patients (pts) submitted to elective PCI. Thirty-eight pts (41.9%) showed ADP5 PA > 40% and 35 (38.5%) ADP10 PA> 50%. MN 6 hours after PCI was present in 7.7 vs 30 % (p= 0.004) for ADP5 and 9.3 vs. 31.4% (p=0.008) for ADP10 respectively for pts with optimal and sub-optimal PA. MN 12 hours was 16.7 vs. 48.8% (p=0.01) for ADP5, and 19.2 vs. 43.6% (p=0.012) for ADP10 respectively for pt with optimal and sub-optimal PA. In a multivariate analysis, an ADP5 > 40% was predictor of MN 12 hours after PCI. **Conclusions:** In this sample, PA was the only independent predictor of post elective PCI myonecrosis.

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OBESITY IN A COHORT OF PUBLIC EMPLOYEES MEDICAL SERVICE OF MENDOZA - ARGENTINA. Optimal Systematic Evaluation Program (OSEP STUDY) in Obesity

S. Mortaloni[1], O. Arrieta[1], S. Zizzias[1], L. Cammi[1], J Alvarez[1], A. Añó[1], S. Depine[1–2], S. Gimenez[1]. [1]*OBRA SOCIAL DE EMPLEADOS PÚBLICOS DE MENDOZA* [2]*Fundación Vida Saludable*

Introduction: There is enough evidence to say that obesity is associated with a higher risk of death. Even more, Obesity is now an epidemic disease in developed and developing countries. **Objectives:** Evaluate the situation of Public Employees of Mendoza, joint to a medical insurance service, for obesity, self perception of body weight, abdominal circumference and the relation with other cardiovascular disease risk factors. **Population** All the 109000 people joint to Public Employees Medical Service of Mendoza were abailable to be interviewed. 16060 of them where interviewed, in ages between 35 to 75 for men and 45 to 75 for women, from December 1st of 2003 to May 5th of 2006. **Methods:** We obtained height, weight, body mass index (BMI), abdominal circumference (AC), blood pressure (BP) in 2 times, blood fasting and random glucose and total cholesterol level. We asked for personal and familiar history, and self-perception for overweight and obesity. Statistical analysis is expressed in Mean (X) $\pm$ Standard Deviation (SD) or Relative Risk when applicable. Significance obtained by chi squared test is shown when $p<0.01$. **Results:** We obtained 16060 records, 9787 (60%) male, and 6273 (40%) female. 18% of men and 31% of women were in the normal weight group (BMI 18.5–24.9). 46% of men and 38% of women had BMI between 25 and 29.9kg/m2, 36% of men and 31% of women had Obesity (BMI >30). Women have significantly more Class III obesity (BMI>40) than men (3.78% vs 2.17%, $p<0.0001$). Abdominal circumference: Obese Men: X:109.84 $\pm$ 11.5, 95.87% were over 102cm. Obese women: X: 102.72 $\pm$ 12.44cm, 85.57% were over 88cm. 7.29% of normal weight women had high risk AC vs 0.64% of normal weight men ($p<0.0001$). Having BMI over 25kg/m2 was associated with higher possibilities of having Diabetes Mellitus, ($p<0.001$, RR 1.604 IC 95%: 1.509–1.704), high cholesterol level ($p<0.0001$, RR: 1.209, IC95%: 1.151–1.269), High Blood pressure (P <0.0001, RR: 1.596, IC 95%: 1.532–1.663) and Stroke (P=0.014, RR: 1.309, IC 95%:1.129–1.518). In the responses to the questions about self-perception of body weight, only 52.86% of patients on BMI 25–29.9kg7m2 group and 13.29% of obese patients answered according to their body weight. **Conclusions:** The prevalence of obesity in our population is similar than described by other authors in Europe and North America.The self-perception of obesity is very low, so it is a very important problem to solve when treating overweighted patients. The association between BMI and other cardiovascular risk factors is strong, so we must focus owr efforts in try obesity.

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Structural and funtional alterations of cardiac and skeletal muscle mitochondria in patients with congestive heart failure.

G. Guzman Mentesana[1], R. Cordoba[2], A. Baez[1], R. Dominguez[2], D. Comay[3], S. Lo Presti[1], W. Rivarola[1], P. Pons[4], R. Fretes[5], P. Paglini[1]. [1]*Cátedra de Física Biomédica, Facultad de Ciencias Médicas, Universidad Nacional de Córdoba, Córdoba, Argentina* [2]*Hospital de la Rioja, Argentina* [3]*Sanatorio Allende, Córdoba, Argentina* [4]*Centro de Microscopía Electrónica, Facultad de Ciencias Médicas, Universidad Nacional de Córdoba, Córdoba, Argentina* [5]*Cátedra de Histología y Embriologia, Facultad de Ciencias Médicas, Universidad Nacional de Córdoba, Córdoba, Argentina*

The heart is highly dependent on mitochondria for the energy required for contractility and other metabolic activities. Mitochondria represent 30% of the total volume of cardiomyocytes and provide almost 90% of their energy. Defects in mitochondrial structure and function have been associated to dilated and hypertrophic cardiomyopathies. Here we studied the structure and function of cardiac and skeletal muscle mitochondria obtained from patients with congestive heart failure (CHF) type III –IV, to establish a possible correlation. Cardiac and skeletal muscle biopsies (left ventricle and pectoral muscle) were obtained from 10 patients during surgery; then were divided into: control (n:4): young patients with interauricular communication and normal ejection fraction; and patients with CHF type III-IV (n:6). Part of the samples were fixed and analyzed using a Zeiss electronic microscope. For functional activity mitochondria were isolated by subcelullar fractioning, determining the activity of the respiratory chain analyzing complex CIII by spectrophotometry. Protein concentrations were determined by the Bradford method. Statistical analysis were done by ANOVA and $\chi 2$. CHF patients presented less and smaller cardiac mitochondria, with disrupted membrane and disorganized cristae when compared to the control group ($p<0.001$). Skeletal muscle from the CHF group presented mitochondria reduced in number and volume, alterations that were similar to those described for the heart. A correlation between both parameters (mitochondrial number and volume) was also obtained for the control group. The enzymatic activity of CIII complex (2.01 10–2 $\pm$ 3.1 10–3μm.min-1/mg prot) significantly decreased in cardiac tissue from the CHF group in comparison to the control one ($p<0.001$) as well as in the skeletal muscle: 3.658 10–2 $\pm$ 4.0 10–3 μm.min-1/mg prot for CHF patients and CIII: 1.518 10–1 $\pm$ 5.2 10–3 μm.min-1/mg prot for the control group ($p<0.05$). Recent studies have suggested that oxidative stress is related to heart failure. Here we found structural and functional alterations of cardiac mitochondria in the CHF group, which contributes to explain the systolic dysfunction that these patients present. In addition, they were associated with a decrease in complexes III enzymatic activity, which generates more reactive oxygen species, causing additional mitochondrial damage and probably stimulating the beginning of apoptosis. We also found a correlation between mitochondrial functional and structural alterations from cardiac and skeletal muscle samples. These findings are a contribution to the knowledge of the CHF physiopathology and would allow to obtain cellular information of the heart using a skeletal muscle biopsy.

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Inflammation/Lipid Score may outperform TIMI score in acute myocardial infarction treated by primary intervention.

J. Kasprzak[1], K. Kolodziej[1], M Wraga[1], JZ Peruga[1], M Krzeminska-Pakula[1].

Aim. Novel inflammatory and neurohumoral markers are potential prognostic factors after acute coronary syndromes. The aim of the study was to reassess the prognostic model after the first myocardial infarction (MI) treated with primary PCI (pPCI). **Methods.** 85 patients (20 females) aged 61±9 years admitted with first ST-elevation MI and treated with pPCI. Laboratory panel extended with IL-1, IL-10, MCP-1, sFASl, NT-proBNP, fibrinogen and CRP were sampled prior to intervention. Patients were followed-up with regard to the occurrence of death, MI or ventricular fibrillation during 12 month follow-up period. **Results.** 27% pts reached the composite endpoint. We defined univariate predictors of 1-year prognosis: IL-10 (p=0.0014), HDL-cholesterol (OR=7.5; 95% CI 1.9–30.1, p=0,0001), creatine kinase (CK, p=0.007)) and CK-MB (p=0.05), left ventricular ejection fraction (p=0.026), TIMI risk score (p=0.027) and white blood count/WBC (P=0.029). In multivariate logistic regression moel (86% correct, p=0,001) the independent prognostic factors were: HDL-cholesterol; HR=0,89 (0,81–0,98), p=0,0001; IL-10; HR=1,392 (1,01–1,96), p=0,014, and WBC; HR=1,39 (1,03–1,88), p=0,038. A prognostic score based on 3 factors: HDL<31,2 mg/dl, IL-10>0.4pg/ml, WBC>10800/mm^3 yielded Kaplan-Meier's HR=10.4 (p<0.0001) when 2 or 3 factors were present (event rate 0%, 17% and 80% for scores 0, 1 and 2or3, resp.). TIMI score at optimal ROC-defined threshold>3 offered low HR=2.37 (p=0.028). **Conclusions.** A simple prognostic score including white cell count, HDL-cholesterol and interleukin-10 concentration enabled optimized risk stratification and outperformed TIMI risk score in this study. These variables may better predict prognosis in patients reperfused with primary percutaneous intervention than Antman's TIMI score.

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Contrast Enhancement Score: optimal parameter for predicting local and global viability after myocardial infarction- a contrast echocardiographic study.

J. Kasprzak[1], M. Ciesielczyk[1], J Drozdz[1], M Kurpesa[1], M Kidawa[1], M Krzeminska-Pakula[1].

Aim. Myocardial contrast echocardiography (MCE) using iv contrast agent defines perfusion pattern early after myocardial infarction (MI) and can predict further clinical course. We aimed to optimized the prediction of left ventricular (LV) functional recovery 2 months after first MI using iv MCE. **Methods.** We studied consecutive 50 patients (pts) successfully treated with primary angioplasty in their first ST-elevation MI (mean age 57±10 years, 28% females). MCE was performed using iv boluses of Optison 3–5 days after MI and regional wall motion (WM) and perfusion were scored in 18-segment model using real time Coherent Contrast Imaging mode. Contrast enhancement (CE) was scored on a 3-point scale: 1=complete, 0,5=partial or delayed, 0=absent myocardial opacification and on a simplified 2-point scale (1-complete and homogenous, 0-any abnormality). Perfusion indices were calculated for MI-related area only: CEscore as a sum of scores in infarcted area and CEIndex as an average contrast score in infarct zone. Change in local function and in WMscore index and ejection fraction was assessed in transthoracic echocardiogram performed after 2 months. **Results.** Perfusion could be assessed in 96,7% of LV segments and in 98.6% of 293 asynergic segments in the infarcted area. All normokinetic segments presented with normal perfusion. Mean CEScore in asynergic segments was 3,2±1,9 (range 0–8) and CEindex 0,62±0,3 (range 0–1); using simplified scoring (1-complete and homogenous, 0-any abnormality), CEScore0–1 2,9±1,9, CEIndex0–1 0,56±0,33. Accuracy for segmental functional recovery was significantly improved by perfusion assessment (p<0.001 vs 0.025 for WM), with positive, negative predictive value and accuracy for functional recovery 84%, 72%, 79% (perfusion based) vs. 69%, 41% and 54% (WM based). Kappa test (k=0.23) showed weak agreement between perfusion and WM indices of functional improvement. CEScores but not CEIndexes correlated with the improvement of LV ejection fraction and WM score index after 3 months (CEScore0–1: r=0.41, r=0.46 respectively). Threshold values predicting improvement in WMscore index were: CEScore>1 (ROC AUC 0.826), CEScore0–1 > 1(ROC AUC 0.848), and weaker for CEIndex > 0.5(ROC AUC 0.725), CEndex0–1 > 0.33(ROC AUC 0.761). **Conclusions.** We propose a semiquantitative approach for predicting segmental recovery after myocardial infarction, with CEScore predicting WMscore index improvement after 2 months. Prediction of EF change is less accurate although CEScore correlates with ejection fraction. A simplified scoring system (normal/abnormal) offers optimal prediction values.

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Coronary flow reserve in infarct-related artery.is not altered by Intracoronary administration of bone marrow stem cells.

J. Kasprzak[1], M Plewka[1], P Lipiec[1], K Wierzbowska-Drabik[1], T Robak[1], A Korycka[1], T Jezewski[1], JZ Peruga[1], M Krzeminska-Pakula[1].

Background. Intracoronary administration of mononuclear bone marrow cells (MBMC) has been postulated as a method of restoring myocardial function after acute myocardial infarction. However, there are no available data regarding the direct effect of administration of cellular suspension in the infarct-related artery, excluding the potential of microembolization and reducing vasodilatory reserve in the treated region. Thus, we aimed to test coronary flow reserve (CFR) in infarct-related left anterior descending coronary artery (LAD) before and after the intracoronary progenitor cell therapy. **Methods.** We studied 18 patients undergoing intracoronary MBMC administration on day 5–8 after first, LAD-related myocardial infarction with resting ejection fraction <45% (mean age 54±10; 5 females). All pts received 20ml of cellular suspension containing 1.7±0.72 x 10e8 MBMC. All patients had successful primary PCI with TIMI3 postprocedural flow. Prior to cellular therapy, same day noninvasive CFR assessment (baseline and after iv. adenosine 0.14 mcg/kg/min recording of distal LAD flow) was performed and repeated within 24 hours after the procedure. Feasibility of the CFR was 100%. **Results.** Resting and post-adenosine heart rate and blood pressure was not significantly different before and after MBMC administration. LAD CFR remained unchanged after MBMC as compared to baseline: 2.2±0.4 vs 2.3±0,8, similarly to resting and post-adenosine diastolic pressure halftime 282±95 vs 248±97ms and 318±141 vs 312±204ms. Resting diastolic LAD flow before and after MBMC was 31±7cm/s vs 26±9cm/s, resp. (p=0.06) and peak diastolic LAD flow before and after MBMC was 68±18cm/s vs 57+16cm/s, resp. (p=0.002), probably reflecting more difficult adjustment of beam and velocity vector after MBMC in pt early after arterial puncture. We identified age and BMI as positive and and platelet count and left atrial size as negative predictors of CFR decrease (p<0.014 for the backward logistic regression model with r^2=0.89). Platelets and left ventricular systolic diameter was predictive for the direction of change of CFR after MBMC administration. **Conclusion.** For the first time, a neutral effect of intracoronary injection of MBMC onto flow velocity reserve of infarct-related artery has been demonstrated using transthoracic Doppler measurements. A small subset demonstrating numeric decrease in LAD CFR is characterized by lower platelet count and smaller endsystolic left ventricular diameter.

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EFFECTS OF WEIGHT LOSS AFTER GASTRIC BYPASS ON LEFT VENTRICULAR FUNCTION ASSESSED BY TISSUE DOPPLER IMAGING

T. F. Cianciulli[1–2], **A. M. Bermann**[1], J. A. Lax[1], M. C. Saccheri[1–2], B. E. Linetzky[1], L. A. Morita[1], J. A. Gagliardi[1], A. N. Dorelle[1], H. A. Prezioso[1], L. A. Vidal[1]. *[1]Hospital " [2]Dr. Cosme Argerich" [3]. [4]Researcher of the Secretary of Health, Government of the City of Buenos Aires*

Background: obesity is an independent risk factor for the development of heart failure. Weight loss is routinely recommended to improve symptoms, decrease risk and may change left ventricular (LV) function and geometry. **Objective:** To evaluate the effects of substantial weight loss on hemodynamic, echocardiographic and tissue Doppler imaging parameters of LV systolic and diastolic function. **Methods:** we performed standard echocardiography and tissue Doppler imaging in 16 patients (10 female; mean age of 41.2 ± 10.5 years; range from 25 to 63 years), with severe obesity before and after gastric bypass. **Results:** Patients lost 46.5 ± 16.7 kg over 10.7 ± 4.7 months. After weight loss, systolic and diastolic blood pressure decreased (135.2 ± 11.9 to 122.9 ± 17.6 mm Hg, p <0.02 and 86.4 ± 8.5 to 75.2 ± 11.8 mm Hg, p < 0.01, respectively. Adjusted LV mass decreased (135.6 ± 36.6 to 127.1 ± 27.9 g/m, p < 0.05). The ratios of early-to-late diastolic mitral inflow velocities increased (1.14 ± 0.35 to 1.36 ± 0.35, p < 0.02). Late diastolic tissue Doppler velocities decreased at septal mitral annulus (11.2 ± 2.1 to 9.7 ± 1.9 cm/sec, p < 0.008. Right ventricular dimension, left atrial dimension, LV dimensions and LV systolic function were normal and there was no change following surgery. **Conclusions:** In patients with severe obesity, significant weight loss results in a decrease of blood pressure, favorable changes in left ventricular geometry and improvement in left ventricular diastolic function.

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Economic Benefit of Physical Activity Program for Hypertensive Subjects: Variation In Cost-Dose-Medication

T. Dipp[1], D.C. Bündchen[1], T.F. Panigas[1], K.C. Belli[1], C.F. Panigas[1], C.M. Richter[1], A.M.R. Pereira[1], E.G. Barbosa[1], J.Z. Klafke[1], P.R.N. Viecili[1–2]. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background: among the risk factors of cardiovascular disease, sedentary style has been presented as an important role. Exercise program (EP) optimizes the treatment of hypertension disease and can reduce the amount of loaded drug therapy, as well as its costs. **Objectives:** Assess the economic benefit of exercise program for hypertensive subjects at cost and loaded drug therapy variation. **Methods:** 47 hypertensive sedentary subjects, 59.7 ± 6 years, were randomized to participate in an exercise program (EG) and a control group (CG), to continue sedentary style. Drug therapy such as beta-blockers (BB), angiotensin-converting enzyme inhibition (ACE), diuretics, calcium channel blockers (CC-B) and angiotensin receptor blockers, alone or in association were considered. Drug variation was measured before and after EP considering the quantity of drugs by total milligrams day (mg). Subjects performed 40 minutes of aerobic exercise, resistance exercises, three times a week, for three months. They were assessed at treadmill test with Bruce protocol before and after the study, to obtain maximum consumption of oxygen (VO2 mαx). Heart rate (HR), systolic (SBP) and diastolic blood pressure (DBP) were assessed, at rest, before every exercise session. Values of p ≤0,05 were considered statiscally significant. **Result:** There was significant decreased in SBP (148.5 ± 20 x 134 ± 15.7 mmHg; ? 10 %, p=0.008), and DBP (91.3 ± 14.2 x 81.9 ± 10.4 mmHg; p=0.001) in EG, but there was no difference in CG. There was important load reduction in BB, ACE, CC-B in the EG; however, there was important load increase BB and CC-B in the CG. GE had important reduction in total load in 16 % (p=0.003) while the CG had a tendency to increase by 11 % (p=0.06). There were important cost reductions by 19 % in EG and a tendency to increases of 10 % in CG. The data are in the table below. **Conclusion:** The hypertensive subjects assessed at exercise program had an important reduction in blood pressure levels, reduction in daily drugs quantity, as well as in treatment costs of loaded drugs therapy.

Drugs: mg		PRE	POS	? %	P
BB	EG	1350	1100	-18	0.03
	CG	570	720	20.8	0.02
ACE	EG	353	233	- 33	0.02
	CG	635	715	12	0.08
CC-B	EG	1990	1810	- 9	0.04
	CG	2140	2444	12	0.03
Total Load: mg	EG	4528	3793	- 16	0.003
	CG	3905	4395	11	0.06
$US Cost	EG	1026.6	829.4	- 19.2	0.0002
	CG	1126.6	1245.5	10.6	0.08

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Exercise-induced abnormal pulmonary arterial pressure response in young athletes – normal physiology or precursor of endothelial damage?

T. Möller[1], K. Peersen[2], PM. Fredriksen[3], H. Holmstrøm[4], E. Thaulow[4]. [1]*Pediatric Department, Vestfold Hospital, Tønsberg, Norway* [2]*Department of Cardiology, Vestfold Hospital, Tønsberg, Norway* [3]*Clinic of Rehabilitation, Faculty of Medicine, University of Oslo and Rikshospitalet-Radiumhospitalet Medical Centre, Oslo, Norway* [4]*Pediatric Cardiology Unit, Faculty of Medicine, University of Oslo and Rikshospitalet-Radiumhospitalet Medical Centre, Oslo, Norway*

Introduction: Pulmonary arterial pressure (PAP) is considered to remain nearly unchanged during exercise. Earlier studies have shown an abnormal rise in PAP during exercise in endurance-trained professional athletes. **Methods:** A group of 68 healthy volunteers (age 14 to 25 yrs) were studied by cardiopulmonary exercise testing, echocardiography at rest and during supine cycling with target heart rate 160-min. Eight individuals with extremely high (> 2 SD) maximal oxygen uptake were defined as highly endurance-trained athletes (ETA). Their data were compared to 16 age- and gender-matched normal trained individuals (NTI). **Results:** At rest, right ventricular performance as measured by tricuspid annulus plane systolic excursion (TAPSE) was equal in both groups (mean 23/23). Exercise peak systolic PAP raised above 50 mmHg in 6 of 8 ETA (mean 48, median 55, range 17 to 66) but only in 1 (51 mmHg) of 16 matched NTI (mean 31, median 31). The difference is statistically significant ($p=0.008$ [-28.8,-4.8]) **Discussion:** The mechanism of abnormal PAP elevation in high cardiac output situations may be due to pulmonary blood flow beyond dilative capacity in the pulmonary vascular system. Pressure levels above 35 mmHg are commonly considered to damage pulmonary endothelium and to be a possible precursor of permanent pulmonary hypertension. Young athletes with abnormal PAP response may have high pressure load in their pulmonary vessels several hours a day for years while maintaining their endurance training program. **Conclusion:** Non-professional highly endurance-trained individuals show abnormal pulmonary pressure response during exercise. The common definition of normal range in pulmonary arterial pressure may have to be reconsidered.

P706

ECHOCARDIOGRAPHIC DETECTION OF RENAL CELL CARCINOMA EXTENDING FROM INFERIOR VENA CAVA INTO RIGHT ATRIUM.

T. F. Cianciulli[1–2], M. C. Saccheri[1–2], J. A. Lax[1], L. A. Morita[1], **H. J. Altube**[1], J. F. Codone[1], M. T. Lioy Lupis[1], A. N. Dorelle[1], H. A. Prezioso[1], L. A. Vidal[1]. [1]*Hospital " [2]Dr. Cosme Argerich" [4]Researcher of the Secretary of Health of the Government of the City of Buenos Aires.*

Background: Patients with renal cell carcinoma (RCC), complicated by a tumoral thrombus, extended from the renal vein into the vena cava and right atrium, in the absence of lymph node involvement or metastasis disease, will not be associated with adverse prognosis and complete resection is possible. Detection of a mass in right atrium (RA) and inferior vena cava (IVC) should alert the echocardiographer about the possibility of caval spread and intracardiac extension of infradiaphragmatic tumors through caval route, although infrequent, can be seen with renal cell carcinoma, Wilms' tumor, hepatocarcinoma, uterine and adrenal tumors. The lack of information available regarding the prevalence of these complications led us to undertake the present study. **Objectives:** the aim of this study was to assess the prevalence of RCC, complicated by a tumoral thrombus, extended from the renal vein into the vena cava and right atrium that were treated with radical nephrectomy and thrombectomy and evaluate the usefulness of transthoracic echocardiography (TTE) in detecting the extensions of the RCC into the IVC and RA. **Methods:** The operation consisted in the radical nephrectomy associated to the vena caval thrombectomy, under extracorporeal circulation, utilizing a multidisciplinary team composed by urologists, vascular and cardio-thoracic surgeons. 26 (11,4%) of a total of 227 patients with RCC had tumor thrombus extended to the IVC and/or the right atrium: 21 (9,3%) extended to the IVC and 5 (2,2%) extended to the RA. We evaluated the surgical techniques used and the perioperative mortality and morbidity in these patients. **Results:** In nine patients we detected liver metastasis and underwent quimioembolization. In 17 patients, mean age 54 years (45 to 69 years), 10 males, without metastasis, underwent radical nephrectomy with cavotomy, tumor thrombus removal, and lymphadenectomy. In 9 patients the affected kidney was the right. A Chevron incision with movilization of the right lobe of the liver was made and cross-clamping of IVC above and below the tumor thrombus and then cavotomy were performed in 12 patients. For right atrial tumor extension, a chevron incision was made and median sternotomy with extracorporeal circulation and hypothermic circulatory arrest were performed in 5 patients. 17 patients were tumor free (follow-up range, 9 to 18 months) and 9 died due to multiple metastases during the follow-up. **Conclusions:** this study supports the role of TTE in the preoperative evaluation of patients with renal cancer extended to the IVC and RA which will be benefited with extensive surgical treatment. Preoperative and intraoperative transesophageal echocardiogphy were not necessary to assess these patients.

P707

Peripheral artery disease – still underestimated in diagnostic and pharmacotherapy treatment

LJ. Banfic[1], M. Vrkic Kirhmajer[1], E. Fucak[1], I. Sakic[1]. [1]*University Hospital Center Zagreb*

Background: Peripheral artery disease (PAD) is an independent predictor of cardiovascular mortality. Despite PAD is one of the most prelevant condtions, it is also commonly neglected condition by medical practiotioners and society in general. Large percent of patients who suffer from PAD are under-diagnosed and uder-treated. Limb amputation is result of late diagnosis and ineffective primary prevention. **Aim:** The aim of this retrospective study was to anayize demographic, clinical and angiography parameters in patients hospitalized for PAD, to evaluate prehospital medication of cardiovascular risk factor and to determine gender releted differences in analyzed parameters. **Methods:** In 2006, during a twelve months period, we evaluated 160 patients hospitalized in Vascular department for sympthomatic PAD. All patients were evaluated for claudication distance, ABI (ankle-brachial index), prehospital medication and cardiovascular risk factors (hypertension, hyperlipidemia, smoking, diabetes mellitus, previous myocardial infarction and CVI). Duplex sonography and DSA (digital substraction angiography) of lower extremities were performed in all included patients. **Results:** Mean age was 66 years (SD 10.6), and 64% were male. Mean estimated claudication distances was 135m, and mean ABI was 0.62. Hypertension had 61%, diabetes had 26%, while 48% were current smokers. Mean total cholesterol level was 5.2 mmol/l (SD 1.2), mean LDL 3.1 mmol/l (SD 1.1), mean HDL 1.2 mmol/l (SD 0.5). Previous myocardial infarct had 21%, prior CVI had 10%. Antiplatelet therapy had been given to 79%, statins to 70% and ACE inhibitors to 46%. According to DSA, majority had diffuse form of PAD, 23% had illiacofemoral and 14% had infrapopliteal disease. Population of women was significantly older (70 SD 11.4 vs. 64 SD 9.9, $p=0.001$). Women had shorther claudication distances (54 SD 66 vs. 156 SD 290, $p=0.008$), although there were no gender differences in angiographic and haemodynamic parameters. We also didn't find significant gender differences in evaluated cardiovascular risk factors. **Conclusion:** Patients referred to hospital foy symptomatic PAD already had moderate or severe limb ischemia. In majority of patients the disease is diffuse or multisegmental. Prehospital medication and risk factors reduction is not appropriate. Although the claudication distance is shorter in women, there is no evidence that women had more severe PAD. The reason for that could be comorbidities associated wit aging, since wome with symthomatic PAD are significantly older than male patients. Early diagnosis is crucial for improving patients's quality of life reducing the risk for other cardiovascular events. It is necessary to promote awareness of PAD, especially in primary care.

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Carotid artery stenting improves parameters of cerebrovascular haemodynamics

D. Cerna[1], J. Veselka[1], P. Zimolova[1], P. Blasko[1], J. Fiedler[1], R. Duchonova[1], D. Zemanek[1], M. Maly[1], P. Hajek[1]. [1]*CardioVascular Center, Department of Cardiology, University Hospital Motol, Prague, Czech Republic*

Background: Carotid artery stenting (CAS) decreases the risk of tromboembolic cerebral events, both in patients with symptomatic and asymptomatic haemodynamic significant carotid artery stenoses. It also increases intracerebral blood flow, after intervention. The purpose of this study was to investigate by extracranial Doppler ultrasonography cerebral haemodynamics before and after CAS. **Methods:** Fifty patients (66 ± 18 years; 26 males) with unilateral high-grade carotid artery stenosis (symptomatic > 50%, asymptomatic > 70%) were prospectively observed after CAS. Maximum systolic velocity (PSV), pulsatility (PI) and resistive (RI) indexes were measured in the internal carotid artery before (1 day) and after (at 2, 30 days, 3, 6 and 12 month) CAS. **Results:** In a total of 50 treated arteries in 50 consecutive patients, 52 stents were deployed successfully. The primary technical success rate of CAS was 100 %. The overall number of major adverse cerebrovascular events (death, stroke or myocardial infarction) through the follow up was 2 % (1 case) at this group of patients. PSV decreased significantly (at average about 191 ± 43 cm/s ($p < 0.001$)) after CAS and it didn't change during the follow-up period. PI increased from 1.04 to 1.19 ($p < 0.001$) and RI from 0.591 to 0.690 ($p < 0.001$) immediately after the procedure with a subsequent increase during the 12-month follow-up up to 1.23 ($p < 0.001$) and 0.711 ($p < 0.001$) respectively. **Conclusions:** These results suggest that CAS of unilateral high-grade carotid artery stenosis improve cerebral haemodynamics in mid-term follow-up.

P709

Moderate altitude conditions may cause hypoxia and abnormal pulmonary arterial pressure response at rest and during exercise in patients with atrial or ventricular septal defect

T. Möller[1], PM. Fredriksen[2], H. Holmstrøm[3], J. Hallén[4], E. Thaulow[3]. [1]*Pediatric Department, Vestfold Hospital, Tønsberg, Norway* [2]*Clinic of Rehabilitation, Faculty of Medicine, University of Oslo and Rikshospitalet-Radiumhospitalet Medical Centre, Oslo, Norway* [3]*Pediatric Cardiology Unit, Faculty of Medicine, University of Oslo and Rikshospitalet-Radiumhospitalet Medical Centre, Oslo, Norway* [4]*Norwegian School of Sport Sciences, Oslo, Norway*

Introduction: Hypoxia and abnormal pulmonary pressure response (AR) during exercise have been observed in healthy individuals. AR has been shown to correlate with susceptibility to high altitude pulmonary edema. It is not known whether moderate altitude can cause or augment these abnormal reactions in numerous patients with minor or surgically closed ventricular septal defect (VSD) or atrial septal defect (ASD) that might have caused increased pulmonary vascular reactivity early in life. **Methods:** 11 patients with ASD or VSD (10/11 surgically closed, age 14 to 25 yrs) were examined by echocardiography at rest and during supine cycling at sea level. The patients then rested in a low-pressure chamber for 2 hours at 2500 meters / 8200 feet altitude. Oxygen saturation (SpO2), right ventricular performance and pulmonary arterial peak systolic pressure (PAP) were monitored. Exercise echocardiography was repeated before descent. **Results:** During exercise at sea level 3 patients showed abnormal PAP response > 40 mmHg (44 to 56), none had hypoxia (mean 98.6%). After 120 minutes resting at moderate altitude mean PAP increased from 24 mmHg at sea level to 32 mmHg, 3 patients showed PAP increase above 40 mmHg (43 to 45), mean SpO2 had fallen to 94% (88 to 98). During altitude exercise mean PAP raised to 49 mmHg, 9 patients showed PAP > 40 mmHg (41 to 63), mean oxygen saturation dropped to 81%, in 3 patients SpO2 decreased below 80% (68 to 79). 2 of these patients had simultaneously hypoxia and pressure increase above 50 mmHg. No patient had symptoms beyond dizziness at rest or fatigue during altitude exercise. **Discussion:** Moderate altitude simulates the atmospheric condition in mountainous areas or in pressurised commercial airplanes. Like many other people patients with closed VSD or ASD may be exposed to these conditions for hours (airplane), days or months or even permanently

(mountains) with or without physical strain. It is commonly assumed that patients without shunts between pulmonary and systemic circulation would not show major hypoxia or changes in pulmonary vascular resistance. Some of our patients showed both increased pulmonary vascular resistance and failing oxygen transport at moderate altitude without major symptoms. When exercising in altitude almost 9 of 11 patient showed PAP rise commonly considered pathological. **Conclusion:** There might be a significant risk of hypoxia and pulmonary hypertensive reaction in patients with minor or surgically closed ASD or VSD when exposed to moderate altitude. Exercise in altitude seems regularly to provoke or augment abnormal pulmonary vascular resistance despite surgical repair early in life.

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Aspirin and Clopidogrel response in patients with acute coronary syndrome

F. Braga[1], G Lavall[1], A Sterque[1], F Albuquerque[1], G Gouvea[1], AC Neno[1], J Kezen[1], R Max[1], E Sophia[1], B Hellmuth[1]. [1]*CASA DE SAUDE SAO JOSE*

Background: The antithrombotic therapy with Aspirin (ASA) and Clopidogrel (CP) is established as the standard therapy in patients presenting with acute coronary syndromes (ACS) undergoing percutaneous coronary intervention with stents. However, there is considerable heterogeneity in the individual response to each of these drugs. **Objective:** To correlate the therapeutic responses to ASA and CP in patients admitted in with non ST-elevation ACS. **Materials and Methods:** We retrospectively analyzed 15 patients admitted in our coronary unit with ACS that were submitted to PCI. All patients were treated with 300 mg loading dose of CP followed by 75 mg per day and 200 mg of ASA for 24h. The light transmission aggregometry (LTA) was tested 6h after the PCI. The CP response was measured using ADP as agonist in two concentrations (5 and 10 Mmoles) and the ASA response with aracdonic acid (AA-0.5 Mmol). **Results:** Cohort of 15 patients (93.3% male, mean age 63.73 +- 12.7 years). The mean TIMI Risk score was 3.13 ±1.64. The median LTA was 25%, 37% and 3% respectively for ADP5, ADP10 and AA. The Kendall tau correlation coefficients were 0.418 (p=0.035) and 0.481 (p=0.014) respectively between ADP5 and AA, and ADP10 and AA. Kappa statistic for values exceeding the median was 0.602 (p=0.019) for both relations. **Conclusions:** In this small group of patients, the therapeutic responses for ASA and CP was significant correlated.

P711

Parameters of right ventricular function in predicting exercise capacity as a determinant of VO2max in patients with dilated cardiomyopathy

J. Vormbrock[1], G. Plehn[1], S.A. Machnick[1], C. Zuehlke[1], H.J. Trappe[1]. [1]*Department of Cardiology, Ruhr- University Bochum*

It has previously been demonstrated that right ventricular ejection fraction (REF) is a better parameter in predicting functional capacity and prognosis in patients with advanced dilated cardiomyopathy (DCM). Since REF as an index of right ventricular contractility is sensitive to afterload, endsystolic pressure volume relationship (ESPVR) as an afterload independent index may improve evaluation of right ventricular function. To prove this thesis both indices of right ventricle (RV) function and the left ventricular ejection fraction (LEF) were related to parameters of contemporary capacity in DCM patients. **Methods:** 16 patients with DCM were examined for exercise testing. Right heart catheterisation using a fast response thermo dilution catheter was used during incremental bicycle ergometry. Left ventricular EF was simultaneously measured by echocardiography. In the following day patients underwent spiroergometry. **Results:** Left and right ventricular ejection fraction at rest did not show any significant correlation to exercise capacity measured by VO2max, whereas change of left ventricular ejection fraction during exercise (r= 0,47; p< 0,05), right ventricular ejection fraction (r= 0,69; p< 0,05) at maximum exercise and pulmonary arterial pressure (r= 0,61; p<0,05) at maximum exercise showed a significant correlation to VO2max. The parameter with the best correlation to VO2max was the increase of ESPVR during exercise capacity. **Conclusion:** The adaptation of the right ventricle to physiological increase of afterload is better demonstrated in the change of right ventricular ESPVR than in the change of right ventricular ejection fraction. The increase of right ventricular ESPVR seems to be an important determinant in predicting exercise capacity in patient with IDCM measured by VO2max.

P712

The Dose-Response Curve For Exercise And Blood Pressure: How Many Sessions Are Needed?

D.C. Bündchen[1–3], T.F. Panigas[1], C.M. Richter[1], T. Dipp[1], C.F. Panigas[1], K.C. Belli[1], J.L.C. Pippi[1], J.Z. Klafke[1–2], T. Carvalho[3], P.R.N. Viecili[1–2]. [1]*Cruz Alta Heart Institute - ICCA* [2]*Cruz Alta University - UNICRUZ* [3]*Santa Catarina University - UDESC*

Background: The blood pressure (BP) lowering effects of exercise are known and pronounced, however, there are some hypotheses suggesting that the curve dose-response of exercise BP be flat, probably by weak relationship between the weekly training frequency, time per session or intensity of exercise training and the magnitude of the BP reduction. Objective: We studied the behavior of BP in hypertensive subjects submitted to an exercise training program (ETP). **Methods:** 88 controlled subjects, 58 ± 11 years, were randomized in: experimental group (EG), with 48, that performed the ETP, by 3-month; and control group (CG), 40 subjects that stayed sedentary life. The systolic (SBP) and diastolic (DBP) blood pressure were measured at rest, before each 36 sessions. The BP differences, the variation rate (?%), and the maximum hypotension effect (MHE) were observed, among the sessions. Data were expressed as mean ± SD. Student t test and p<0.05 were used. **Results:** All date were in the table. After ETP, there was an important decrease on BP. Surprisinly, there was an important effect after the first session, and almost MHE after the fifth session. On the other hand, after this, there was no important hypotensive effect until the ETP end. In CG there was no effect. **In conclusion:** We demonstrated that exercise had a very important role to hypertensive treatment, and that the curve dose-response for exercise in hypertensive subjects may decline suddenly, just after the first session.

Sessions		mmHg	Differ/mmHg	? %	MHE %	p
2nd x 1st	SBP	137 ± 19 X 144 ± 20	- 7	- 5	50	0.02
	DBP	83 ± 13 X 88 ± 14	- 5	- 7	80	0.005
3rd x 2nd	SBP	134 ± 18 X 137 ±19	-3	- 2	—	NS
	DBP	83 ± 13 X 83 ± 13	—	—	—	NS
5th x 4th	SBP	132 ± 15 X 136 ± 18	- 4	- 3	—	NS
	DBP	81 ± 9 X 82 ± 10	- 1	—	—	NS
5th x 1st	SBP	132 ± 15 X 144 ± 20	- 12	- 9	80	0.00004
	DBP	81 ± 9 X 88 ± 14	- 7	- 8	97	0.0003
5th x 2nd	SBP	132 ± 15 X 137 ± 19	- 5	-3	—	NS
	DBP	81 ± 9 X 83 ± 13	- 2	-2	—	NS
12th x 5th	SBP	132 ± 19 x 132 ± 15	—	—	—	NS
	DBP	82 ± 11 X 81 ± 9	-1	—	—	NS
12th x 1st	SBP	132 ± 19 x 144 ± 20	- 12	-8	80	0.00005
	DBP	82 ± 11 X 88 ± 14	- 6	-7	85	0.01
24th x 1st	SBP	133 ± 19 X 144 ± 20	- 11	-8	74	0.00005
	DBP	83 ± 10 X 88 ± 14	- 5	-7	80	0.03
36th x 1st	SBP	129 ± 17 x 144 ± 20	- 15	-10	100	0.00005
	DBP	81 ± 11 X 88 ± 14	- 7	-9	100	0.0005

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ASSESSMENT OF PLANIMETRIC MITRAL VALVE AREA IN PATIENTS WITH RHEUMATIC MITRAL STENOSIS USING 16-ROW MULTIDETECTOR COMPUTED TOMOGRAPHY:COMPARISON WITH TRANSTHORACIC TWO-DIMENTIONAL ECHOCARDIOGRAPHY

O. Ucar[1], M. Vural[2], Z. Cetin[1], S. Gokaslan[1], T. Gursoy[1], B. Demircelik[1], A. Selvi[2], S. Aydogdu[1]. [1]*ANKARA NUMUNE EDUCATION AND RESEARCH HOSPITAL, DEPARTMENT OF CARDIOLOGY* [2]*ANKARA NUMUNE EDUCATION AND RESEARCH HOSPITAL, DEPARTMENT OF RADIOLOGY*

Background: Rheumatic mitral valve disease is still common in some regions of the world. Transthoracic two-dimentional echocardiography (TTE) is gold standart for the diagnosis and further evaluation of rheumatic mitral valve disease. Multidetector computed tomography (MDCT), which is mainly used for coronary examination, is a promising technique for the evaluation of heart valves. **Objective:** The aim of our study was to evaluate planimetry of the mitral valve area (MVA) with 16-slice MDCT in comparison with TTE in patients with rheumatic mitral stenosis. **Materials and Methods:** Twenty-one patients (14 female, 7 male;mean age 43±8) with rheumatic mitral valve disease referred for the evaluation of coronary arteries with 16-row MDCT were recruited. All patients were in sinus rhytm. Patients who had a prescan heart rate > 70 bpm were given a single oral dose of 100 mg metoprolol one hour before the examination if there is no contraindication. The MDCT acquisition was performed within a single breath hold using a 16-row scanner (Toshiba Medical Systems, Otawara, Japan). Contrast enhancement was achieved with 120 ml of nonionic contrast material. The ECG tracing was recorded during acquisition for retrospective reconstruction. Image reconstruction was performed in 5 % steps through the entire R-R interval. Multiplanar reformats was reconstructed on a Vitrea® post-processing workstation (Vital images, Plymouth, Minnesota). In four-and two-chamber views, the anteroposterior long axis was first positioned across the center of the mitral valve orifice to the apex of the left ventricle. The second plane was adjusted perpendicularly to the mitral valve orifice at the tip of the leaflets to obtain the parasternal short-axis view and the MVA was measured in early diastole. Echocardiographic planimetry of MVA was also performed in early diastole in the standart parasternal short-axis view. Comparisons of MVA obtained by MDCT and TTE were analyzed by SPSS 11.0 package (SPSS Inc, Chicago, Illinois) using paired *t* tests and Pearson correlation. Statistical significance was defined as $p < 0.05$. **Results:** Planimetry of the MVA with MDCT did not differ from TTE (1.95 ± 0.43 cm^2 vs 1.91 ± 0.49 cm^2, $p=0.773$) and there was a good correlation between two values ($r = 0.901$, $p<0.001$). **Conclusion:** MDCT provides accurate planimetry of the mitral valve area in patients with rheumatic mitral stenosis. In patients undergoing 16-row MDCT coronary angiography, concomitant rheumatic mitral stenosis can be diagnosed and evaluated.

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Radiation dose of dual-source CT is much higher compared to invasive coronary angiography

R. Duchonova[1], T. Adla[2], J. Veselka[1], J. Neuwirth[2], L. Martinkovicova[1], V. Suchanek[2], P. Hajek[1], M. Maly[1], D. Zemanek[1], P. Blasko[1]. [1]*Dept. of Cardiology, Faculty Hospital Motol, Prague, Czech Republic* [2]*Dept. of Radiology, Faculty Hospital Motol, Prague, Czech Republic*

Purpose: Dual-source computed tomography is a modern and heart rate-independent tool in examination of coronary arteries. Aim of our study was to compare the effective radiation dose of a dual-source CT coronary angiography (CTCA) and invasive coronary angiography (CAG). **Methods and Materials:** A single-center registry of patients with a stable angina pectoris examined by both methods was analyzed. Sixty-two patients (37 males, mean age 65.7+/-9.3 years) underwent examination with both methods from February to August 2007. Effective dose of CTCA was calculated from dose length product (DLP) and effective dose of CAG was calculated from dose area product (DAP). CTCA was performed with a dual-source CT (Somatom Definiton, Siemens, Germany). Tube voltage was 120 kV for both tubes, current with modulation dependent on heart rate (70–70% of cardiac cycle for HR<60, 50–80% for HR 60–70, 30–80% for HR>70, for unstable HR in one case of atrial fibrilation pulsing was off), gantry rotation time 0.330 s and pitch 0.2–0.43 adapted to the heart rate. CAG was performed on a dedicated cardiac angiography equipments Allura or Integris (Philips, Netherlands). **Results:** Mean effective dose of CTCA was 13.5+/-5.0 mSv, (3.7–29.6, median 14.2), mean of CAG was 5.7+/-3.9 mSv (1.1–20.1, median 3.9). Mean difference was 7.8+/-5.8 mSv (95% confidence interval 6.3–9.3) and difference was statistically significant (p<0.001). There was

no correlation between CTCA and CAG (r=0.16;p=0.23). **Conclusion:** Despite the non-invasivity patients should be indicated to CTCA with a caution, because radiation dose was approximately 2.5 times higher compared to CAG.

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Management of resistant hypertension by adding a low dose spironolactone

E. Badila[1], C. Tirziu[1], S. Ghiorghe[1], D. Bartos[1], M. Dorobantu[1]. [1]*EMERGENCY HOSPITAL BUCHAREST*

Objective: To assess the clinical and hemodynamical effectiveness of aldosterone antagonist spironolactone in the treatment of resistant hypertension. **Method:** 26 patients with resistant hypertension were included. The clinical effectiveness of adding a low dose spironolactone (25 mg/day) was assess by office and ambulatory blood pressure monitoring (ABPM) (Meditech, Hungary). The hemodinamycal effectiveness was assess non-invasively by electric thoracic bioimpedance (ETB) (Hotman, HemoSapiens Inc). We measured office blood pressure, pulse pressure (PP), mean arterial pressure (MAP), stroke systemic vascular resistance index (SSVRI), total arterial compliance index (TACI), stroke index (SI). **Results:** See table. **Conclusions:** A low dose spironolactone is efficacious in the control of resistant hypertension. Reduction of peripheral resistance is probably an important mechanism of effectiveness of spironolactone in resistant hypertension. The use of ETB in management of resistant hypertension allows non-invasive identification of underlying hemodinamic abnormalities in these patients.

	Before spironolactone	After spironolactone	p
SBP mmHg	164,6±12,5	129,5±6,3	0.01
DBP mmHg	92,3±10,4	76,4±5,3	0.01
MAP mmHg	116,4±9,6	94,2±5,3	0.01
PP mmHg	72,1±12,1	53,1±4,2	0.01
SI ml/m²	34,8±8,4	39,8±10,5	ns
SSVRI dyn.sec.cm⁻⁵.m²	251,6±40,5	184,5±71,4	0.01
TACI	0,54±0,2	0,75±0,2	ns

SBP- systolic blood pressure; DBP- diastolic blood pressure

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INCREASED EXPRESSION OF THE HOMOLOGUE ANGIOTENSIN I CONVERTING ENZYME (ACE2) INDUCED BY BOTH CANDESARTAN AND FASUDIL IN RATS WITH GENETICALLY HIGH LEVELS OF ANGIOTENSIN II

M. Ocaranza Jeraldino[1], P. Rivera[1], J. Jalil Milad[1]. [1]*P. Universidad Católica de Chile*

The angiotensin I converting enzyme (ACE) polymorphism determines high levels of ACE and angiotensin II (Ang II) in Brown Norway (BN) rats and low levels of ACE and Ang II in Lewis (L) rats. The relation between ACE, ACE2 and the stimulation of Ang II receptor and the Rho A/Rho kinase (ROCK) pathway has not been determined. **Objective.** To determine plasma ACE and ACE2 activity and eNOS and ACE2 gene expression in the aorta of rats with genetically high levels of ACE and Ang II and the effects of the inhibition of a) Ang II receptor (RAT1) and b) Rho kinase (ROCK). **Methods.** Male homocygous rats BN y L were used. To inhibit ROCK, we administered fasudil (100 mg/Kg/day by gavage, 7days). We used Candesartan (10 mg/kg/day by gavage, 7 days to inhibit the RAT1. Systolic blood pressure (SBP), plasma ACE and ACE2 activities (fluorimetry) and the ACE2 and eNOS gene expression by RT-PCR were determined. Results as mean (ES): **Conclusions:** Genetically high ACE and Ang II levels are associated to low plasma ACE2 activity in BN normotensive rats. Candesartan and fasudil increased the expression and activity of ACE2 and the eNOS gene expression in the aortic wall of BN rats. These results are also consistent with an activator effect of nitric oxide and also with an inhibitory effect of ROCK on ACE2. Fondecyt 1070662 y 1030181

	L (n = 9)	BN (n = 9)	BN-Can (n=8)	BN-Fas (n = 8)
Body weight (g)	161(2)	150(1)	156(6)	163(2)
RLVM (mg Vl/g)	243(2)	231(5)	257(4)	263(2)
SBP (mm Hg)	111(1)	109(1)	95(3)**	106(2)
ACE activity (U/mL)	145(13)	221(9)*	195(7)*	184(9)#
ACE2 activity (U/mL)	0.26(0.04)	0.14(0.05)*	0.24(0.02)†	0.32(0.03)#
Aortic ACE2 mRNA	1.0(0.11)	1.21(0.09)	1.87(0.17) **	2.77(0.27) #
Aortic eNOS mRNA	1.0(0.1)	1.42(0. 14)	3.74(0.47)**	3.41(0.37)**

Symbols:*= p< 0.05 vs L, †= p< 0.05 vs BN, ** = p< 0.05 vs L y BN, # = p< 0.05 vs BN-Can (After ANOVA). Abbreviations: RLVM= relative left ventricular mass index. mRNAs in units of optical density

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Ischemic or non-ischemic etiology influence on endothelial function in patients with cardiac failure

E. Badila[1], S. Ghiorghe, C. Tirziu, D. Bartos, M. Dorobantu. [1]*EMERGENCY HOSPITAL BUCHAREST*

Objective: Endothelial dysfunction in patients with cardiac failure is well known. The aim of this study was to establish if endothelial function is more severely affected in patients with ischemic cardiac failure than in non-ischemic cardiac failure. **Method:** Subjects were 40 patients admitted in our department with symptoms or signs of cardiac failure, newly diagnosed, without prior treatment. They were divided into two groups: first – the group I – 20 patients with ischemic cardiac failure and the second – the group NI – 20 patients with non-ischemic cardiac failure. All the patients were followed 3 months. The demographic, hemodynamic and humoral characteristics of the two groups were structurated. Endothelial function was assessed by measuring the flow mediated dilation (FMD) of brachial artery. Vasodilation was estimated by the changes of brachial artery diameter at rest and during reactive hyperemia (endothelial dependent vasodilation) and after sublingual glyceril-trinitrate (endothelial independent vasodilation). The ultrasound measurement was made at the beginning of the study and repeated after 3 months. The patients from the two groups were treated with the same drugs: ACE-inhibitors, diuretics, spironolactone, beta-blockers, ± digoxin, antiplatelets (aspirin) or anticoagulants. All the patients received statins. **Results:** In the two groups, NYHA class was significantly improved when compared with the beginning of the study. The reactive C protein after 3 months was lower in the NI group, but without significance. The initial values for the basal brachial artery diameter was similar in the two groups (3,3 ± 0,4 mm vs. 3,4 ± 0,3 mm; p ns). The endothelial dependent vasodilation was without significant difference between two groups (4,3 ± 3% vs. 4,1 ± 4%, p ns). The values after 3 months of treatment were different. It was found that endothelial dependent vasodilation (by reactive induced hyperemia and the percentage variation of the flow) was significantly greater in the group with non-ischemic cardiac failure than in the group with ischemic cardiac failure -10,4 ± 5% vs. 5,7 ± 4%; p< 0,001. The response to nitroglycerin (endothelial independent vasodilation) was similar in the two groups (13,5 ± 6% vs. 13,6 ± 6%; p ns). **Conclusions:** Endothelial dysfunction seems to be more severe in patients with ischemic cardiac failure than those with non-ischemic cardiac failure. The endothelial function is not always improved with drugs known that have beneficial effects like ACE-inhibitors and statins.

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Risk factors for Trypanosoma cruzi infection reactivation in Chagas' heart transplant recipients.

T. Theodoropoulos[1], **A. Silva**[1], R. Bestetti[1]. [1]*Hospital de Base, S.J.R.Preto city, Brazil*

Trypanosoma cruzi infection reactivation is a constant threat for Chagas' heart transplant recipients. The histological aspect of myocardial T.cruzi infection reactivation on endomyocardial biopsy may mimick acute graft rejection, what might lead to inadvertment treatment with steroid pulsotherapy, dissemination of T.cruzi infection or septicemia due to opportunistic infection. Apart from PCR use, there is no other effective method to make the correct diagnosis of T.cruzi infection reactivation. From September, 2000 to September 2007, about 54 patients underwent 55 orthotopic heart transplantation procedures at our institution. Twenty (37%) of them had a positive serology for Chagas' disease. Mean age was 43 ± 11 years. Nine (64%) patients were male. Fourteen (70%) out 20 patients, who survived the perioperative period, were entered the study. Mean follow up after cardiac transplantation was 1217 ± 765 days. Eight (57%) out 14 patients were on cyclosporine (mean serum levels: 288.5 ± 90.2 pg/ml), 12 (86%) on Mycophenolate Mofetil (2–3 gr/daily), and 9 (64%) on prednisone [median daily dose= 5 (0 to 12.5) mg]. Six (43%) out of 14 patients had documented T. Cruzi infection reactivation: 3 in the heart, and 3 in the subcutaneous tissue. Six (43%) patients had acute myocardial inflammation consistent with acute rejection graded 3A or more, which had not improved with steroid pulsotherapy, but improved after specific treatment for T. Cruzi infection (benznidazol, 5 mg/kg, during 60 days). Such patients were considered to have T.cruzi infection reactivation. A total of 17 episodes of T.cruzi infection reactivation were detected: 8 patients had 1 episode, 3 patients had 2 episodes, and 1 patient had 3 episodes. Mean T. Cruzi infection reactivation episodes per patient was 1.21 ± 0.80. Four (23%) out 17 episodes of T.cruzi infection reactivation occurred in the first trimester after cardiac transplantation, 3 (18%) in the second trimester, 4 (23%) in the second semester, and 6 (35%) after 1 year. Mean eosinophil count per mm3 was 121.41 ± 72.53 at baseline and 176.23 ± 124.81 during T.cruzi infection reactivation (p=0.04), whereas mean hemoglobin plasma levels was 12.7 ± 2.17 g/dL at baseline and 11.27 ± 2.17 g/dL during T.cruzi infection reactivation (p=0.05). No difference was observed with regard to standard laboratory tests, 12-lead electrocardiogram and Dopplerechocardiogram when baseline variables were compared with variables obtained during T.cruzi infection reactivation. One (8%) patient died because of T.cruzi infection reactivation. Probability of freedom from T.cruzi-infection reactivation was 86% at 58 days, 43% at 202 days, and 29% at 297 days after cardiac transplantation. Mean time to the first episode of T.cruzi infection reactivation was 352 days. In conclusion, the majority of T.cruzi infection reactivation episodes occurs in the first year after cardiac transplantation. The appearance of anemia or eosinophylia in the follow up are associated with T.cruzi recrudescence in Chagas' heart transplant recipients.

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Single centre experience in patients with left ventricular non-compaction: clinical characteristics and evolution.

M. Diez[1], R Fernandez[1], A Fernandez[1], J Casabe[1], G Arroyo[1], E Guevara[1], M Tettamanti[1], R Gamboa[1], C Rodriguez Correa[1], L Favaloro[1]. [1]*FAVALORO FOUNDATION*

Introduction: Left ventricular non compaction (LVNC) is a genetic cardiomyopathy caused by arrest of normal embryogenesis and is characterized by prominent ventricular trabeculations and deep intertrabecular recesses. This entity has been increasingly recognized and associated with high morbidity and mortality rate. Clinical manifestations are variable, ranging from no symptoms to congestive heart failure, arrhythmias and tromboembolic events. **Objectives:** The aim of this study was to analyze the clinical and echocardiographic characteristics and the evolution in a population with LVNC at a single centre. **Methods:** We retrospective analized 45 consecutive patients (p); mean age 42,5 ± 7,7 years, 29 men; referred to our cardiomyopathy Clinic between 1997 and 2007. Echocardiographic criteria for LVNC were based on non-compacted/compacted end-systolic thickness ratio higher than 2 at paraesternal short axis views and absence of co-existing cardiac structural abnormalities. Left ventricular dysfunction was defined by a left ventricular ejection fraction lower than 50%. **Results:** At the time of diagnosis the age range was wide (3,2 a 74 years) and the mean age was 41 ± 8,48 years. Mean follow up was 47 ± 31 months. Nineteen p (42,2%) were asymptomatic and reason for referral were revision of cardiomyopathy diagnosis or abnormal ECG findings in 13 p (28,8%) and familial screening in 6 p (13,3%). Twenty six p (57,8%) were symptomatic: 18 p (40%) had clinically overt heart failure, 5 p (11,1%) palpitations, 1 p (2,2%) syncope, 1 p (2,2%) stroke and 1 p (2,2%) presented angina. Thirty five p (77,7%) had left ventricular dysfunction. Thirty four p (75,5%) were on medical treatment: 27 p (60%) were on beta-blockers, 25 p (55,5%)

long term anticoagulation therapy, 24 p (53,3%) ACE inhibitors, 20 p (44,4%) spironolactone, 8 p (17,7%) digoxine, 7 p (15,5%) amiodarone and 7 p (15,5%) aspirin. During follow up 18 p had 19 events as non-sustained ventricular tachycardia 9 p (20%), sudden cardiac death 1 p (2,2 %), appropriated implantable cardioverter defibrillator (ICD) discharge 1 p (2,2%), syncope 6 p (13,3%) and sustained ventricular tachycardia 2 p (4,4%). In this group of 18 p, 16 p (89%) had left ventricular dysfunction. Three p (6,66%) with severe left ventricular dysfunction underwent heart transplant. Seven p (15,5%) received ICDs, 2 of them for secondary prevention and 5 for primary prevention. No deaths were recorded during the follow up. Transplantation free survival rate was 93,3% at 47 months. **Conclusions:** In our series of p with LVNC left ventricular dysfunction was frequently found and was associated with large incidence of cardiac events. Nevertheless a favourable prognosis was observed.

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Real-time three-dimensional echocardiographic left ventricular systolic assessment: side-by-side comparison with cardiac computed tomography

M LC Vieira[1], C H Nomura, B Tranchesi Jr, W A Oliveira, G Naccarato, B S Serpa, R B D Passos, M B G Funari, C H Fischer, S S Morhy. *[1]Hospital Israelita Albert Einstein [2]Hospital Israelita Albert Einstein [3]Hospital Israelita Albert Einstein [4]Hospital Israelita Albert Einstein [5]Hospital Israelita Albert Einstein [6]Hospital Israelita Albert Einstein [7]Hospital Israelita Albert Einstein [8]Hospital Israelita Albert Einstein [9]Hospital Israelita Albert Einstein [10]Hospital Israelita Albert Einstein*

Background and objective : There is paucity of information concerning side-by-side comparison of real-time 3D echocardiography (RT3DE) and cardiac computed tomography (CCT) ventricular systolic performance assessment. We sought to compare both techniques regarding left ventricle (LV) systolic function and volumes. **Methods:** we studied by RT3DE and by 64-slice CCT 39 consecutive patients (27 males, 57 ± 12 yrs). We analysed by both techniques LVEF, LVEDV, LVESV and by RT3DE LV dyssinchrony % indexes (DI%) (6, 12, 16 segment model). RT3DE and CCT data were compared by coefficients of determination (r: Pearson), Bland & Altman test and linear regression, 95% CI. **Results:** RT3DE data : LVEF ranged from 56.1 to 78.6 % (65.5 ± 5.58); LVEDV ranged from 49.6 to 178.2 (87 ± 27.8) mL; LVESV from 11.4 to 78 (33.1 ± 13.6) mL; 6S DI % ranged from 0.25 to 29.4 (1.87.± 4.55) %; 12 S DI % ranged from 0.29 to 26.45 (2.10 ± 4.10) %; 16 S DI % ranged from 0.29 to 27.31 (2.34 ± 4.17) %. CCT data: LVEF ranged from 53 to 86 % (67.8 ± 7.78); LVEDV ranged from 51 to 186 (106.5.± 30.3) mL; LVESV from 7 to 72 (35.5 ± 13.4) mL. Correlations relative to RT3DE and CCT were: LVEF (r: 0.7888, $p<0.0001$, 95 % CI 0.6301 to 0.8843); LVEDV (r: 0.7695, $p<0.0001$, 95 % CI 0.5995 to 0.8730); LVESV (r: 0.8119, $p<0.0001$, 95 % CI 0.6673 to 0.8975). RT3DE (x) LVEF was compared to CCT (y) LVEF as: $y = 27.4000 + 0{,}5656\ x$, R2 : 0,6222, $p<0.0001$; RT3DE (x) LVEDV was compared to CCT (y) LVEDV as: $y = 18.6321 + 0.6844\ x$, R2 : 0.5921, $p<0.0001$; RT3DE (x) LVESV was compared to CCT (y) LVESV as: $y = 4.0462 + 0.8199\ x$, R2 : 0.6592, $p<0.0001$. **Conclusions:** In this series, we observed adequate correlation between real-time 3D echocardiography and cardiac computed tomography ventricular systolic function and geometry assessment.

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The role of hemodynamic and non-hemodynamic factors of left ventricular remodeling in patients with ankylosing spondylitis

D.A. Poddubnyy[1], A.P. Rebrov[1]. *[1]Saratov State Medical University, Saratov, Russian Federation*

Background. Ankylosing spondylitis (AS) is a chronic systemic inflammatory disease that primarily affects the axial skeleton (spine and sacroiliac joints). **Objective.** To asses the contribution of hemodynamic and non-hemodynamic factors to the process of left ventricular (LV) hypertrophy/remodeling in patients with AS. **Methods.** 102 patients (98 males, 4 females) with reliable diagnosis of AS were included. Exclusion criteria were: age of >60 years, presence of ischemic heart disease, manifesting peripheral atherosclerosis, chronic heart failure of any origin, diabetes mellitus, and chronic hepatic or renal failure. All included patients were screened for the presence of arterial hypertension (AH) and conventional cardiovascular risk factors (smoking, body overweight, hypercholesteremia). Standard echocardiography was performed in all patients for the revealing of LV hypertrophy/remodeling signs. Criteria for the LV hypertrophy were: LV mass index (LVMI) >115 g/m^2 in males and >95 g/m^2 in females. Following patterns of LV geometry were defined: 1) normal geometry (normal LVMI, relative LV wall thickness (RWT) <0.42); 2) concentric remodeling (normal LVMI, RWT≥0.42); 3) concentric hypertrophy (increased LVMI, RWT≥0.42); 4) eccentric hypertrophy (increased LVMI, RWT<0.42). **Results.** AH was revealed in 30 patients (29.4%). Signs of LV hypertrophy and/or remodeling were found in 52% of the AS patients; only of LV hypertrophy – in 40.2% of the patients. Detailed description of LV geometrical pattern in patients with and without AH is presented in table 1. As expected, patients with AH had the high incidence of abnormal LV geometry. Concentric remodeling/hypertrophy of LV are well-known natural consequences of AH and they were found in 60% of the AS patients with AH. But unexpectedly high was incidence of abnormal LV geometry in patients without AH (41.7%) with eccentric hypertrophy as a most common abnormal LV pattern (22.2%). Analysis of variance (ANOVA) revealed that only concentric LV geometric types are associated with elevated blood pressure (both systolic and diastolic). Presence of concentric LV hypertrophy was associated also with higher age, duration of AS, body mass index, smoking intensity, higher level of total cholesterol in comparison to patients with normal LV geometry, while patients with eccentric hypertrophy had the same level of blood pressure and cardiovascular risk profile as the patients with normal LV geometry. **Conclusion.** Hemodynamic factors play the primary role in concentric LV hypertrophy/remodeling. Eccentric LV hypertrophy in AS patients seems to be independent from hemodynamic factors as well as from classic cardiovascular risk factors. Persistent systemic inflammation can be the possible non-hemodynamic factor of eccentric LV hypertrophy development in patients with AS.

TABLE 1. LV GEOMETRICAL PATTERNS IN PATIENTS WITH AS

	AS patients with AH (n=30)		Normotensive AS patients (n=72)	
LV geometrical pattern	n	%	n	%
Normal geometry	7	23.3	42	58.3
Concentric remodeling	5	16.7	7	9.7
Concentric hypertrophy	13	43.3	7	9.7
Eccentric hypertrophy	5	16.7	16	22.2

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Prevalence and Relevance of Extreme Dipping Pattern of Blood Pressure

G. Simonyi[1], JR. Bedros[1], M. Medvegy[2]. *[1]5th Dept. of Internal Medicine, Hypertension and Lipid Centre, Ferenc Flor Hospital, Kistarcsa, Hungary [2]National Health Center, Cardiology, Budapest, Hungary*

Introduction The role of hypertension in the cause of vascular disease and the beneficial effects of antihypertensive treatment in preventing cardiac disease and stroke are well known. Kario et al demonstrated a J-shaped relationship between nocturnal BP decline, silent cerebrovascular damage, and stroke incidence in elderly asymptomatic hypertensive patients divided into nondippers, dippers, and extreme dippers, with the extent of cerebrovascular damage being most advanced in the extreme dipper group and least severe in the dipper group. Our aim was to investigate the prevalence of extreme dipping pattern with ambulatory blood pressure monitoring (ABPM). **Patients and methods** We investigated 1417 patients with ABPM. The criteria of extreme dipping were nocturnal blood pressure fall ≥20%. We assessed the circadian pattern of blood pressure BP); we measured the body mass index, waist and hip circumferences, serum lipids. **Results** From this population we found 81 patients (5.72%) with extreme dipping pattern. Age 46.8±13.01 years, body mass index was 29.7±5.95 kg/m^2. The waist circumference was 108.3±10.56 cm. The 24-hour systolic BP was 126.17±14.93 mm Hg the diastolic was 73.61± 10.95 mm Hg, the pulse was 70.70±8.72 beat/min. The systolic diurnal index (DI) was 23.14±2.89% and diastolic DI was 27.08±5.07%. The serum cholesterol level was 6.9±1.53 mmol/l, the LDL-cholesterol level was 4.01±2.02 mmol/l, the HDL-cholesterol level was 1.17±0.31 mmol/l and the triglycerides level was 3.47±2.52 mmol/l. We found significant difference between dipper and extreme dipper group between 24-hour systolic and diastolic blood pressure variability ($p<0.0001$), daytime systolic blood pressure ($p<0.05$), waist circumferences ($p<0.001$). **Conclusions** ABPM is only the choice to investigate (non-invasive) the circadian rhythm of blood pressure. If we found extreme dipping pattern of BP we must seek other risk factors for cardiovascular events.

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Morphological Study of Tachyarrhythmias: Typical Features on Cardiac MRI

P. Donato[1], B. Graça, M.J. Ferreira, F. Caseiro-Alves, L.A. Providência. *[1]HOSPITAL DA UNIVERSIDADE DE COIMBRA [2]HOSPITAL DA UNIVERSIDADE DE COIMBRA [3]HOSPITAL DA UNIVERSIDADE DE COIMBRA [4]HOSPITAL DA UNIVERSIDADE DE COIMBRA [5]HOSPITAL DA UNIVERSIDADE DE COIMBRA*

Purpose To review the common causes of tachyarrhythmias and illustrate the typical features found on the morphological studies made by Cardiac Magnetic Resonance (CMR) on the evaluation of patients with tachyarrhythmias. **Methods and Materials** We performed a revision of cardiac MRI studies conducted in the clinical work-up of patients with tachyarrhythmia and selected the exams that depicted a substrate and diagnosis for the arrhythmia. With the selected iconography we make a revision of the diagnoses discovered, emphasizing the role and improvements that cardiac MRI added to the study of these patients. **Results** Several arrhythmogenic conditions curse with morphological changes witch can be evaluated by CMR, including myocardial ischemia, dilated cardiomyopathy, hypertrophic cardiomyopathy, arrhythmogenic right ventricular dysplasia, myocarditis, sarcoidosis and left ventricular noncompaction. On the tissue level, ischemic and non-ischemic cardiomyopathies promote scarring, fibrosis or hypertrophy of myocardial cells, which may be the substrate of arrhythmogenesis can be demonstrated by CMR. Delayed-enhancement MRI is becoming the standard of reference in the work-up of these patients as is ideal for non-invasive assessment and characterization of myocardial scarring and fibrosis. **Conclusions** Several arrhythmogenic conditions curse with typical morphological features that can be well demonstrated by CMR.

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Incidence of cocaine use in patients under 45 years presenting to an emergency department with adverse cardiovascular events

M. Colmenero[1], F Manzano[1], A Reina[1], R Garcia[1], M Rodriguez-Elvira[1], J Roca[1]. *[1]Critical Care Unit. Virgen de las Nieves University Hospital. Granada. Spain*

Objective: To study the incidence of cocaine use in patients under 45 years presenting to an emergency department with adverse cardiovascular events **Methods:** Prospective, observational cohort study during four months (February- May 2006). All patients under 45 years presenting with a cardiovascular complain such as chest pain or palpitations were included. Data collected were demographic data, ECG registry, presence of acute myocardial infarction (AMI) and hospital course. To detect cocaine use, measurement was made in urine samples by AXYM test. For statistical analysis descriptive and chi-square test were used. **Results:** 88 patients were included, 70% of whom were men, with a mean age of 31+8 years. The admission diagnosis was acute chest pain in 70% (n=64) and palpitations in the remaining 30% (n=28). The ECG showed alterations in 17% of cases. A total of 10 patients experienced an AMI (11%). Ten patients were found positive for cocaine use. There was no difference in gender (155 vs 4%, p=0.15). The incidence of drug abuse was higher in week-ends (25.9% vs 5.1%, p=0.005). There was no relationship between AMI and cocaine use (12.5% vs 11.4%,

ns). **Conclusions:** Cocaine use in patients under 45 years presenting to an emergency department with adverse cardiovascular events is high, especially during week-ends. AMI rates in cocaine-associated chest pain was 12.5%

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Contribution of the diastolic wave to the evaluation of hypertensive subjects

F. C. Clara, Fernando[1], **A.C. Casarini, Alfredo[2]**, A.T. Tufare, Ana[3], M.E. Echzu, María[4], A.S. Escandurra, Adriana[5], G.M. Meschino, Gustavo[6], L.C. Clara, Laurencia[7]. *[1]Universidad Nacional de Mar del Plata [2]Clinica 25 de Mayo, Mar del Plata [3]Clinica 25 de Mayo, Mar del Plata [4]Clinica 25 de Mayo, Mar del Plata [5]Universidad Nacional de Mar del Plata [6]Universidad Nacional de Mar del Plata [7]Universidad Nacional de Mar del Plata*

Introduction: Radial pulse wave changes with age. Parameters to evaluate arterial aging degree or cardiovascular risk in hypertenses can be obtained from its registration. One of these parameters is the radial augmentation index (RAIx) which is obtained during systolic fall and depends on the amplitude of the reflected wave, the propagation speed in the aortic zone and the systolic ejection. This index has been widely accepted as a cardiovascular risk marker. It is also possible to evaluate the diastolic wave amplitude (DWA) from pulse wave analysis, which is related to small arteries elasticity. The objectives of this study are to compare RAIx and DWA values between two populations: Hypertenses (HT) against Control (C) population. **Materials and Methods:** Radial pulse wave was recorded employing a displacement transducer and then digitalized for evaluating a group of 71 HT, ages between 40 and 70 years. Eight cardiac cycles which showed maximum DWA were averaged and normalized (Diastolic minimum= 0% and systolic maximum= 100%). It was plotted HT's RAIx against normal distribution of the (C) (n: 204), for each period of age. **Results:** Most of the HT showed highest RAIx values than control average (HT-B), as it was expected, but it was also found another group (HT-A) who showed lower RAIx values than those ones (C 68,7±12%, HT-A 71,4±6%, HT-B 85,9±9%).One way ANOVA followed by multiple comparison post hoc test indicated that significant differences were found only when comparing HT-B with C and HTA ($p<0,001$) but not between HTA and C ($p=0,089$). DWA was also evaluated for all the individuals, taken as the difference between diastolic maximum and dicrotic notch height. ANOVA and post hoc test showed that this parameter was significantly diminished with respect to the same age group control (n=75) in both HT groups (C 7,04±5,1%, HT-A 2,61±1,8%, HT-B 1,35±3,6% $p<0,001$). **Conclusions:** Those results would suggest that RAIx wouldn't be enough to evaluate the whole arterial system performance and it would be necessary to consider the rest of the pulse wave morphology employing parameters such as DWA, which was able to distinguish between the groups of HT with low RAIx from control population.

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Long-term influence of cardiovascular risk factors in the development of thromboembolic disease.

B. Roca[1], D. Bahamonde[1], M. Peris[1]. *[1]Hospital General of Castellon, University of Valencia, Spain.*

Objective: to know the incidence of thromboembolic disease (TD) in middle-age people, and to assess the influence of cardiovascular risk factors in the presentation of the disease. **Method:** study based in the "Cohorte Castellon", which includes 1,114 patients randomly selected after stratification of the whole population of the province of Castellon, Spain, by age, gender and town of residency. Enrolment of participants took place in 2001, when they were 30 to 59 years old. At that time, medical history, physical exam and blood analysis regarding cardiovascular risk factors were obtained from every patient. In this study, we randomly selected one third of participants, and by means of telephone calls carried out from January to July 2007, we determined if every patient had suffered any of the modalities of TD, throughout the 6 six years of involvement in the cohort. **Results:** of the total 376 studied patients, 166 (44 %) were male and 210 (56 %) female; median and standard deviation of age at enrolment were 47 ± 8 years. The overall incidence of TD was 31 cases in 31 patients (8.3 %); 4 (1.1 %) presented pulmonary embolism, 12 (3.2 %) deep venous thrombosis and 15 (4.0 %) superficial venous thrombosis. Table shows a comparison of cardiovascular risk factors data in patients with and without TD. **Conclusion:** TD is a common disease in middle-age people. Cardiovascular risk factors seem to have a limited influence in the development of the condition.

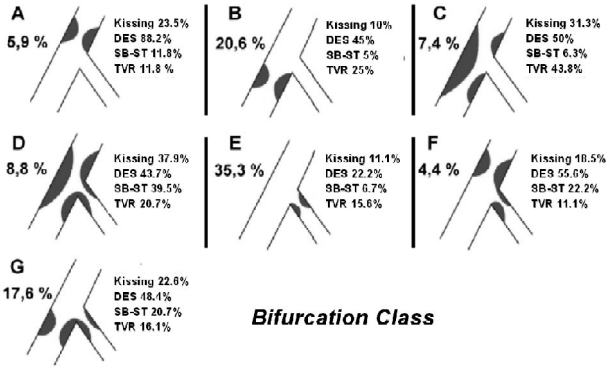
TD, N = 31	No	TD, N = 345	P =
Male (%)	7 (23)	159 (46)	0.01
Diabetes (%)	3 (10)	26 (7)	0.72
Dislipidemia (%)	2 (6)	55 (16)	0.20
Hypertension (%)	43 (12)	5 (16)	0.57
Smoker (%)	4 (13)	104 (30)	0.60
Age (years)	48	47	0.48
BMI (Kg/m2)	26.1	27.0	0.36
Systolic BP (mm Hg)	124	127	0.19
Hb A1c (%)	5.0	5.2	0.19
LDL cholesterol (mg/dl)	124	127	0.72
HDL cholesterol (mg/dl)	66	60	0.08
Triglyceride (mg/dl)	108	145	0.00

P727

Mass in the left atrium – A Challenger of Diagnosis

A. Soares[1], E Marum, A Silva, R Russo, C Chicanelli, H Abensur. *[1]Hospital Beneficência Portuguesa, São Paulo, Brazil*

Case Report A 75-year-old woman who previous history of hypertension, diabetes, hypercholesterolemia and smoking presented to the emergency room with a 7-day history of anterior myocardial infarction, and did not go through any reperfusion strategy. As she maintained chest pain and dyspnea on minimal activities, coronary angiography was performed. This angiography revealed a total occlusion of the descendent anterior coronary artery. Echocardiography showed a mass in left atrium like a encapsulated and content of heterogeneous refringencia measuring 31x33mm and with little mobile deployment in the interatrial septum. She was submitted to myocardial revascularization breast-DA and resection of the mass in the left atrium. The patient did not present any complications during his hospital stay. The patient was discharged on the 10th day. The anatomopathologic examination showed organized thrombus formed of hyalinized fibrous connective tissue presenting extensive areas of dystrophic calcification. There is still areas of recent and old bleedings. The peculiar aspect of the mass in the left atrium as heterogenuos texture and the lack of akinesia would not be compatible with apical thrombus. This case report illustrates the nuances of the diagnosis based on the echocardiogram which in some cases are not confirmed by the anatomopathological study.



P728

Stress Doppler Echocardiography for Screening of Patients at Risk for Pulmonary Arterial Hypertension

R. Maier[1], G. Kovacs[1], S. Scheidl[1], C. Hesse[1], W. Salmhofer[1], R. Stauber[1], M. Brodmann[1], E. Aberer[1], E. Gruenig[2], H. Olschewski[1]. *[1]Medical University of Graz, Austria [2]Medical University of Heidelberg, Germany*

Purpose: Pulmonary arterial hypertension (PAH) is frequently associated with collagen vascular diseases and portal hypertension. Unfortunately, PAH often remains unrecognized over years and may finally lead to right heart failure. In the early stage of the disease, no significant changes in pulmonary artery pressure (PAP) may be observed at rest, however, remodeling of small pulmonary arteries may lead to insufficient vasodilatation and PAP increase during exercise. To assess PAP non-invasively during exercise, we performed stress Doppler echocardiography (SDE) in patients at risk for PAH. **Methods:** We examined 60 patients (14 male [23%], 46 female [77%]; mean age 53 ± 13 years) with scleroderma, systemic lupus erythematosus and liver cirrhosis, respectively. All patients underwent transthoracic echocardiography at rest and SDE during cardiopulmonary exercise test, using a semi-supine exercise echocardiography table (workload increase 25 W/ 2 min). Estimated systolic PAP (SPAP) was calculated from peak tricuspid regurgitant flow velocity using the simplified Bernoulli equation. In patients with an estimated SPAP >40 mmHg at rest or exercise, right heart catheterization (RHC) was recommended. **Results:** Of these 60 patients, 32 (54%) had a normal SPAP at rest and during exercise (22 ± 3 mmHg and 29 ± 6 mmHg, respectively). In 1 patient, SPAP was already elevated at rest (54 mmHg), which was confirmed by RHC (SPAP 44 mmHg). 27 patients (46%) had a normal SPAP at rest (27 ± 5 mmHg), but elevated SPAP during exercise (54 ± 9 mmHg). Of these 27 patients, 18 underwent RHC. At rest, these examinations revealed 1 patient with elevated SPAP (47 mmHg), while 17 patients were in the normal range. In 16 patients, SPAP increased during exercise (56 ± 16 mmHg) as predicted by echocardiography (59 ± 9 mmHg). 1 patient had normal SPAP at rest and during exercise (21 and 28 mmHg, respectively). **Conclusions:** In patients at risk for PAH, SDE identifies patients with an abnormal PAP increase during exercise with a positive predictive value of 89% (16/18). The negative predictive value remains unknown. These results must be confirmed in a larger patient cohort. The long-term follow-up of these patients will show whether abnormal PAP increase represents a clinically meaningful early manifestation of PAH.

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Coronary Angioplasty of Bifurcated Lesions

M. Albertal[1], F. Cura[2], L. Padilla[3], P. Perez Balino[4], A. Candiello[5], S. Jozami[6], J.A. Belardi[7]. *[1]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [2]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [3]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [4]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [5]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [6]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [7]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina*

Background: The use of drug-eluting stent (DES) had lowered the need for further target vessel revascularization (TVR). Nevertheless, the percutaneous approach of coronary bifurcations (Bif)

is still a challenge. **Objective:** Evaluate the long-term clinical outcome in patients with Bif treated in our center. **Methods and Materials:** From April 2003 to August 2006, a total of 1910 angioplasties, 243 (12.7%) with Bif. **Results:** use of DES was 45.3%; 22.1% underwent side-branch stenting (SB-ST), while 22.6% ended with kissing balloon. All patients were followed, (median 430 days, interquartiles 25–75% 238–774); overall TVR was 19.3%, 10.9 % in the DES group and 26.3 % in the non-DES group (p=0.002). Combined end-point of death, myocardial infarction and TVR was 21.4 %; 11.8 % with DES and 30,6% without DES (p=0,066). The presence of SB-ST or final kissing did not impact clinical outcome. Technique utilized and clinical outcome according to Bif class are depicted in the figure. **Conclusion:** 1) The percutaneous treatment of Bif continued to be challenging. 2) The use of DES translated into a better long-term outcome. 3) SB-ST or final kissing did not impact clinical outcome.

P730

Nursing Diagnoses at Rio de Janeiro's Chest Pain Unit

M. A. C. S Marluci Andrade Conceiçãostipp[1], K. B. A. Karla Biancha Silva De Andrade[1–2], V. Z. M. Valéria Zadra De Mattos[2], A.P.B.P. Ana Paula Brito Pinheiro[2], M.F.M. Maria De Fátima Muino[2], J.L.L. Josète Luzia Leite[1], R.S.S. Renata Silva Dos Santos[3], A.A.S. Alessandra Andrada De Souza[3], N.M.C. Natália Machado Da Cunha[4]. *[1]Universidade Federal do Rio de Janeiro [2]Hospital Pró-Cardíaco [3]Hospital Pró-Cardíaco [4]Hospital Pró-Cardíaco [5]Hospital Pró-Cardíaco [6]Universidade Federal do Rio de Janeiro [7]Universidade Federal do Rio de Janeiro, Bolsista PIBEX-UFRJ [8]Universidade Federal do Rio de Janeiro, Bolsista PIBEX-UFRJ [9]Universidade Federal do Rio de Janeiro, Bolsista PIBIC-CNPq*

This study aims to identify the most prevalent nursing diagnoses in patients under investigation for Coronary Ischemic Syndrome (CIS) at the Chest Pain Unit (CPU) of a private hospital in Rio de Janeiro - Brazil. According to the North American Nursing Diagnosis Association's taxonomy the nursing diagnoses are the grounds for the selection of interventions and the nursing therapeutical results. The study sprang from the needs for improvement in nursing assistance to patients under investigation for CIS at the CPU. Since 1995 an assistance protocol has been implemented aiming to classify individuals with high, intermediate and low probability for the disease and systematize medical and nursing actions. A hundred and two patients were analyzed and data collection was obtained through primary sources (medical reports) and nursing historicals. The data collection period was held in August, September and October, 2007. The CPU is situated in Emergency Room and 40% of its patients complain of chest pain. Among the analyzed nursing historicals, 50,98% were of male and 49,01% of female patients. The average age range was 60 (± 20). The most frequent nursing diagnoses were: acute pain at admission (65,68); fear and anxiety related to the pain, his current state and uncertainty related to the future (90,19%); increased disposition for communication (43,13); disturbed sleeping patterns (59,80); efficacy control risk of therapeutical system (26,47%). The results above reflect the nurses' needs in the scenario, to maintain a therapeutical communication with patients under CIS investigation. Such strategy involves diagnostic investigation of chest pain in patients in order to identify and treat, in advance, individuals developing acute myocardial infarctation. Patients allocated in the chest pain protocol, who are considered moderate and low risk, undergo electrocardiograms and serial myocardial necrosis markers, allowing a 14-hour multiprofessional staff assistance. Based on the quality of pain and initial ECG the protocol aims to classify four paths of diagnostic investigation, characterizing them in CIS high, intermediate and low risk and risks for thrombolembolic disorders. The CPU nurse is responsible for the systematization of nursing care, must identify nursing diagnoses and proposes interventions with a focus on better results. **Main Bibliography:** 1- Diagnósticos de Enfermagem da NANDA: definições e classificaçáo 2005/2006; Porta Alegre: Artmed, 2006. 2- Bassan R. Síndrome Coronariana Aguda nas Unidades de Dor Torácica. São Paulo: Atheneu, 2000. 3- Ciancarullo T I, Gualda D M R, Melleiro M M. Sistema de Assistência de Enfermagem: evolução e tendências, 3ªed São Paulo: Ícone,2001.

P731

Patch carotid endarterectomy. Follow up results in a selected group

J. Cors[1], C. Schulte, A. Hershson, G. Peltz, M. Nallar, H. Raffaelli. *[1]FAVALORO FOUNDATION*

Background and Objectives: Carotid endarterectomy is being used as the treatment of choice for symptomatic and asymptomatic carotid stenosis. To evaluate hospital morbidity, clinical outcomes and carotid doppler ultrasound control on follow-up in a selected group of patients with severe carotid stenosis, performed by the same surgeon, with the same technique: patch carotid endarterectomy. **Methods:** Between November 1993 and August 2006, 216 patients underwent patch carotid endarterectomy with shunt. Complete follow-up was available in 104 of these patients, mean age: 71.8 ± 0.8 years, male: 61.5%. Mean follow-up was 3.9 ± 0.3 years. We analyzed hospital morbidity (<30 days), post hospital clinical outcome and carotid doppler ultrasound variables. The data are presented as mean ± standard error for the quantitative variables and frequency (percentage) for categorical variables. **Results:** Prior to carotid endarterectomy 33 patients (31.7%) were symptomatic and 71 (68.2%) asymptomatic, 15 patients (14.4%) had bilateral patch carotid endarterectomy (the interval between the two interventions was 0.9 ± 0.49 years). Neurological complications within the first 30 days occurred in 2 p. (1.9%) (both regarded as prior symptomatic). There were also peripheral neurological events (transient and reversible): deglution disorders in 12 p. (11.5%) and disphonia in 17 (16.3%). During the follow -up the incidence of mayor or minor ipsilateral stroke was 0%, and 9 patients (8.7%) suffered a cardiovascular event (angina, percutaneous angioplasty, coronary artery bypass surgery or myocardial infarction). 18 patients (17.3%) had mild (< 40%) asymptomatic restenosis, and 59 p. (56.7%) had mild degree of intimal hyperplasia by doppler ultrasound. **Conclusion:** Clinical outcome in terms of early and late complications of patch carotid endarterectomy are low and restenosis is rare.

P732

RANDOMIZED STUDY OF EVALUATION OF N-ACETYLCYSTEINE AND SODIUM BICARBONATE IN THE PREVENTION OF CONTRAST-INDUCED NEPHROPATHY

A. Salvatierra Ruiz[1], G. Marchetti[1], A. Lagioia[1], M. Bodoira[1], D. Lavaggi[1], R. Ferreyra[1].A. Pocoví[1], A. Palacios[1], *[1]Sanatorio de la Trinidad Mitre*

Contrast-induced nephropathy (CIN) has increased with the major use of therapeutic and diagnostic radiological studies and consequently, the morbility and mortality of the patients. Different schemes of prevention have been evaluated, including the treatment with N-acetylcysteine (NAC) or sodium bicarbonate (SB) without being observed categorical results compared with the hidration with saline solution. **Objective:** to evaluate the effectiveness of the treatment with NAC, SB and the association of both in the prevention of CIN. **Material and methods:** we prospective enrolled the first 128 patients who were scheduled for coronary or peripheral angiography and/or angioplasty and had a baseline creatinine level >=1,5mg/dl or diabetics with creatinine >=1,2mg/dl. Patients with creatinine level >= 8mg/dl, cardiac insufficiency, dialysis, allergy to or use of contrast media in the 5 previous days, use of furosemide, dopamine, manitol, fenoldopam or NAC during the time of evaluation of the study, were excluded. They were randomized to 4 groups of treatment: 1- NAC, 2 hidration with SB, 3 - NAC plus hidration with SB, 4 - hidration with saline solution. The primary endpoint was the development of CIN, defined as an increase in serum creatinine level >25% or >0.5 mg/dl after 72 hours. **Conclusion:** the association of NAC and hidration with SB could be a superior strategy than its use alone to prevent the contrast-induced nephropathy. The observed tendency has to be verified with a greater number of patients to obtain statistical power.

RESULTS

	NAC	SB	NAC + SB	Saline Solution	p
Basal creatinine (mg/dl)	1.79	1.74	1.76	1.82	ns
CIN	12.5%	12.9%	5.9%	16.1%	ns
Increase in creatinine after 72 hs.	9.45%	5.6%	2.43%	7.1%	ns

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Differential Trends in Use of Revascularization Procedures in Myocardial Infarction Patients According to Socioeconomic Status

M. G. Cohen[1], G. M. Holmes[1], T. S. Carey[1], S. B. Greene[1], K. A. Selzman[1], S. C. Smith, Jr[1], C. Patterson[1]. *[1]University of North Carolina at Chapel Hill*

Background: Low socioeconomic status (SES) is associated with suboptimal care and increased mortality after myocardial infarction (MI). Over the past decade, guidelines have strengthened the recommendation for an invasive approach in ACS. We examined secular trends in use of revascularization in patients treated for MI in North Carolina between 1996 and 2004 to assess whether revascularization procedures are equally used across SES groups. **Methods:** Retrospective analysis of 205,908 patients treated for MI at non-federal hospitals in North Carolina during 1996–2004. Census data on household income for the residential postal code of each individual patient were used as a proxy for SES. We analyzed trends in use of PCI and CABG for the upper and lower SES quintiles controlling for Charlson comorbidity index, insurance status, hospital volume, bed number, urban location, revascularization facilities, and teaching status. **Results:** Adjusted rates of PCI increased over time for low and high SES patients at similar rates. However, the gap observed in 1996 remained constant over the study period with an adjusted OR(95%CI) of 0.93(0.85–1.01) in 1996–7 and 0.92(0.85–0.99) for 2003–4. In contrast, adjusted CABG rates decreased for all patients with a steeper decline in high SES patients with an OR(95%CI) of 1.03(0.93–1.13) in 1996–7 and 1.25(1.12–1.38) in 2003–4. **Conclusions:** Revascularization rates are influenced by SES. We observed a significant decline in CABG rates post MI with a greater decline in CABG for high over low SES patients. Although rates of PCI have increased; a treatment gap persists. The reasons for these differential trends deserve further investigation.

P734

Inflammation influences late prognosis of patients with STEMI treated with primary PCI

M. Pyda[1], M Lanocha[1], K Korybalska[1], K Ksiazek[1], S Grajek[1], M Lesiak[1], M Grygier[1], A Katarzynska[1], W Skorupski[1], J Witowski[1]. *[1]University of Medical Sciences of Poznan*

Objectives: To investigate the impact of inflammatory response in acute phase of STEMI on two-years mortality in patients treated with primary PCI. **Methods:** Clinical data were analyzed in 180 patients with STEMI treated with primary PCI within 12 hours of symptom onset. Patients were divided into two groups: I: non fatal and II: fatal STEMI. IL-6, MCP-1, hsCRP were assessed in serum samples before (A), after (B) and within 24hours after PCI (C). Additionally an experiment in vitro was performed. We assessed the proliferation of human endothelial cell line EA.hy926 in vitro under the stimulation of serum samples taken before PCI. Cell proliferation was measured with the MTT assay. The results were expressed as a percentage of positive control. **Results:** Death within 2 years occurred in 18 (10%). Analysis identified following factors as predictors of 2 years mortality: age (p<0.0001), multivessel disease (p=0.002), TIMI grade after PCI (p=0.03), total ischemic time (p=0.0004), Killip class (p<0.0001), blood glucose level (p=0.0001), creatinine level (p=0.001), creatine kinase (p=0.002), ST reduction (p=0.03), ST persistent elevation (p=0.03), EF% (p=0.01), WMSI (p=0.007). The levels of inflammatory markers were significantly lower in non fatal than fatal STEMI group. IL-6 (A) (pg/ml):15±51vs48±56 (p=0.041), IL-6(B):13±21vs67±109 (p=0.006), MCP-1(B) (pg/ml): 121±111vs192±163 (p=0.049), MCP-1(C):167±142vs231±137 (p=0.032), CRP (A) (μg/ml): 6.7±11.9vs19.1±33(p=0.040), CRP(C):19.3±13.7vs43.8±43.4 (p=0.012). Endothelial proliferation (%) 523±109 vs. 552±108 (n.s). **Conclusions:** The clinical determinants of late mortality in patients with STEMI

treated with PCI are differential. The inflammatory response but not the ability of the endothelium to proliferate under serum of STEMI patients influences late mortality in patients with myocardial infarction.

P735

A Comparison between Monophasic and Biphasic Multipulse Biowave® Pulses during

E. Trendafilova[1], A. Alexandrov[1], E. Kostova[1], I Toshev[1], A. Bankova[1], P. Tassovska[1], T. Andreeva[1], N. Gotcheva[1]. *[1]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria [2]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria [3]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria [4]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria [5]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria [6]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria [7]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria [8]National Heart Hospital, Clinic of cardiology, CCU, Sofia, Bulgaria*

Energy selection during external cardioversion (CVS) of patients with ventricular tachycardia (VT) with pulse depends on the applied waveform. Few reports present results with biphasic pulses (BP), especially with "chopped" BP, patented as Multipulse Biowave®. **Objectives:** We aimed at comparing the efficacy of Multipulse Biowave® BP, Schiller FRED defibrillator (prospective cohort – 38 patients – group B) and Edmark monophasic pulses (MP), Hellige Defibrillator (retrospective cohort – 22 patients – group M). **Methods and Patients:** The transthoracic emergent CVS was applied in consecutive patients with monomorphic VT with pulse. All the CVS were performed in CCU according to the standard hospital procedures. All the patients were anaesthetized with propofol. The efficacy of both pulses was assessed by restoration of sinus rhythm for at least 1 minute. The follow-up period was 24 hours. A step-up protocol was applied: 30 J→110 J→180 J for group B and 160 J→240 J→360 J for group M. Both groups were comparable regarding age, gender, body surface area, body mass index, presence of structural heart disease (92 % in B Vs 100 % in M), hemodynamic deterioration (24 % in B Vs 23 % in M), previous therapy with amiodarone (76 % in B Vs 86 % in M), previous CVS (68 % Vs 68 %), left ventricle EF (32 % vs. 31 %). **Results:** The efficacy of both pulses was comparable – 37 patients (97.4 %) in B and 22 patients (100%) in M (p=0.63). CVS was not effective in 1 patient neither by 180 J BP nor with 360 J MP and sinus rhythm was restored 3 hours later by IV amiodarone. The cumulative energy was 67.35 J (SD 114.24) in B vs. 219.55 J (SD 215.55) in M, p= 0.001. The first shock was effective in 32 p. (92.1%) in B vs. 22 p. (86.4%) in M; p=NS. The basic systolic blood pressure was 94.34 (SD 27.02) in B vs. 110 (SD 32.81) in M; p= 0.04. Immediately after the CVS, the systolic blood pressure increased to 105.34 (18.44) in B vs. 110.45 (SD 16.76) in M; p= NS. We recorded only premature ventricular beats after the CVS and no recurrences of VT in either of the groups. Post shock AV block was present in 1 p. in B and 1 p. in M; p=NS. The pre-shock creatinkinase (CK), MB fraction and troponin I (TnI) did not differ in the groups as well as the post-shock MB fraction and TnI. There was a significant elevation of CK after CVS when 360 J MP were applied (1524 ±689 UI/L vs. 81.24 ±85.4 UI/L in B, p= 0.0001. **Conclusions:** Biphasic Multipulse Biowave® pulses are as effective as monophasic pulses in emergent CVS of VT and require 3 times less energy. Our 3 step protocol proved to be safe and effective, and 92 % of the patients restored sinus rhythm using 30 J Multipulse Biowave® BP.

P736

Gender differences in Left Main Artery Disease Assesed by Intravascular Ultrasound

F. Kozak[1], L, Lasave[1,2], A, Abizaid[2], A, Damonte[1], M, Rossi[1], M, Gamen[1], F, Feres[2], E, Sousa[2], E, Picabea[1]. *[1]INSTITUTO CARDIOVASCULAR DE ROSARIO(ARGENTINA) [2]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA(BRAZIL)*

Background: According to previus studies women(**W**) have worse outcomes after coronary revascularization procedures and post myocardial infarction.They also have angiographically smaller and more calcified vessels than men(**M**). The aim was to asses the intravascular ultrasound(**IVUS**) differences betwen genders in patients with mild left main coronary artery(**LMCA**) disease **Methods:** 111 consecutive patients(**M:**84 **W:**27) without significant LCMA stenosis underwent IVUS evaluation during PCI of LAD/CX. IVUS measurements at **LMCA** included external elastic membrane(EEM), lumen, and plaque cross-sectional area and diameters, and plaque/burden(plaque/EEM).We also called and assesed the "***reference* segment**" larger luminal area) and the "***lesion* segment**"(minor luminal area). **Results:** Baseline characteristics were similar in both groups. Mean age was 61±10 in **W** Vs 60±8 in **M**. The EEM (**M:**22,17±6,72mm2 Vs **W:**17,48±5,04mm2 P:0,0012 respectively) and plaque areas(**M:**8.09±3,62mm2 Vs **W** 5,66±2,98mm2 P:0,0021 respectively) at the lesion segment were significantly larger in men than women. **Conclusion:** In the lesion segment analized, we found that women had smaller plaque and vessel area in comparation wih men. This result is similar to other reports, suggesting an intrinsec gender effect on LMCA dimensions

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Need to reinforce the medical concern for smoking cessation. Results from a survey.

J. Isea-Pérez[1], C.I. Ponte, B. Nuñez, J.L. Viloria, A. Reveron, J. Boscan, L. Hernandez, J. Pinto.

To further study the epidemiological characteristics of patients attending the Smoking Cessation Clinic of the "Dr. Domingo Luciani" Hospital Cardiology Unit, a survey was conducted between February 2005 and March 2006 in 117 new out-patients recruited. All these patients (61.5% females and 38.5% males) were on secondary prevention treatment for having any clinical form of atherosclerotic disease (coronary, cerebrovascular or peripheral). 78.5% of women and 80% of men started smoking before 20 year old (47.1% of women and 52.3% of men started smoking between 16 and 20 years of age; and 31.4% of women and 36.4% of men started between 10 and 15 years of age). 64% of these patients had mild to moderate nicotine addiction evaluated with the Fargeströhm test meaning a better chance for a definitive stop on tobacco addiction. Only 52.6% of patients in this sample got previous medical counseling to stop smoking despite having all of them atherosclerotic cardiovascular disease. 97% of patients had a formal medical visit with or without stop smoking advice during previous year but only 17.2% of them reported it as being instrumental to abandon the addiction. These results emphasize the need for a growing concern and the reinforcement of physicians training on techniques of smoking cessation advice, and the reorientation of policies to target on adolescents and children groups on this important matter.

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Importance of Thrombus Aspiration in intrahospital outcomes from Primary Angioplasty

F. F.O. Fernando Fabian Ordonez[1], **C.A.A. Carlos Alejandro Alvarez**[2], A.C. Aberto Cristino[3], V.H. Veronica Heredia[4], C.A.I. Carlos Alvarez Iorio[5]. *[1]Hospital Privado del Sur-Bahia Blanca-Argentina [2]Hospital Privado del Sur-Bahia Blanca-Argentina [3]Hospital Privado del Sur-Bahia Blanca-Argentina [4]Hospital Privado del Sur-Bahia Blanca-Argentina [5]Hospital Privado del Sur-Bahia Blanca-Argentina*

Introduction Distal emboli are one of the most feared angiographic complications of Primary Angioplasty (PA). In the optimization of acute myocardial infarction (MI) treatment, thrombus aspiration (T) has been appointed as one of the most potentially promising techniques. **Objectives** To analyze safety and effectiveness of T with catheter export in PA Population A consecutive, not selected population of 51 patients (pts) was evaluated retrospectively, average age 60 years old (37–80), male: 43 (84,3%), diabetic: 4 (7.8%), previous MI: 5 (9.8%), MI < 3 hours: 17 pts (33,3%), MI > 3 hours: 34 pts (66,6%), MI anterior: 26 (51%), Killip I: 42 pts (82,4%), Glicoprotein IIb/IIIa inhibitors: 1 pt (2%), multivessel disease: 13 pts (25,5%), Timi 0: 48 pts (94,1%). Thrombus load was measured according to length (L) relation of the radiolucent vessel area in relation to its reference diameter (D). Little: L = D, medium-sized: L = 2 times D, large: L = 3 times D, extended: L > 3 times D. Myocardial reperfusion was evaluated with the resolution ST > 50%, myocardial Blush III. **Results** Success of device (catheter): 48 (94,1%), success of procedure: 45 (89%), mortality: 3 pts (5.9%), reinfarct: 3 (5.9%), cardiac insufficiency: 8 (15.7%). No reflow: 1 pts (2%) + slow flow: 5 (9%) = 11%, occlusion collateral branch: 8 pts (15.7%), direct stent: 38/48 (79.1%). T improved flow in 42 pts (82.4%), acute thrombosis of stent: 2 (3.9%). **Conclusions** T was safe and effective using catheter export, improving coronary flow in a high percentage, an acceptable success rate of the procedure and, mainly, of the myocardial reperfusion. Nevertheless, it did not reduce distal embolization significantly, may be this is due to the fact that it was a complex population characterized by a high incidence of initial Timi 0 and a great load of thrombus.

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Does thrombus aspiration with catheter export provide benefits to the intrahospital outcomes of primary angioplasty?

F. F.O. Fernando Fabian Ordonez[1], **C.A.A. Carlos Alejandro Alvarez**[2], A.C. Alberto Cristino[3], V.H. Veronica Heredia[4], C.A.I. Carlos Alvarez Iorio[5]. *[1]Hospital Privado del Sur-Bahia Blanca-Argentina [2]Hospital Privado del Sur-Bahia Blanca-Argentina [3]Hospital Privado del Sur-Bahia Blanca-Argentina [4]Hospital Privado del Sur-Bahia Blanca-Argentina [5]Hospital Privado del Sur-Bahia Blanca-Argentina*

Introduction The thrombus load and /or the distal embolization during Primary Angioplasty (PA) can be a major cause contributing to microcirculatory dysfunction and can be reduced by the removal of previous clots before stenting. **Objectives** To evaluate whether thrombus aspiration (T) with catheter export reduces distal embolism and, potentially, increases the incidence of Timi III flow and improves myocardial microcirculatory dysfunction, affecting favorably the clinical and angiographic outcomes of PA. **Population and methods** A population of 196 consecutive patients with acute ST segment elevation myocardial infarction (STEMI) was analyzed retrospectively. Two groups were identified: one with T: 51 pts (Group I GI) and one with conventional treatment: 145 pts (Group II GII). Both populations were identical, except multivessel disease: GI 13 pts (25%) vs. GII 59 pts (40%) P= 0,05, Timi 0: GI 48 pts (94%) vs. GII 112 pts (77%) P= 0,05. Myocardial reperfusion in both populations was evaluated and compared: segment resolution ST> 50% (RST) and myocardial Blush III (BMIII) and also the angiographic embolization rate with or without T. We also analyzed the relationship between thrombus extraction and direct stent, Timi post wire, post export and post stent. **Results** There were no statistically significant differences in the success of the procedure: GI 88.2% vs. GII 86.2 %, respectively, ST resolution > 70%: 17 pts (33%) vs. 52 pts (35%), resolution ST> 50%: 40 pts (78.4%) vs. 110 pts (75.8%), BM III: 36 pts (70,5%) vs. 93 pts (64%), slow flow + no reflow: 11.8% vs. 13,8%, Timi flow 0 pre: 48 pts (94%) vs. 112 pts (77%) P= 0,05, Timi I pre: 1 pts (1,9%) vs. 5 pts (3,9%) P= 0,05, Timi II pre: 1 pts (1,9%) vs. 12 pts (8,1%) P= 0,05. There were no significant differences Timi degree post aspiration with export. Mortality: 3 pts. (5.8%) pts (5,8%) vs. 16 pts (11%) P= 0,2, cardiac insufficiency: 8 pts (15,6%) vs. 20pts (3,7%) PNS= NS, reinfarct: 3 pts (5,8%) vs. 1 pt (0,6%) P=0,02 respectively. GI direct stenting : 38 pts (74,5%) vs. 55 pts (37,9%) P=0,001. **Conclusion** In our experience T with catheter export was a safe and effective procedure, with a high degree of success and minor complications, with an important immediate improvement of the coronary flow, that allowed the performance of direct stenting to a high percentage of patients with a statistically significant difference between the latter and conventional treatment. Nevertheless, these encouraging results did not achieve a statistically significant difference in relation to the conventional treatment in the intrahospital, angiographic and clinical results.

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Metabolic syndrome and Hepatic Transaminases Levels: Analysis of 33 Patients

J. Knopfholz[1], J.R. Faria Neto[1], A. Moser[1], B.A. Di Rico[1], G. Moreno Jardim[1], V. Bernardes[1], C.L. Pereira Da Cunha[2]. [1]*PONTIFÍCIA UNIVERSIDADE CATÓLICA DO PARANÁ* [2]*UNIVERSIDADE FEDERAL DO PARANÁ*

Purpose: Hepatic steatosis is often found in patients with metabolic syndrome (MS). This condition is frequently detected by transaminases blood levels. The aim of this study is to compare a group of patients with MS and elevated hepatic transaminases and another group with MS and normal hepatic transaminases. **Methods:** We evaluated 33 individuals with MS according to the NCEP-ATP III criteria, selected from a casual sample of out-hospital patients. 36,3% (12) of these patients had elevated alanine transaminase (ALT) or aspartate transaminase (AST) levels (group 1) and 21 had normal AST and ALT levels (group 2). Epidemiological and clinical data were collected from all participants and both groups were compared. **Results:** There were no statistical difference between both groups comparing the gender (p=0,23), presence of hypertension (p=0,52), tryglicerides (p=0,62), HDL cholesterol (p=0,35) and LDL cholesterol levels (p=0,67). We found a statistical significant correlation between AST and ALT levels and fasting glucose (p=0,0067 and 0,026) by Pearson method. **Conclusion:** We found elevated AST or ALT levels in more than one-third of the MS patients. In this population, there were significant correlation between AST and ALT levels and fasting glucose, what suggests that abnormal AST and ALT in patients with MS may be associated with diabetes or glucose intolerance. There were no difference between the two groups in other analysed data. Therefore, further works should be undertaken to identify the clinical significance of AST and ALT levels in patients with MS. **Keywords:** Metabolic Syndrome; Hepatic Steatosis; Coronary risk factors

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Circuit Weight Training and Cardiac Morphology: a Trial with Magnetic Resonance Imaging

M. Camargo[1], R. Stein[2], J. Ribeiro[2], P. Schvartzman[3], M. Rizzatti[2], B. Schaan[1]. [1]*Instituto de Cardiologia do Rio Grande do Sul - Fundação Universitária de Cardiologia,* [2]*Exercise Pathophysiology Research Laboratory and Cardiology Division, Hospital de Clínicas de Porto Alegre* [3]*Medicina Diagnóstica Mãe de Deus Center, Porto Alegre*

Purpose: Both aerobic training and circuit weight training (CWT) improve peak oxygen uptake (VO2 peak). During CWT the circulatory system is exposed to higher pressure, which could induce morphological adaptations in the left ventricle that may be distinct from those derived from aerobic training. Therefore, this study was conducted to compare the effects of aerobic and CWT upon morphological and functional cardiac adaptations detected by magnetic resonance imaging. **Methods:** Twenty healthy sedentary individuals were randomly assigned to participate in a 12-week program of aerobic training (n = 6), CWR (n =7), or to no intervention (n = 7, controls). Training programs consisted of 36 sessions of 35 min each, performed 3 times per week, at 70 % of maximal heart rate, and CWT included series of resistance exercises performed at 60 % of 1 maximal repetition. Cardiopulmonary exercise testing and cardiac magnetic resonance imaging were performed before and after the intervention. **Results:** Aerobic training (mean $\pm$ SD increment: 12 $\pm$ 4 %) and CWT (12 $\pm$ 4 %) improved similarly VO2 peak, while there was no change in the control group. Aerobic training (12 $\pm$ 6 %) and CWT (16 $\pm$ 5 %) improved strength in the lower limbs, and only CWT resulted in improvement of 13 $\pm$ 4 % in the strength of the upper limbs. However, there were no detectable changes in left ventricular mass, end-diastolic volume, stroke volume or ejection fraction. **Conclusion:** In previously sedentary individuals, short-term CWT and aerobic training induce similar improvement in functional capacity without any adaptation in cardiac morphology detectable by cardiac magnetic resonance imaging.

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An Emergency Department Observation Unit protocol for Atrial Fibrillation: Proceedings and Outcomes

MD Tinetti Matias[1], MD Gonzalez Miguel, MD Castro Florencia, MD Costabel Juan Pablo, MD Botto Fernando, MD Albina Gaston, MD Thierer Jorge, MD Giniger Alberto, MD Trivi Marcelo. [1]*INSTITUTO CARDIOVASCULAR BUENOS AIRES*

Objective: To describe our treatment protocol and outcomes of patients (pts) with new onset atrial fibrillation admitted to an Emergency Department Observation Unit (EDOU). **Methods:** Seventy five pts with atrial fibrillation were prospectively admitted in EDOU at a major urban tertiary cardiovascular hospital from May 2006 to July 2007. Inclusion criteria were uncomplicated AF $<$ 48 hours and exclusions were acute coronary syndromes, congestive heart failure, syncope, conduction defects, shock or emboli. AF treatment protocol included cardiac monitoring, serial ECG and routine blood analysis. Oral Propafenone was the preferred antiarrhythmic: 300 mg at the first hour repeated 3 hours later if AF persisted. If the pts didn't recover SR an electric cardioversion was done Mean age was 58.4 years old, 63 % were male, admission heart rate mean was 126; 37 % of patients had prior atrial fibrillation episodes (median 2); mean time from symptoms onset to ED arrival was 5 hours (range 15 min - 24 hours) **Results:** Propafenone was indicated to 72 (96%) pts within first hour of EDOU admission. A second dosis was required in 18 pts (25%). Amiodarone administration was performed only in 1 pt (1.4%) due to medical decision. SR conversion rate in the EDOU was 92% (69/75 pts): 68 under any antiarrhytmic drug and 1 spontaneously. Mean time from admission to SR conversion was 4.14 hours (range 0,5–8 hours). Succesfully SR conversion pts were discharged home in less than 12 hours of EDOU admission. Six pts (8%) were admitted to hospital due to unresolved AF; definite treatment was electric cardioversion in 5 and heart rate pharmacological control in 1. There were no complications in the whole population. None pt was re-admitted in the following 7 days after discharge. **Conclusion:** Patients with an uncomplicated new onset atrial fibrillation $<$ 48 hours can be managed in an Emergency Department Observation Unit with safety and efficiency avoiding unnecessary hospital admissions.

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Superior Vena Cava to Pulmonary Artery Oxygen Gradient is a Function of Coronary Sinus Oxygen Saturation

J Giorgini[1], PD Comignani[1], G Ciambrone[1], S Donato[1], J Gambarte[1], C Higa[1], A Macchia[1], F Novo[1]. [1]*Hospital Aleman. Buenos Aires. Argentina*

Several studies describe an oxygen (O2) saturation gradient (LSO2) from superior vena cava (SVC) to pulmonary artery (PA). However there is considerable controversy regarding the genesis of such gradient, considering that could results from either mixing SVC blood with inferior vena cava (IVC) or by effects related to coronary sinus (CS) and heart's O2 extraction ratio (EmyoO2). We aimed to determined the degree to which LSO2 relates to SCSO2 and to EmyoO2 by measuring these variables in a group of patients undergoing cardiopulmonary bypass surgery. Prospective, sequential observational study. All patients provided informed consent. Thirty eight patients were enrolled. Mean (SD) age was 69.5 (8.6). In 27 cases the procedure was CABG, 2 combined CABG, 8 valvular replacements and 1 combined valvular procedure. Saturation of SVC (80.9% $\pm$ 7.7%) was higher than saturation in PA (79.1% $\pm$ 5.9%) (p=0.09), with LSO2 of 1.75% $\pm$ 6.18%. The saturation in CS (48.3% $\pm$ 11.7%) was significantly lower than either SVC (80.9 % $\pm$ 7.7%) or AP (79.1% $\pm$ 5.9%) ($p<0.001$ each). Systemic O2 extraction was 23.7% $\pm$ 1.2% and EmyoO2 was 52.1% $\pm$ 3.0%. There was an inverse relationship between saturation in CS and LSO2; Spearman r=0.70, $p<0.0001$). Additionally EmyoO2 highly correlates with LSO2 (Spearman r=0.69, $p<0.0001$) We conclude that LSO2 appears to be a function of both CS and IVC blood. The robust correlation noted between LSO2 and EmyoO2 in this cohort indicates that measures of LSO2, while not exclusively a function of SCSO2 are strongly reflective of myocardial O2 utilization.

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Estimating achievable benefit from components of a comprehensive heart disease prevention and treatment program

T. Kottke[1], D. Faith[2], C. Jordan[3]. [1]*HealthPartners Research Foundation* [2]*University of Minnesota School of Medicine* [3]*University of Minnesota School of Public Health*

Because resources are scarce, programmatic initiatives generate opportunity costs, and the burden of heart disease is heavy, it is important to estimate the impact of potential initiatives to prevent and treat heart disease. In order to accomplish this task, we estimated the impact of interventions in a hypothetical population of 100,000 adults ages 30–84 with attributes similar to the United States population. We defined the population as residing in one of 3 heart disease pools: apparently healthy or no heart disease diagnosis; heart disease with a preserved left ventricular ejection fraction (LVEF); and, heart disease with depressed LVEF. The individuals with depressed LVEF would be candidates for defibrillators, biventricular pacing and drug therapy. Heart disease presents in one of 3 ways in our model: out-of-hospital cardiac arrest; acute/emergent syndromes (ACS) that include ST elevation myocardial infarction (STEMI), non-STEMI, and unstable angina pectoris; or, presentation in an ambulatory setting or incidental presentation. In this hypothetical population, 94,734 would have no heart disease diagnosis; 4,462 would have a heart disease diagnosis but have a preserved LVEF; and, 805 would have heart disease with severely depressed LVEF. Without treatment during a one-year period 912 individuals would be expected to die: 700 deaths would occur among apparently healthy individuals with 261 of the deaths from heart disease; 158 deaths would occur among individuals with heart disease and preserved LVEF; and, 54 deaths would occur among individuals with heart disease and severely depressed LVEF. The respective total mortality rates would be 0.7% for the apparently healthy (0.3% cardiac mortality), 3.5% for individuals with heart disease and preserved LVEF, and 6.7% for individuals with heart disease and depressed LVEF. Published statistics and trial data suggest that primordial and primary prevention programs might prevent up to 200 deaths among the apparently healthy; automated external defibrillators would be expected to be used at 36 out-of-hospital cardiac arrests to prevent as many as 7.3 deaths; aggressive intervention might prevent 67 deaths among 724 cases of ACS; treatment with aspirin, beta blockers and statins might prevent 131 deaths among individuals with heart disease and preserved LVEF; and, implantable defibrillators, biventricular pacemakers and drugs might prevent 34 deaths among individuals with heart disease and depressed LVEF. We conclude from this analysis that a comprehensive intervention program might prevent as many as 439 of the expected 912 deaths. Forty-five percent of prevented deaths would be the result of primary and primordial prevention programs, 1.7% would be the result of implementing an AED program, 15% would be the result of aggressive intervention for ACS, 30% would be the result of secondary prevention programs for individuals with preserved LVEF, and 8% would be the result of aggressive treatment of patients with severely reduced LVEF. While the confidence intervals are wide, the analysis suggests that the majority of the benefit from a comprehensive intervention would accrue from primordial, primary and secondary prevention programs.

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Latino's Attitudes and Preferences Regarding Treatment of Hypertension

M.G. Cohen[1], B.L. Sleath[1], S. Blalock[1], A.R. Cerna[1], D.E. Bender[1]. [1]*University of North Carolina at Chapel Hill*

Background: Immigrants from Latin America to the United States (US) face a significant language barrier when they seek treatment for hypertension (HTN). In addition, Hispanics are not familiar with the US pharmacy system, which may be viewed as complicated by immigrants

who are not used to an active pharmacist involvement and the "refill" system. We sought to study the attitudes and preferences towards hypertension treatment among Hispanic immigrants. **Methods:** Subjects with high blood pressure (>140/90 mmHg) or with previous diagnosis of hypertension were identified in two federally-funded outpatient clinics with a large proportion of hispanic patients and a health fair. All interviews were conducted in Spanish by a native speaker. Difficulties with compliance with anti-HTN therapy were investigated in 11 domains. **Results:** A total of 27 Hispanics were recruited in the study. Mean age (range) was 47 (19–65), 50% were female, 44% had HTN for > 2 years, and 48% were on medical therapy. Regarding HTN therapy, 75% reported having 1 or more problems using their medications with an average number of problems of 2.25. The most commonly reported problems are depicted in the table. **Conclusions:** The findings of this pilot study suggest that difficulties in access, patient education, and language are significant barriers in adherence and compliance to anti-HTN therapies among Hispanic immigrants. Interventions aimed at correcting these issues are warranted.

PROBLEMS REPORTED WITH ANTI-HTN THERAPY

Problem	
Cannot understand meaning of label	42%
Cannot read English on label	42%
Difficulty getting to the pharmacy	33%
Difficulty paying for medicines	33%
Cannot read print on the bottle	25%
Difficulty remembering dose schedule	17%
Cannot open the bottle	17%
Side effects	17%
Getting refills on time	17%

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Study of the arterial bypass in delayed postooperative of MR (miocardial revascularization) through Multi-detector Row CT Angiography

A. Tangari[1], G.S. Fernandes, C.A. Cattani, L. Fonseca, R. Castro, A.A. Santos, J.F. Baungratz, J. H. Vila, J. C. Brigante, J. P. Silva. [1]*H. BENEF. PORTUGUESA DE SÃO PAULO - BRASIL*

Materials and Methods - 102 patients, 74 males, 28 females in the delayed postoperative MR (2 years to 25 years): Anastomosis of LIMA-LDA. -3 patients with acute chest pain average age of 64 + / - 6 years. -Toshiba Aquilion 16 rows of detectors - 40 cuts/sec. -Iodine Contrast Media, non ionic 350mg/ml, in 42 pacients. -In 10 patients was administered gadolinium (Gd-Dtpa) due to contra-indication formal use of iodine contrast (allergic to iodine). **Results** In only 2(two) patients (3,8%) were not obtained diagnostic images. In all patients (100%) using iodine contrast media was passible to assess the patency of the bypass graft LIMA-LDA. In 20% of patients using gadolinium were not obtained diagnostic images. Only 4 p (4%) of 102 patients had bypass graft LIMA-LDA oclusion. No patient presented complications with the used method. **Discussion** We evidence that CT MULTISLICE, in relation to other examinations of routine, becomes an excellent noninvasive option. Although to be in initial use, curently the used contrast have low risk, and collaborates to diminish the resistance in carrying through periodic examinations of control. Preoperative evluation with surgical risk. **Conclusions** Multi-detector Row CT Angiografhy is a safe and trustworthy method in the evaluation of the patency of bypass grafts (LIMA-LDA) in the postoperative of MR. The anastomosis of the LIMA-LDA is an effective surgery, a time that 96% of the bypass grafts were patent. Important to determine with precision and certainty of bypass grafts to be patent, also offering the score of calcium, as well as coronary estenos.

P749

Mid-Term Follow up in a population who underwent Percutaneous Renal Artery Stenting due to uncontrolled hypertension

C. Agatiello[1], H Bassani Molinas[1], A Pascua[1], D Grinfeld[1], A Fernandez[1], JM Gabay[1], C Rojas Matas[1], D Berrocal[1], L Grinfeld[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction: Percutaneous renal artery stenting is still a controversial treatment for patients with uncontrolled hypertension. Nowadays, there is trial ongoing to answer this dilemma. We decided to observe retrospectively our data from patients who underwent a percutaneous renal artery procedure focused in the indications, technique, and complications during follow up **Material and Methods:** We analyzed retrospectively 190 patients our data base of patients who underwent a percutaneous renal artery angioplasty from January 2001 to August 2007. The indications for this technique were in patients with uncontrolled hypertension under medical treatment. We define uncontrolled hypertension in patients with hypertension (155/90mmHg) despite medical treatment with at least three antihypertensive drugs. We observe the principal cardiovascular risk factors associated as HTA, dyslipidemia, diabetes, smoker, coronary artery disease associated, dialysis, etc. All the patients had had a planned renal artery angioplasty under aspirin 100mg and clopidogrel 75mg before the procedure. We followed the population by telephone contact or direct visit to the hospital. We excluded the patients who had intrinsic parenchyma renal disease (nephrosclerosis) **Results:** Mean patients' age was 67± 14. All pts have hypertension with three antihypertensive drugs. The characteristics of the populations were: diabetics (35%), obesity (41%), dyslipidemia (69%), smoker (40%), previous coronary angioplasty or CABG (39%), chronic renal failure (29%) with a creatinine value of 1.5± 0.9mg/dl, requirement of dialyses in 3.3% of pts. The technique used for percutaneous renal artery angioplasty was direct stenting in 71% of pts, unilateral renal artery (76%), and bilateral renal artery angioplasty (24%). We observed an immediately decreased in transarterial renal gradient from 40 ± 17.5 mmHg to 7.2 ± 1 mmHg ($p<0.001$). Post-dilatation was performed in 28% of cases and we did not used protection filter devices. Complications occurred in 4 pts (2%): sub acute thrombosis (n=2), retrograde aorta dissection (n=1), vascular complication (n=1), in hospital death (n= 1). Functional improvement was immediate and the patients were discharged at 1.5 ± 2 days, with a post procedure pre-discharge creatinine of 1.6 mg/dl. During follow up the population we observed an immediately improvement in hypertension control with a decrease in the medications required, one antihypertensive drug (27%), two drugs (72%), three drugs (1%). **Conclusion:** Percutaneous Renal Artery angioplasty has become a simpler technique with low risk of complications. This technique allows a control of hypertension in a high risk population and reduces the number of drugs used in the follow up. Nowadays, further randomized trials are ongoing to compare percutaneous renal artery treatment versus maximal medical treatment (CORAL Trial).

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Left Ventricular Function, Evaluated by Means of Myocardial Perfusion Gated-SPECT Scintigraphy in a Population of Low Probability of Coronary Heart Disease

F. Otero[1], A. Salvati[1], R. Geronazzo[1], V. Crosa[1], G. Casella[1], G. Bozovich[1], S. Traverso[1], R. Campisi[1]. [1]*Instituto Argentino de Diagnóstico y Tratamiento*

Objectives: The aim of this study was to determine an hemodynamic pattern between Rest Ejection Fraction (REFR) and Post Stress Ejection Fraction (P-S EF), the Rest End Diastolic Volume (REDV) and Post-Stress End Diastolic Volume (P-S EDV) in patients showing Low Likelihood of Coronary Heart Disease (LL-CHD) **Methods:** The study population includes 200 patients with Low Likelihood of Coronary Heart Disease (LL-CHD group) were studied consecutively by means of rest and stress myocardial perfusion imaging with Gated SPECT Scintigraphy, then compared the mentioned cardiac parameters with another group of patients that had coronary heart disease (CHD group), demonstrated by the antecedent of acute myocardial infarction or any myocardial revascularization procedure. All patients underwent a 2 day rest and stress SPECT protocol, Technetium-99m sestamibi was injected at rest and stress exercising in treadmill. The average time for acquisitions was of 30 minutes (range: 20–60) **Conclusions** 1. The patients of LL-CHD group showed a significant statistical drop of the EDV comparing Rest and Post- Stress. This was accompanied with an increase, quantitatively less, but significant of EF. 2.The patients of CHD group did not show significant changes of the EDV and EF, comparing R and PS. 3. Analyzing the behavior of EDV and the EF, comparing R vs PS in the LL-CHD group suggest a peripherical vasodilatation and adrenergic positive response. 4. The pre-existing damage and/or ischemic myocardium could be the responsible of the hemodynamic response of CAD group.

RESULTS

	R EDV	P-S EDV	p	R EF	P-S EF	p
LL-CHD	86.6 +-2.4	76.5 +- 2.3	0..001	62.5 +- 9	64.7 +- 8	0.05
CHD	109.8 +- 38	111.8 +-39	0.20	54.7 +-11	53.7 +- 11	0.10
p	0.001	0.001		0.01	0.10	

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Prevalence of Noonan Syndrome in adult patients with Primary Left Ventricular Hypertrophy

G. Pereiro[1], I. Masuda[2], H. Cola[3], A. Graziano[4], O. Serraiocco[5], O. Cravero[6], A. Pasca[7], R. Hoffman[8], R. Savanti[9], A. Leon[10]. [1]*HOSPITAL PIROVANO* [2]*HOSPITAL LUIS GÜEMES DE HAEDO* [3]*HOSPITAL PIROVANO* [4]*HOSPITAL PIROVANO* [5]*HOSPITAL PIROVANO* [6]*HOSPITAL PIROVANO* [7]*HOSPITAL LUIS GÜEMES DE HAEDO* [8]*HOSPITAL PIROVANO* [9]*HOSPITAL PIROVANO* [10]*HOSPITAL PIROVANO*

Prevalence of Noonan Syndrome in adult patients with Primary Left Ventricular Hypertrophy. Pereiro Gustavo, Masuda Isabel, Cola Hugo, Graziano Andrés, Serraiocco Osvaldo, Cravero Oscar, Pasca Antonio, Hoffman Roberto, Savanti Roberto, León Aldo. Hospital Pirovano. Hospital Luis Güemes de Haedo. Buenos Aires. Argentina. **Background:** Primary or unexplained Left Ventricular Hypertrophy is the pathology that occurs without a clear increase of load conditions, and is most frequently due to mutations in different sacomere protein genes (Sarcomeropathies). There are other unusual causes that can produce LVPH (non-sarcomere cardiomyopathies) like storage cardiomyopathies and cardio-facial syndroms. Noonan Síndrome is an autosomal dominant cardiofacial condition with typical face dysmorphology, short stature, and associated with a variety of cardiac defects (most commonly, dysplastic pulmonary valve stenosis, hypertrophic cardiomyopathy and atrial septal defect) In approximately 50% of the patients with definite NS, a missense mutation is found in the PTPN11 gene on chromosome 12. This gene encodes the non-receptor protein tyrosine phosphatase SHP-2. **Objective:** To determine the prevalence of Noonan Syndrome (NS) in adults with primary left ventricular hypertrophy (PLVH) using a clinical and echocardiographic screening. **Material and Method:** 40,502 prospective patients (18 to 92 years of age) were studied through echocardiogram, with the usual methodology recommended by the ASE. A primary hypertrophy protocol was used with a scoring system for NS, defining the septal width of >/=13mm as the inclusion criteria. Clinical, electrocardiographic data, X-rays and echocardiographic studies were analyzed. Cases with secondary hypertrophy were excluded. **Results:** 71 not related patients with PLVH were detected (0.17%), with an average age of 54 years +/-9 (36% women, 64% men), of which 2 (2.8% complied with the clinical and echocardiography criteria of NS (0.005% of total). They were 2 males (19 and 36 years old) with typical facial and thoracic alterations, non-obstructive hypertrophic cardiomyopathy and pulmonary valve stenosis with a maximum gradient peak of 60 mmHg. In one of the patients, ostium secundum interauricular communication was detected, and the other patient presented a dynamic right ventricular outflow tract obstruction. None had family history of NS. **Conclusions:** NS is a genetic disease, rarely found in adult clinical practice. It is present in our echocardiographic series of 1/20000, and represented 2.8% of PLVH. It should be suspected in any patient with PLVH, pulmonary valve stenosis and facial dysmorfism. The clinical differentiation is un important objective since the prognosis and therapeutic intervention are different to those of classical hypertrophic cardiomyopathy due to sarcomere gene mutations.

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EFFECTS OF OVEREXPANSION ON STENTS' RECOIL, SYMMETRIA-ASYMMETRIA AND NEOINTIMAL HYPERPLASIA IN AORTAS OF HYPERCHOLESTEROLEMIC RABBITS

G. E. González[1], D.H. Berrocal[2], A. Fernández[2], L. Wilensky[1], C. Morales[1], L. Grinfeld[2], R.J. Gelpi[1]. *[1]Cardiovascular Physiopathology Institute. Faculty of Medicine. University of Buenos Aires, Argentina [2]Department of Interventional Cardiology. Hospital Italiano de Buenos Aires, Argentina.*

Background: It is not known whether overexpansion modifies stent recoil, symmetric distribution of struts, and neo-intimal hyperplasia. **Objectives:** The objectives were: a) to evaluate whether stent overexpansion modifies the geometric configuration of the stent in the arterial wall, b) to determine the relationship between overexpansion and stent recoil and c) to evaluate the relationship between the distribution of struts and neointimal hyperplasia. **Methods:** Twenty tubular stainless steel 316L stents (3.0 and 3.5 mm in diameter) were implanted at 20 and 10 ATM, respectively, in the abdominal aorta of New Zealand rabbits fed a hypercholesterolemic diet (1% cholesterol). Sham operations were also performed in seven animals. Eight weeks post-implantation or sham operation, an intravascular ultrasound (IVUS) study was performed to measure stent recoil and aid in stent classification (symmetric or asymmetric) according to strut distribution. The degree of injury and neointimal hyperplasia were also evaluated in hematoxylin and eosin stained slices. **Results:** The symmetry/asymmetry of stents assessed by IVUS, as well as the neointimal hyperplasia, was similar in both groups. Stent recoil was significantly greater in the 3.0 mm stent (over-expanded) group ($0.28+0.02$ mm), as compared to stent recoil in the 3.5 mm stent group (0.10 ± 0.01mm) ($p<0.05$). The neointimal hyperplasia in histological slices, independent of the implant technique, was predominantly higher in zones with higher strut concentration as compared to zones with fewer struts. **Conclusions:** Stent overexpansion enhanced stent recoil and did not modify symmetric and asymmetric strut distribution. Neointimal hyperplasia was not modified by the implant technique. Interestingly, significant hyperplasia was observed in locations with greater strut concentration, independent of overexpansion.

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What is the Prevalence of Anemia in ADHF?

S. M. Martins[1], C. Medeiros[2], F. M.Oliveira[3], R. Cantarelli[4], C. Sarteschi[5]. *[1]PORTUGUESE HOSPITAL-Recife-PE- Brazil*

Introduction: Increasing evidences suggest that anemia is frequent in patients with acute decompensated heart failure (ADHF) and that can contribute to his morbidity and mortality. The prevalence varies significantly according to the studied population. The Great American Register "ANCHOR Study" documents that 43% of its patients presented anemia. The Brazilian northeast population data is scarce, meanly at the private medicine. **Objective:** Assess the prevalence of anemia in patients admitted with ADHF and establish possible connections with age (ag), gender, renal function, systolic HF x Diastolic HF, length of hospitalization(LH), and in-hospital mortality (Mort.) **Methods:** We evaluated 97 patients consecutively admitted with ADHF in our institution between March and September 2007. Anemia was defined by World Health Organization (WHO) criteria, diastolic HF as EF $\geq$ 45% and renal function by Creatinine $>$ 1,3 (male) and $>$ 1,1 mg/dl (female). The comparison of the patients' characteristics with the presence or absence of Anemia was made utilizing Chi-Square test for the categorical variates, t test for (ag) and the Mann-Whitney test for (LH). **Results:** The mean age of patients was 73 ± 12 years, 48(49,5%) were males. The predominant etiologies were coronary artery disease(44.%), followed by hypertensive cardiomyopathy (30%). Regarding prior medical history 52% had Diabetes, 88% Hypertention, 4% prior cardiac transplant. 35% informed to be on diuretics prior to the admission. The mean length of hospitalization was 12 (1–55) days. Anemia on admission was present in 52% patients with ADHF. The plasma Hb level on hospital admission varied from 4,5 to 15,5 mg/dl. The majority of patients with anemia (80%) presented Hb levels $>$ 10mg/dl. There was no statistical significance of the presence of anemia regarding gender ($p=0.961$), IC systolic (60%) X IC diastolic (40%) ($p=0,609$). The patients with anemia presented a high tendency of renal dysfunction (63% vs 44%, $p=0,113$), and the in-hospital mortality was similar between the groups of (10% vs 14%, $p=0,728$) anemic x non-anemic patients (respectively). The length of hospitalization and the age were higher between the anemic patients ((Mean LH: 11(7–18) vs 7(1–12) days, $p=0.04$) /(Mean age: 69 ± 14 vs 74 ± 12 years, $p=0.02$)). **Conclusions:** The study reports high prevalence of anemia. There was no significant differences between the type of systolic or diastolic IC, suggesting a common physiological and pathological baseline. Despite the non-connection between Anemia and in-hospital mortality; the higher length of hospitalization, renal dysfunction and advanced age classify these as higher risk patients. In ADHF, gathering these characteristics is needed in order to establish more suitable intervention/prevention strategies, fulfilling specifically the Brazilian Northeast population profile.

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ABSENCE OF ASSOCIATION BETWEEN FACTOR XII 46C>T GENE POLYMORPHISM AND CORONARY ARTERY DISEASE IN CHILEAN SUBJECTS

J. Caamaño[1–2], P. Jaramillo[1], C. Lanas[2], F. Lanas[2], L.A. Salazar[1]. *[1]Laboratorio de Biología Molecular & Farmacogenética, Facultad de Medicina, Universidad de La Frontera, Temuco, Chile. [2]Departamento de Medicina Interna, Facultad de Medicina, Universidad de La Frontera, Temuco, Chile.*

Background: Despite clear evidence for the inheritability of coronary artery disease (CAD), studies involving genetic risk factors for CAD in Chilean population have not sufficiently conducted. A common 46C>T polymorphism in the Kozak region of factor XII gene (F12) disturbs the translation of the protein leading to a significant reduction of factor XII levels although its clinical significance is conflictive. In the present study was investigated the posible association between this genetic variant and the presence of coronary artery disease in Chilean subjects. **Methods:** A total of 112 unrelated patients with diagnosis of CAD confirmed by angiography (33 – 74 years old) and 107 healthy controls (30 – 68 years old) were included in this study. The 46C>T polymorphism at the Factor XII gene was evaluated by PCR-RFLP. **Results:** The genotype distribution for 46C>T variant of Factor XII in CAD patients (CC: 41%, CT: 39%, TT: 20%) and controls (CC: 38%, CT: 48%, TT: 14%) was comparable ($P=0.365$). Similarly, the allelic frequency was equivalent ($P = 0.833$). The OR associated to mutated T allele was 1.06 (95%C.I. = 0.72 – 1.56, P=NS) confirming the absence of association. **Conclusion:** This study suggest that Factor XII 46C>T gene polymorphism is not related to CAD in the studied population. Financial support: Convenio de Desempeño-I-2007 (LS), Dirección de Investigación y Desarrollo, UFRO, Chile & MIDEPLAN - Chile.

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Enzyme replacement therapy in Fabry's Disease: Cardiac Analysis

A. Escobar[1], G. Ferrari, C. Kudrle, G. Doxastakis, O. Manuale, F. Casas, L. Dragonetti, S. Makhoul.

Aim: To analyse the efficacy of enzyme replacement therapy (agalsidase alpha galactosidase A) to reduce the degree of left ventricular hypertrophy (LVH) and to stop its progression in 43 patients (p) with Fabry's Disease. **Material and Method:** We retrospectively analysed 43 p. with Fabry's Disease by electrocardiogram (EKG) and echocardiogram and/or cardiac magnetic resonance (MR) prior to and after 2 years' treatment with agalsidase alpha (in doses of 0,2 mg/kg, 10 doses per year). LVH in the EKG was diagnosed by Sokolow criteria. LHV in echocardiogram and MR was assessed by septal and posterior wall thickness measurement and left ventricular mass index. Left ventricular, left atrial and aortic root diameters were also measured. T-test was used for statistical analysis. **Results:** The population under study included 16 women and 27 men, of an average age of 34 $\pm$ 14,4. The most frequent signs and symptoms found were: acroparesthesias in 90% (39 p.), corneal opacity in 90% (39 p.), hypohidrosis in 79% (34 p.), proteinuria in 76% (33 p.), angiokeratomas in 69% (30 p.), fever in 60% (26 p.) gastrointestinal disorders in 58% (25 p.), altered creatinine clearance in 27% (12 p.), dialysis in 11% (5 p.) EKG showed LVH in 15 p. (37%). Basal echocardiogram performed in 32 p. revealed LVH in 16 p., with an average septal wall thickness of 14,5 mm. Basal cardiac MR was performed in 12 p., 10 of them showing LVH with a an average septal wall thickness of 16,5 mm and posterior wall thickness of 12, 1 mm. 6 p. showed late enhancement in the lateral wall. Out of 10 p. tested through EKG and MR 7 p. showed LVH through both methods. A comparative analysis between septal wall thickness prior to and after treatment revealed no significant differerences (p: 0.9), neither was there any significant difference in left ventricular diameter (p:0.2), left atrial diameter (p:0.4) posterior wall (p: 0,9), left ventricular mass index (p:0,42) or aortic root diameter (p:0.19). Within the group of p. with LVH there was no statistical difference in wall thickness prior to and after treatment.(p: 0,5) None of the patients had to suspend treatment due to adverse reactions. **Conclusion:** In this patients, enzyme replacement therapy did not show thickness regression in p. with LVH; however, the use of this therapy could be helpful in preventing further advance of LVH. Moreover, the treatment proved to be safe.

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Rheumatic Carditis – still a challenge in Brazil!

R.E. Müller[1], B.R. Tura[1], S.M. Lamy[1], M.C.C. Kuschnir[12], C. Weksler[1], R.M.A. Xavier[1], M.J.L.M. Silva[1], F.F. Nascimento[1]. *[1]National Institute of Cardiology, Rio de Janeiro, Brazil [2]National Institute of Cardiology, Rio de Janeiro, Brazil [3]National Institute of Cardiology, Rio de Janeiro, Brazil [4]National Institute of Cardiology, Rio de Janeiro, Brazil - State University of Rio de Janeiro, Brazil [5]National Institute of Cardiology, Rio de Janeiro, Brazil [6]National Institute of Cardiology, Rio de Janeiro, Brazil [7]National Institute of Cardiology, Rio de Janeiro, Brazil [8]National Institute of Cardiology, Rio de Janeiro, Brazil*

Introduction: Although easily preventable, Rheumatic Fever (RF) remains prevalent in industrializing countries, and Rheumatic heart disease contributes with 332.000 estimated annual deaths worldwide (WHO 2004). In Brazil RHD is still a major problem, responsible for high mortality and morbidity rates and for great social impact over the society. **Objectives:** To assess patients diagnosed with rheumatic carditis at our institution and their compliance with secondary prophylaxis of RF. **Methods:** Retrospective convenience sample study of records of patients (pt) with rheumatic carditis attended at our institution. Jones Criteria and Doppler-Echocardiography (ECHO) guided diagnosis. **Results:** 95 pts, 52,6% male, mean age 17y (6–46), 5 pt (5,3%) had already a valve prosthesis. Enrollment: 53,7% with functional class III-IV (NYHA). 1st Attack – 33,7%, 3 pt $>$15y old. Recurrence-61 pts (64%): 37,9% pts under irregular benzathine benzilpenicillin prophylaxis, 31% any prophylaxis. 11pt (11,5%) referred regular prophylaxis. 25,3% reported $\geq$2 previous attacks, with a mean recurrence rate of 1,7 attacks/patient. Diagnosis – major criteria besides carditis: 41% polyarthritis; 6,3% Sydenham Chorea; 4,2% subcutaneous nodes and 1,1% erythema marginatum. Minor criteria: 19% arthralgia; 65,3% fever, 17,9% increased PR interval; 87,4 % positive acute phase reactants. Streptococcal infection evidence in 65%. ECHO Data: Mitral Regurgitation- 89,5% (severe-66,7%), Mitral Stenosis 24% (severe 6,3%), Aortic Regurgitation 81,9% (severe-28%), Aortic Stenosis 3,2%, Tricuspid Regurgitation 64,5% (severe 12,4%), Tricuspid Stenosis 1,1%, Pulmonary Regurgitation 18,9%. Average cavity diameters: Left Atrium – 48,7mm (24–93), Left Ventricle (d)- 60,8mm (35–102), Left Ventricle (s)- 42,9mm (21–98). Mean pulmonary artery pressure 56,6 mm Hg (30–137). Mean Ejection Fraction: 63% (32–89%). Left Ventricle Dysfunction 33% (mild 63%) Pericardial effusion 29,5%. Treatment: 1- Hospital admission - 90 pts (94,7%); 2- Eradication of the pharyngeal streptococcal infection and bed rest- 100%; 3- Anti-inflammatory therapy with corticosteroids- 95,8%: prednisone - 91,6%, intravenous methyl prednisolone - 4,2%; 4- Secondary prophylaxis: Intramuscular injection of benzathine benzilpenicillin - 100%. 5- Surgical treatment: 32 pt (33,6%): 50 % (n=16) operated during acute attack; Main surgical procedures: mitral-aortic mechanical prosthesis- 11 pts (34 %).

mechanical mitral prosthesis-6 (18,7%), mechanical aortic prosthesis – 3 (9,3%), biological mitral prosthesis + tricuspid annuloplasty – 3 (9,3%). Main complication: arrhythmia 19,5%. Hospital mortality rate: 4,5% (n=4). Total mortality: 8,6%. Follow-up: regular attendance 68,8%, irregular attendance 9,7%; drop-outs 13%. **Conclusions:** Rheumatic carditis is still prevalent with high morbidity/mortality, often demanding orovalvar surgery. Secondary prophylaxis compliance is a challenge in industrializing countries. Regular benzathine benzilpenicillin administration should be recommended until adult life. National multidisciplinary programs are needed for control of this disease in Brazil.

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HEMORRHAGIC COMPLICATIONS OF COMBINED ANTIPLATELET AND ANTICOAGULANT THERAPY IN ELECTIVE PCI PATIENTS

F. Baraona[1]. [1]*HOSPITAL DR SOTERO DEL RIO*

HEMORRHAGIC COMPLICATIONS OF COMBINED ANTIPLATELET AND ANTICOAGULANT THERAPY IN ELECTIVE PCI PATIENTS Fernando Baraona (1) (2), Germán Ramos (3), Osvaldo Pérez (1) (2), Manuel Méndez (1) (2), Lucio León (1) (2), Eugenio Marchant (1) (2), Alejandro Martínez (2). 1)Servicio de Cardiología, Hospital Dr. Sótero del Río, Santiago, Chile 2)Departamento de Enfermedades Cardiovasculares, Pontificia Universidad Católica de Chile 3)Escuela de Medicina, Pontificia Universidad Católica de Chile **Background:** The potential bleeding risk in patients (pts) on anticoagulant therapy after percutaneous coronary intervention (PCI) have been described in a few serial cases. **Objective:** To review the local experience of bleeding adverse events in patients receiving triple therapy (aspirin, clopidogrel and acenocumarol) for a 6 month period after coronary stenting. **Methods:** Descriptive analysis. Data were collected from cath lab records of elective PCI in anticoagulated patients and medical records. The follow up was done by phone. Hemorrhagic complications were classified according to the clinical condition in: 1) Serious: Fatal, hospital admission, red cell transfusion or target organ damage; 2) Clinical Significant: need of urgent medical evaluation or temporary drug withdrawal. 3) Minor: no characteristics mentioned before. **Results:** 27 patients were collected. Clinical follow up was available in 25 pts (92.5%),15 (60%) pts were men and mean age was 62 ±17 years old. 5 (20%) had chronic renal failure and 1 (4%) previous minor bleeding. The main reason for anticoagulant therapy was: Atrial Fibrillation in 12 (48%), cardiac intraventricular thrombus in 5 (20%), large anterior wall infarction in 4(16%) pts and Flutter, Pulmonary Embolism, Deep Venous Thrombosis and cerebral venous sinus thrombosis for 1 pt each one. 26 (96%) pts were on acenocumarol for a mean time of 4.06 months. The mean aspirin dose was 100 mg / day and clopidogrel 75 mg/ day. Triple therapy time average was 1.37 months. 26 (96%) patients got a Bare Metal Stent (BMS). 8 (32%) pts had hemorrhagic complications: 6 (75%) of them under triple therapy. Serious bleeding in 3 (37.5%): 2 of them were fatal (intracerebral hemorrhage and acute mesenteric embolism). Clinical significant bleeding in 4 (50%) pts (hematuria and melena more frequently). Minor bleeding in 1(12.5%).The patients on adverse event group were older (70 ±12 vs 58 ±12 years) and the mean International Normalized Ratio (INR) higher (3.38 vs 2.31). All the serious events were under triple therapy. Hospitalization was indicated in 4 pts (50%), red cell transfusion in 3 (37.5%) and temporary drug withdrawal in 6 (75%). The patient treated with drug eluting stent (DES) had to suspend clopidogrel because clinical relevant event. **Conclusions:** Patients on triple therapy have a higher bleeding risk and mortality. Adverse event are related to INR, so frequently controls and lower therapeutic levels may be needed, especially in older population. As a short period of combined antiplatelet and anticoagulant therapy is needed, BMS should be the election in these patients.

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Unawareness Of Presence For Cardiovascular Disease Risk Factors In A Brazilian Regional Population

C.M. Richter[1], D.C. Bündchen[1], T. Dipp[1], K.C. Belli[1], T.F. Panigas[1], C.F. Panigas[1], J.Z. Klafke[1], M.A. Silva[1], P.R.N. Viecili[1–2]. [1]*Cruz Alta Heart Institute - ICCA* [2]*Cruz Alta University - UNICRUZ*

Background: Brazilian Health Ministery, throughout preventive programs and promotions of health, such as hypertension day, diabetes mellitus day and heart day, has the objective of increasing the general population knowledge about cardiovascular diseases and the care of them. Besides, the programs are very important to waren as people well as as health authorities about the presence of these risk factors. However, the studies about the impact or program results are not through. **Objective:** To describe the unawareness about cardiovascular disease risk factors in a Brazilian regional population. **Methodology:** In Cruz Alta, south of Brazil, 45.000 urban inhabitants, 673 voluntary individuals were interviewed, on the Heart National Day-2006. A questionnaire was answered and it was taken in consideration: age, sex, diabetes mellitus, smoking, high cholesterol, triglycerides, hypertension, sedentary and stressful lifestyle history. Systolic (SBP) and diastolic arterial blood pressure (DBP), abdominal circumference (AC), body mass index (BMI), and total cholesterol (TC) levels were assessed. The variables were compared to the Brazilian Heart Atlas data of Brazilian Heart Society-2005. Data were expressed by mean ± SD. The variables were analyzed by x^2 test, Student t test, and effect-cause correlation by linear regression. $P<0.05$ was considered significant. **Results:** 388 female (F: 56 ± 14 years; 58%); 285 male and older (M: 58 ± 14 years; 42%; $p<0.001$). The risk factor percentage are in the table below, and it's similar to the Brazilian results. In according to anthropometric variables, 90.2% of women had AC > 80 cm (97.9 ± 13.5 cm) and 77.2% of men had > 94 cm (100.3 ± 11 cm); BMI > 30 Kg/m^2 was found in 27.3% of female and 20% on males. CT >200 mg/dl was measured in 20.6% of women and 11.2% of men. However, the greate amonunt of information accessed preventive programs, and promotions of health, 17% of population had no idea about their glucose blood levels; 8% must never verified the blood pressure, and finally, more than half of subjects had never dosed triglycerides levels. **Conclusion:** In spite of preventive programs and promotions of health concerning cardiovascular diseases, there was an important amount of unawere people of several risk factors. Other studies, must be conducted throughout the population in order to control the effectiveness of state health interventions, as well as population health.

		Cruz Alta (CrA) %			BHA %
		Yes	No	Unawareness	
Smoker	M	23	77	—	26.5
	F	16	84	—	18.8
Diabetes Mellitus	M	11.6	71.2	17.2	11.3
	F	9.8	75	15.2	5.6
Hypertension	M	38.2	54	7.8	35.2
	F	46.6	46.4	7.0	22.6
Triglycerides	M	11.2	33.4	55.4	18.9
	F	16	40.7	43.3	9.3
Sedentary	M	46.7	53.3	—	77.4
	F	50.5	49.5	—	—
Stress	M	53	47	—	—
	F	65	35	—	—

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Glycemic control in patients with type II diabetes mellitus after an acute myocardial infarction – a randomized controlled pilot study comparing glargine insulin plus regular insulin versus insulin pump therapy

C. Sampaio[1], D Franco[2], F Eliaschewitz[3]. [1]*HOSPITAL DO SEPACO - SAO PAULO - BRAZIL* [2]*CENTRO DE PESQUISA EM DIABETES- SAO PAULO - BRAZIL* [3]*CENTRO DE PESQUISA EM DIABETES- SAO PAULO - BRAZIL*

In order to evaluate if the glycemic control could be obtained in patients with type II Diabetes mellitus soon after an acute myocardial infarction with glargine insulin associated with regular insulin, we performed a prospective, randomized study. **Methods:** 20 patients with type II Diabetes mellitus, 9 males, medium age 61±14 were randomized in the first 24h after an acute myocardial infarction. Two groups were constituted: Group A, 10 patients, who received glargine insulin associated with regular insulin, Group B, 10 patients, who received continuous endovenous infusion of insulin as previously published in DIGAMI study (randomized trial of insulin-glucose infusion followed by subcutaneous insulin treatment in diabetic patients with acute myocardial infarction. The insulin therapy adjustment was made based on the capillary glucose. The glycemic data was obtained using a continuous glucose monitoring system (CGMS) protocol beginning in the first six hours until the third day of therapy. We evaluated: 1) The medium glycemic control, 2) Average time exposure to hyperglycemia, 3) Blood glucose excursions (hyperglycemia)/hour, 4) Hypoglycemic episodes and 5) Therapeutic index efficacy (based on time during the best glycemic control (average 84 mg/dl, 70–140 mg/dl), versus medium glycemic control). **Results:** There was no statistically difference between Group A and B as showed below: Medium Glycemia (mg/dl): (group A: 129±46.8) vs (group B: 137±42.8), p= 0.684. Exposure to hyperglycemia (min*mg/dl): (group A: 16.62±19.5) vs (group B: 15.32±10.3), p = 0.473. Excursions to hyperglycemia (excursions/hour): (group A: 0.14) vs (group B: 0.19), p = 0.104. Exposure to hypoglycemia (min*mg/dl): (group A: 1.37±1.6) vs (group B: 0.84±1.5), p = 0.623. Therapeutic index efficacy (%): (group A: 70) vs (group B: 66), p = 0.650. **Conclusions:** There was no difference in glycemic control using the regular insulin pump therapy or glargine insulin plus regular insulin in patients with type II Diabetes mellitus soon after acute myocardial infarction. More data should be acquired in order to analyze the impact in mortality.

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CLINICALS VARIABLES OF INTERRUPTION IN FOLLOWING OF HYPERTENSIVE PATIENTS

R. Altamirano[1], J.O. Ibañez[2], J. Kriskovich[3], R. Perez Rey[4], B.G. Rovai[5], C. Martinez[6], J. Gomez[7], S. Ibañez[8]. [1]*Hospital Escuela Jose Francisco de San Martín* [2]*Hospital Escuela Jose Francisco de San Martín* [3]*Hospital Escuela Jose Francisco de San Martín* [4]*Hospital Escuela Jose Francisco de San Martín* [5]*Hospital Escuela Jose Francisco de San Martín* [6]*Hospital Escuela Jose Francisco de San Martín* [7]*Hospital Escuela Jose Francisco de San Martín* [8]*Hospital Escuela Jose Francisco de San Martín*

The arterial hypertension (AH) control during the time is dificultd to carry on, so there are a lot of patients who interrupted the treatment. **Objective:** To detect the clinicals variables associated to the interruption in the following. **Materials and methods:** It was included 178 hypertensive patients in a consecutives, prospective form. They had the diagnosis before or recient of AH from octuber/01 to april/03. there were analized : demographic variables, antropometric, biochemics, arterial hypertension, risk factors, collateral effects, the following was 3, 6, 9 and 12 months. The estadistical analisys was made using the test of chi 2, and ANOVA o Kruskal-Wallis, the multivaribles analisys was made for multiple regression logistic. It was considered significative an $p < 0.05$. **Results:** the average age was 55.4 (SD 12.7) years and male sex 32.6% (58p). The variables associated in a significative form were: age (< 55 years for COR, area 0.65), alcoholism, recient diagnosis of AH and without comorbilities. The results were showed in attach table. With these variants were made and score: without any variable assist to control 79%, with one variable: 52%, two variables: 35%, three variables 22% and four variables 20%, (p = 0.001)

Variable	Interrupt(%)	OR	CI 95%	P univariable	P multivaribile
< 55 ys	70%	2.2	1.2–4	0.001	0.001
Alcoholism	71%	2	1.07–3.9	0.002	0.02
Recient AH	85%	4.2	1.4–12.8	0.005	0.03
Without Comorbilities	64%	2.3	1.05–5.2	0.03	0.3

Conclusions: there are clinicals variables associated with the interruption of the control at six months, they should be useful to and early recognize of these patients to prevent these factors.

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Blood pressure measurement according to the V Brazilian Hypertension Guideline: does it make difference?

V. Guimarães Neto[1], S. Albuquerque[1], F. Souza[1], S. Lima[1], A. Feitosa[1], G. Falbo[1], D. Carvalho[1], J. Albuquerque[1]. [1]*GETÚLIO VARGAS HOSPITAL*

Objectives: 1) To compare the initial (first) measurement and the final mean (arithmetic mean of the two last measurements) of the systolic (SBP) and diastolic blood pressure (DBP). 2) To verify the number of measurements which are necessary to achieve the most reliable values according to the V Brazilian Hypertension Guideline (V-BHG), between patients with controlled (CH) and uncontrolled hypertension (UH). **Methods:** The blood pressures were measured according to the V-BHG in 150 medical attendings, in patients with hypertension that received medical therapy, in a hypertension clinic. The BP should be measured 3 times and the mean of the last 2 will be considered the patient's BP. If SBP and/or DBP show a difference greater than 4 mmHg, new measurements should be taken until this difference becomes inferior or equal to 4 mmHg. The mean of the last two measurements will be the patient's BP. **Results:** In 77 (51,3%) medical attendings the BP was not controlled, being 28,7% in stage 1, 11,3% in stage 2 and 11,3% in stage 3. The final means of SBP and DBP of the patients with CH and UH were substantially lower when compared to the first measurements means, being this difference even greater as the stage of hypertension increased. In the CH group, it was necessary 3 BP measurements in 63% of the patients and 4 to 8 measurements in 37% of them. In the UH group, the percentages found were 46,8% and 53,2%, respectively (p=0,0456). The percentages of patients with 4 to 5 and 6 to 8 BP measurements for the CH and UH groups were 32,9% and 44,2%; and 4,1 and 9,1%, respectively. When we stratify the patients with UH, we identify means of 3,63 and 4,47 measurements of the BP for the stages 1 and 3, respectively, which shows the need of more measurements as the BP levels increase (p=0,0408). **Conclusions:** 1) There was an important reduction between the initial measurement and the final mean of SBP and DBP; 2) A substantially higher number of BP measurements among the patients with UH was necessary, when compared to the ones with CH, to achieve the values considered more reliable by the V-BHG.

MEASUREMENT MEANS OF BP IN MMHG.

		Initial measurement	Final mean	Difference	p
CH	SBP	121,34	117,95	3,39	p<0,0001
	DBP	75,62	74,32	1,30	p=0,0224
UH	SBP	158,16	148,19	9,97	p<0,0001
	DBP	88,36	85,03	3,33	p<0,0001
UH stage 1	SBP	144,77	136,05	8,72	p<0,0001
	DBP	80,44	77,72	2,72	p=0,0002
UH stage 2	SBP	158,35	149,18	9,17	p=0,0016
	DBP	91,12	87,88	3,24	p=0,0050
UH stage 3	SBP	191,82	177,94	13,88	p=0,0013
	DBP	105,65	100,65	5,00	p=0,0260

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Heart rate recovery after maximal exercise testing in healthy physically active older women

O. Tairova[1], D.R.S. De Lorenzi[1], P.E.G. Carvalho[1], A. Scariot[1], G. Cavalli[1], J.M. Baumgarten[1]. [1]*University of Caxias do Sul*

Purpose: Heart rate recovery (HRR) is a marker of vagal tone but little is known about HRR in older healthy physically active and sedentary women. **Methods:** We studied 60 (mean age 63,2 +6,5) physically active and 120 (mean age 59,9 + 6,7) sedentary women. Active women realized moderate aerobic activity 3 days per week 60 minutes per day during 1 year in Recreation Center of University of Caxias do Sul, Brazil. Sedentary women did not report any of physical activity (PA) during last year. Level of PA was determined using the International Physical Activity Questionnaire (IPAQ). Maximal exercise testing was performed on a treadmill using a Bruce's protocol. A 12-lead eletrocardiogram was monitored continuously, and blood pressure was measured every minute during exercise and throughout the recovery period. The patient's subjective level of exertion was quantified every minute using Borg scale. All the tests were continued up to volitional fatigue or reaching of 100 percent of age-predicted maximum of heart rate. Heart rate was measured supine, standing, during each minute of exercise, at maximum exercise and during active recovery at minutes 1 through 3. HRR was expressed as the decline in heart rate from peak exercise through 3 minutes into recovery. Additionally, there were received normalized HRR recovery curves to a range 1 at peak heart rate and 0 at 3 minutes and adjusted for differences in HR reserve. We used SPSS for Windows version 10.0.1 for statistical analysis. **Results:** No differences were observed between the groups in clinic e demographic data, including age, height, BMI, resting blood pressure, medications and smoking status. Both groups perceived levels of approximately 19 on test, suggesting that maximal efforts were generally achieved. No patient in either group exhibited eletrocardiographic evidence of ischemia during treadmill test or was limited by angina. Maximal oxygen uptake was significantly greater in the active group (27,6 ml/kg^{-1} /min vs. 19,9 ml/kg^{-1} /min in sedentary group,p<0,01). Peak heart rate (HR peak) was significantly greater in the active group (145 ±17,7 beats/min vs. 138,9+ 19,2 beats/min, p=0,017). No difference was observed between the groups for supine and standing heart rate. Heart rate reserve was insignificantly greater in the active group. HRR was significantly faster in the active group for minutes 2 to 3 after training (13,8 beats/min to 8,1 beats/min in the sedentary group, p<0,05). But normalized HRR responses curves did not differ between the groups. **Conclusions:** Physically active older women with moderate activity (180 min/week) have greater HR peak during maximal exercise testing, greater maximal oxygen uptake and faster HRR for minutes 2 to 3 after exercise compared with sedentary older women. HRR may be useful for analysis of the healthy elderly cohort and is associated even with moderate physical activity.

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EARLY VS LATE LOSARTAN EFFECTS ON POST-MYOCARDIAL INFARCTION VENTRICULAR REMODELLING AND EARLY INFLAMMATORY INFILTRATE IN RABITS

G.E. González[1], L. Wilensky[1], L. Krieger[1], J. Palleiro[1], I. Seropian[1], M. Rodriguez[1], R.J. Gelpi[1], C. Morales[1]. [1]*Cardiovascular Physiopathology Institute. Faculty of Medicine, University of Buenos Aires, Argentina.*

Background: It is known that renin angiotensin system is early activated after myocardial infarction (MI). **Objective:** The aim was to compare the effects of different times of initiation and duration of therapy with losartan (L; 12.5 mg/kg/d) on post-MI ventricular remodeling (VR) and early inflammatory infiltrate in rabbits. **Methods:** Rabbits underwent permanent coronary artery ligation or a sham operation. Seven groups, divided in 35 and 56 days of evolution protocols, were utilized: $Sham_{35}$; untreated-MI_{35}; $MI_{35}+L_{[0]}$ (treated from ≈3 h post-MI to day 35); $MI_{35}+L_{[15]}$ (treated from day 15 to day 35 post-MI); $sham_{56}$; untreated-MI_{56}; and $MI_{56}+L_{[15]}$ (treated from day 15 up to day 56). After sacrifice, systolic and diastolic pressure-volume curves were performed in isolated hearts. Subsequently, myocytes diameter (MD, μm) and collagen volume fraction in the scars (CVF) were measured. The scar-thinning ratio (STR) was also calculated. Additionally, the effect of losartan on the cellular inflammatory infiltrate at 4 days post-MI was also studied. **Results:** X±SEM. The infarct size was similar between groups. Table shows functional and histo-morphometric parameters at 35 and 56 days of evolution At 4 days post-MI, treatment with losartan significantly reduced the infiltration of neutrophils, macrophages, and lymphocytes. **Conclusion:** The administration of losartan to rabbits with MI unfavourably modified the ventricular remodeling, depending on the duration of the treatment and not the starting period. The inhibition of the inflammatory infiltrate at the early stage of MI may be responsible for the poor wound healing manifest as reduction in the scar-collagen volume fraction, scar-thinning ratio and the increase of chamber dilation.

	Sham	Untreated-MI_{35}	$MI_{35}+L_{[0]}$	$MI_{35}+L_{[15]}$	untreated-MI_{56}	$MI_{56}+L_{[15]}$
Vol	0.55±0.14	0.96±0.18	1.81±0.33*†	0.94±0.17#	0.93±0.15	1.86±0.28*†
dP/dt_{max}	660±75	561±84	574±69	626±75	675±72	414±89*†
DM(μm)	13.37±0.28	21.13±0.43*	15.61±0.31	15.73±0.25	17.38±0.32*	14.57±0.58
CVF(%)	————	70.54±2.35	57.49±2.48†	73.53±1.38	80.78±1.00	76.26±0.97†
STR		0.94±0.10	1.35±0.12†	0.82±0.12	0.19±0.02	0.28±0.04

Vol: volume (ml) to left ventricular end diastolic pressure (LVEDP) equal 10 mmHg; dP/dt_{max} first derivative (mmHg/sec) as measure at LVEDP= 10 mmHg. *p<0.05 vs sham; †:p<0.05 vs untreated IM; #: p<0.05 vs MI35+L[0]

P767

Cardiovascular Events: 10 years of follow-up in a closed population

J. Tartaglione[1], G. Grazioli[2], M. Sarmiento[3], L. Goldstraj[4]. [1]*CHURRUCA HOSPITAL* [2]*CHURRUCA HOSPITAL* [3]*CHURRUCA HOSPITAL* [4]*CHURRUCA HOSPITAL*

Introduction Previous epidemiological studies have shown that in populations facing equal risk as a result of a sum of classical factors there were differences regarding incidence and expression types of cardiovascular diseases. **Objective** To determine prevalence of major adverse cardiovascular events (MACE) including AMI, unstable angina, stroke, PTCA, CABG or cardiovascular death and their association with risk factors in a closed population. **Material and Methods** In the present prospective cohort study, 2.379 men, Argentine policemen were randomized and submitted to complete physical examination and laboratory tests during the year 1997. After, those who underwent events during the following 10 years were included in the hospital data base and since they belonged to a closed population, follow-up was carried out without losing any patient trace. As far as variables is concerned, "Student test" was used for the quantitative ones and "Logistic regression" for the qualitative ones. **Results** Average age: 39.5+/-9.25. Ninety cardiovascular events were registered during a 10-year follow-up. **Conclusion** Risk factors of classical cardiovascular disease were of similar importance to the ones already reported by epidemiological studies. However, it is important to highlight some non classical ones such as fibrinogen. In view of the characteristic of the profession the analyzed population is engaged in, we are able to carry out preventive programs accordingly.

	Events (N: 90)	Events (N: 90)	p	OR
Hypertension	13	157	0.01	2.18
Diabetes	9	46	0.0001	4.61
Dyslipidemia	36	439	0.0001	2.66
Tabagism	26	399	0.008	1.89

	Events (N: 90)	No events (N: 2293)	p
Age	45.4	39.3	0.0001
Systolic pressure	133.5	132.4	0.71
Diastolic pressure	82.0	80.9	0.57
BMI	29.0	28.3	0.16
Total Cholesterol	221.1	196.1	0.001
HDL	38.4	42.3	0.004
LDL	142.0	122.6	0.005
Fibrinogen	317.8	287.9	0.01
Glycemia	1.00	0.97	0.82

P768

Fraction of the left Ventricle ejection And Auto Declared color and polymorphism of the enzyme Gen Converser of Angiotensin in Heart Failure

B. Cavalieri[1].

Reasons: The polymorphism of the angiotensin II converting enzyme, is in íntron 16 and is the presence-insertion (I) or Absence - deletion (D), 287 of pairs bases, resulting in three distinct genotypes: DD, DI and II. Individuals carrying the DD genotype have tissue and plasma levels of the highest-converting enzyme. Evidences current in the literature suggest that the DD

genotype is responsible for hypertrophy risk factor for heart. Response to TNF of ACE in african-american is less likely due to lower DD prevalence in these patients. **Objective:** To evaluate the correlation of the ejection fraction of the left ventricle in patients with skin color self-declared, Afro or not Afro Brazilian, correlating with the genotype of the enzyme Converser of Angiotensin. **Method:** We evaluatet 107 patients (pts), 74 of them men (69%) with a mean age of 57 ± 12 years, people with stable chronic heart failure, diagnosed by the criteria of Boston. The color of the skin was self-declared, and 91 non - african brazilians (85%) and 16 african - brazilians (15%). All patients were referred to the holding of Echocardiogram Transtorácico for evaluation of the Fraction of eject from VE, classified as heart failure with preserved function systolic FEVE> 45% and heart failure with dysfunction systolic FEVE <45% and search the polymorphism of the ACE gene, using as a method of amplification of genetic material of the polymerase reaction (PCR). **Result: ANOVA of FEVE (%) According to the genotype of ACE (Tabele) Value P = 0.62 - Frequency Allelic: D = 0.6589 (65.89%) and I = 0.3411 (34.11%)** The ratio of systolic dysfunction in the DD genotype was 72.7% in DI genotype was 69.8% and in the II genotype was 80% and where the differences were not significant (P = 0.79). It was observed association between skin color self declared and the genotype (P = 0.007). It identified that the proportion of African - brazilians in the DD genotype (6,25%) was significantly lower than in DI genotype (75%) and the II genotype (18.75%). There is no difference between the DI and II genotype. And the proportion of non - african-Brazilians in the II genotype (7.7%) was significantly smaller than in the DD genotype (47.2%) and DI (45.1%). The proportion of dysfunction systolic Afro Brazilian in the group was 81.3% and not Afro-Brazilian group was 70.3%, and this difference was not significant (P = 0.36). **Conclusion:** The study showed the combination of the frequency of the D allele was more prevalent. The prevalence of genotype DI was 53 pcts (49,53%), and 41 (77.4%) did not African – brazilians and the DD genotype 44 pcts (41.1%), and 32 (33.8%) Not in the African -brazilians. African - brazilians had a low prevalence of allele DD. There was no difference between the values of the FEVE and self declared color and also in relation to genotype.

P769

Effect of remote ischemic posconditioning on endothelial function after one period of sustained ischemia.

J. Álvarez- Gómez[1], Y. Coto Hernández[2], E. Roldos Cuza[3], L. Rodriguez Nandez[4], E. Rivas Stany[5], D. García Barreto[6]. [1]*National Institute of Cardiology and Cardiovascular Surgery, City of Havana, Cuba.* [2]*National Institute of Cardiology and Cardiovascular Surgery, City of Havana, Cuba.* [3]*National Institute of Cardiology and Cardiovascular Surgery, City of Havana, Cuba.* [4]*National Institute of Cardiology and Cardiovascular Surgery, City of Havana, Cuba.* [5]*National Institute of Cardiology and Cardiovascular Surgery, City of Havana, Cuba.* [6]*National Institute of Cardiology and Cardiovascular Surgery, City of Havana, Cuba.*

Introduction: The ischemic preconditioning is able to reduce the damage by ischemia-reperfusion, on the cardiomyocytes and vascular endothelium local and remote. The ischemic postconditioning is able to reduce local damage by ischemia-reperfusion, on the cardiomyocytes and vascular endothelium. For not existing previous evidences of the capacity of the postconditioning, to reduce this damage remote and for their potential clinical applications, we decide to evaluate this capacity. **Method and Results:** In 15 healthy volunteers, that previously gave informed consent, were subjected to three investigation designs with an interval of one week among them (A, B and C). The A design it consisted in assessed by flow-mediated dilation with vascular ultrasound in the right arm before and after IR (20 minutes of arm ischemia followed by reperfusion), the B design it consisted in add a protocol of local postconditioning in the right arm to A desing and C design it consisted in add a protocol of remote postconditioning in the left arm to A desing. The postconditioning protocols consisted on carrying out 3 intermittent cycles of 10 seconds of ischemia-reperfusion during the first minute of the reperfusion. In the A design the flow-mediated dilation, it was of 11.3% in the stage pre-damage IR and 0.25% post-damage IR (p=0.000655); in the B design was of 9.9% in the stage pre-damage IR and post-damage IR 8.7%, (p=0,690945) and in the C design was 10.2% in the stage pre-damage IR and 10.7% in the post-damage IR (p=0.733272). **Conclusion:** The remote post conditioning preserved the flow-mediated dilation, of the damage for the ischemia-reperfusion with similar intensity to that of the local postconditioning.

P770

The post menopausal climacteric woman with hypertension: implications to quality of life and functional capacity.

O. Tairova[1], D.R.S. De Lorenzi[1], P.E.G. Carvalho[1], G. Cavalli[1], A. Scariot[1]. [1]*University of Caxias do Sul, Brasil*

Purpose: To analyse the quality of life and functional capacity of post menopausal women with hypertension. **Methods:** The population consisted of 196 women, divided into 2 groups. The first group made up of 132 women (mean age 62,4 ±7,8) with hypertension (HBP group) proved by home and office blood pressure (BP) measurements at the Ambulatory of University of Caxias do Sul, Brazil. This group was compared with 64 normotensive women (mean age 61,9 ± 7,8) (NBP group) who entered out health-check survey. Patients with severe hypertension, coronary artery disease, heart failure, renal or hepatic disease, osteoarthritis and other severe diseases were excluded. The quality of life was assessed by a structured interview and by Medical outcomes study 36-item short-form health survey (SF-36) validated to the Brazilian population. Every woman underwent to maximal treadmill test (Bruce's protocol) for analysis of functional capacity. We used SPSS for Windows version 10.0.1 for statistical analysis. **Results:** BP controle (<140/90 mm Hg) was achieved in 92,2% of hypertensive women. Pharmacological treatment was based on : Angiotensin-Converting Enzyme Inhibitors (53,03%), diuretics (53,03 %), Beta-blockers (37,12 %) and Calcium Antagonists (7,58%). None of the women of both groups used the hormone replacement therapy. The women of HBP and NBP groups were homogenous regarding age of the last menstruation period : 48,6±4,9 years old in HBP and 49,8 ± 4,5 years old in NBP group. The groups were also similar in marital status, body mass index (27,7 kg/m2 in HPB vs. 27,8 kg/m2 in NPB group), smoking status (89% of HPB and NBP women were non-smokers, and 11% of both groups were smokers), physical activity (68,2 % of HBP and 56,3% of NBP were sedentary subjects; 31,8 % of HBP and 43,8 % of NBP were physically active), economic situation (monthly per capita income was 1,9 minimum wages in HPB e 2,0 minimum wages in NPB), and education level. Both groups showed similar perceptions in their role physical and sexual experience. They no had differences in total score of emotional and mental components and vitality. The evaluation of quality of life by SF-36 showed better scores for the NBP group in : physical functioning (77,3 vs. 63,3; p=0,02), general health (78,7 vs. 63,6;p=0,02) and perception of bodily pain (64,1 vs.53,0,p=0,01). Stress maximal treadmill test showed significantly greater exercise capacity in NBP group (8,4 ±1,2 METs vs. 5,9±2,1 METs in HBP group; p<0,05). **Conclusion:** Hypertension alters the quality of life of climacteric women by limiting the physical capacity to perform ordinary daily activities and by intensifying bodily pain usually present in this phase of live.

P771

ACUTE CORONARY SYNDROME IN THE VERY ELDERLY: DIFICULT DIAGNOSIS, LATE DIAGNOSIS, LESS GUIDELINES APPLICATIONS AND WORSE PROGNOSIS.

A. Lichter[1–2], A.L.P. Ribeiro[2], H.P.M. Pena[1], M.A.M Andrade[1]. [1]*MATERDEI HOSPITAL* [2]*HOSPITAL DAS CLÍNICAS UFMG*

People with more than 85 years old represent about 2% of the population, but account for about 30% of deaths from myocardial infarction (*J Am Coll Cardiol* 2007;49:1790–1797). In 2004 acute coronary care syndromes accounted for 35% of all deaths among persons > 65 years of age (*Circulation* 2007;115:2549–2569). Many of these patients are excluded from clinical trials. From july/2005 to july/2007, a total of 237 patients with confirmed Non-ST-Segment-Elevation acute coronary syndrome were admitted to the Coronary Care Unit of our general hospital. We compare the recognition, instituted treatment, guidelines application and prognosis of the very elderly patients in relation to the elderly and the youngest ones. We divide the patients in three groups. Less than 65 years old (n=108, 45,6%), 65 to 85 years old (n=97, 40,9%) and the very elderly, more than 85 years (n=32, 13,5%). The percentage of women increased with the increase of the age. Time between the first symptom and the diagnosis was a mean of 138 minutes to patients less than 65y., 174 minutes to patients from 65y. to 85y. and 314 minutes to patients more than 85y. At apresentation in the emergency room the baseline characteristics was:

Characteristic	< 65y.	65–85y.	> 85y.
Chest pain	84%	69%	47%
EKG diagnosis	64%	54%	33%
Signs of heart failure	11%	16%	32%

Recurrent myocardial infarction occurred most often in the very elderly patients. The very elderly and the elderly received more blood transfusions. Implementation of the guidelines (aspirin, clopidogrel, GP IIb/IIIa and heparin) was higher in the younger group (86%) and lower in the very older group (51%). In hospital mortality was significantly higher in patients with more than 85y (11,8%) when compared with patients less than 65y. (1,7%) and between 65 and 85y.(5,1%). **Conclusions:** the proportion of very elderly patients (over 85 years) is increasing in the Emergency Rooms with acute coronary syndromes. These patients has the diagnosis more difficult, with more delay and receive less therapy, facts which justify their worst prognosis. Attention to implement the guidelines in this group of patients should be stimulated and a greater clinical suspicion when these patients arrive in Emergency Room with atypical symptoms.

P772

Ambulatory Blood Pressure (ABPM) in high risk patients. Improvement of 24 h profile with intensive treatment

M. Baroni[1], C Cruz, M Gaute, SALA J, C Balestrini, C Serra, M Bendersky.

Objectives: Evaluate changes in ambulatory blood pressure (BP) average, morning BP and nocturnal BP in high risk patients, treated with several antihypertensive drugs who participated in an intensive risk factors control programme. **Material and Methods:** 22 patients, aged 63 years (52 -81), all of them hypertensive patients in secondary prevention, but normotensives when the study was started, with high cardiovascular risk (score 15,14%), under multi-pharmacologycal treatment. Patients were included in an intensive and global risk factors control programme. They were evaluated with a baseline and a final ABPM after a year of treatment. Therapeutic strategy was modified according ABPM results. ABPM: Meditech System (daytime every 15 min and nocturnal measurements every 30 min, 70% valid measurements).Statistics: Paired T test, p < 0.05 was considered significative. Morning BP is the result of hourly BP average obtained between 6–10 h period. **Results:**

	ABPM Basilene	ABPM Final	p<
SBP 24 h(mmHg)	124,18	121,64	0,05
DBP24h(mmHg)	73,95	71,14	0,001
MBP 24h(mmHg)	91,27	88	0,002
HR b/min	69,77	65,77	0,01
Score	15,14	13,91	ns
Morning SBP mmHg	129,23	123,18	0,003
Morning DBP -mmHg	78,23	74,18	0,01

	ABPM Baseline	ABPM Final
Dipper	36%	50%
Non Dipper	55%	45%
Over Dipper	9%	5%

Conclusion: In high risk patients, previously treated with several antihypertensive drugs, a new therapeutic strategy, based in ABPM measurements, achieved a higher BP lowering, a morning BP decrease and an increase of dipper pattern. Even in high risk patients, under multi-pharmacologycal treatment, ABPM allowed to improve patients' BP profile.

P773

Improvement of vascular risk factors management through a stroke prevention program. Programa Integral General de ACV (PROTEGE-ACV)

M. Zurru[1], **C Alonzo[1]**, L Brescacin[1], M Romano[1], J Rojas[1], M Piaggio[1], M Schneider[1], L Camera[1], G Waisman[1], E Cristiano[1]. *[1]HOSPITAL ITALIANO DE BUENOS AIRES*

Background: Use of evidence-based therapies for the prevention of ischemic stroke in patients receiving conventional care remains inadequate, despite the available data and the current international guidelines that support their use. Development and implementation of secondary prevention programs (SPP) improves the quality of care and compliance in ambulatory stroke patients. **Objective:** improve risk factor (RF) detection and management in stroke patients. **Material and methods:** ambulatory stroke patients were included in a SPP with emphasis on initiation and maintenance of antithrombotic drugs, blood pressure (BP) control using ACEs, ARBs and thiazides, lipid-lowering therapy, diabetes control and instruction on life-style modifications. Adherence to program goals was assessed 3 months after the stroke. Patients with severe functional impairment (RANKIN $\geq$ 4), life expectancy less than three years, refusal to participate or to sign informed consent were excluded. PROTEGE-ACV is a multidisciplinary-team program with two internists who carry out the identification and management of vascular RF; two vascular neurologists to classify the stroke and evaluate neurological deficits, functionality, quality of life, and cognitive impairment and two medical students for compliance monitoring. **Results:** 118 stroke patients were included between December 2006 and September 2007. Mean age was 73 $\pm$ 13 years, with 56% males. The main vascular RF were hypertension (85%), hyperlipidemia (56%) and previous stroke or transient ischemic attack (TIA) (28%); 17% were smokers and 31% former smokers. Metabolic syndrome and smoking diagnosis were significatively improved. MiniMental State Examination was $\leq$24 in 22% of patients; however, clock test was more sensitive for executive dysfunction detection. Depression was diagnosed in 33% of patients. According to TOAST classification, 27% of strokes were attributable to small vessel disease (lacunar infarct), 21% cardioembolic, 9% large artery disease, 2% inhabitual and 42% indeterminate. Systolic and diastolic BP were lowered 6 mmHg/4 mmHg, respectively, associated with a significant increase in the use of ACEs ($p=0.0002$). Post-stroke total cholesterol and LDL cholesterol were 148 $\pm$ 33 mg/dl and 77 $\pm$ 25 mg/dl respectively with a significant increase in the use of statins ($p=0.00001$). The entire cohort were receiving antithrombotic therapy three months after the stroke. **Discussion:** The implementation of a quality of care program for prevention of stroke recurrence improved RF detection, evaluation and management within the first 3 months of follow-up after the event. Two important attainments are total cholesterol and LDL cholesterol levels achieved by this group of very high risk patients, closer to the targets recommended by NCEP-ATP III guidelines, probably due to a significant increase in the use of statins. SBP and DBP were significatively lowered with an increased in the percentage of patients under treatment with ACEs. Several studies have demonstrated that the most important risk factor for recurrence is a previous stroke or AIT. Our program has demonstrated that a multidisciplinary approach with special target on RF control and patient education significantly improves the adherence to treatment and narrow the gap between evidence-based guidelines recommendations and clinical practice.

P775

ACUTE MYOCARDIAL INFARCTION IN A NON-PCI HOSPITAL

AC Alberto Caccavo[1–2], CAA Carlos Alejandro Alvarez[1], RU Rogelio Urizar[1–2], AMC Alicia Maria Carrique[1], SAL Sergio A. Lasdica[2], FHB Facundo Horacio Bello[1–2], AEF Adriana Elizabeth Ferrari[1–2]. *[1]CLINICA CORONEL SUAREZ [2]HOSPITAL MUNICIPAL DE CORONEL SUAREZ DR. RAUL A. CACCAVO*

Introduction: The acute myocardial infarction is a frecuent cause of death. In the Argentine Republic most of the patients are hospitalized in Medical Institutions that don't have posibilities of perform Coronary Angioplasty (PCI) **Objective:** To assess the epidemiological characteristics, therapeutic usses and in-hospital mortality of AMI patients in Community Hospitals within the period 2000–2007 **Population, Material and Methods:** This is a descriptive study (January-2000 to August-2007) performed in the district of Coronel Suαrez, province of Buenos Aires, based on the hospitalizations carried out in the only two hospitals with AMI patients admissions. All the patients diagnosed ST segment elevation AMI were included. **Results:** Throughout the study 249 AMI hopitalizations were identified: 79% males and 21% females. The mean age was 63 years old (Men: 61 years old and women: 72 years old) Treatments: Litics SK (107 patients) TPA (48), transfered to another institution for PCI (6), no reperfusion treatment (88) 22 patients died during the hospitalization. The mortality rate was 11.1% in patients older than 60 years and 8.1 % in patients under 60 years (P=NS) Mortality in SK treatment patients was 11.21%; and in TPA treatment patients the mortality was 6.25% (P=ns). Both groups had the same epidemiological variables: **Conclusions:** In our non-PCI hospitals the mortality on the entire population of AMI patients was 8.84% 62,25% of the patients received thrombolytic therapy.

P776

Endothelial function in a model of systemic inflammation

R.A. Sarmiento[1], A. Capuccio, R. Solerno, M. Fenucci, A. Perrone, F. Exposito, A. Videla Lynch, **L. Balletti** , A. Cherro, M. Larroude. *[1]HOSPITAL FRANCES*

Introduction: There is some evidence that patients (pac) suffering from rheumatoid arthritis (RA) had less survival, maybe due to an increase in vascular disease secondary to atherosclerosis. The alteration of endothelial function (EF) is implicated in the pathogenesis and clinic evolution of most cardiovascular disease. For this reason, we wanted to evaluate the presence of endothelial dysfunction (ED) in RA and to observe if there is some relation with the degree of severity of this pathology. **Objectives:** To evaluate the endothelial function in pac suffering from RA and the occurrence of cardiovascular events. **Material and methods:** With their prior informed consent, fifty-six pac have been examined and were divided in two groups: Group A: 22 healthy pac, Group B: 34 pac with RA, with an age : Group A: 55.6 $\pm$ 13.2 years Group B : 55.1$\pm$12.8 years ($p=$NS). The pac of both groups didn't have traditional risk factors for atheroesclerotic cardiovascular disease. The EF was evaluated through the flow-induced vasodilation (VMF) method, showing the percentage of artery dilatation after inducing brachyal ischemia with a cuff. The DAS 28 score (disease activity score) and C-reactive protein (PCR) (inmunoturbidimetryc method $<$ 0.10 mg/L) were considered in the group B to evaluated the activity of the RA. Through the HAQ score (functional status of the patient), the presence of extrarticular manifestations and osteal erosions and the serum rheumatoid factor (FR) we evaluated the severity of RA. After a follow up of two years we estimated the occurrence of cardiovascular events (acute myocardial infarction, unstable angina, stroke, cardiovascular mortality) in the two groups. Results were expressed as X $\pm$ SD. The statistical analysis was done through a T test, chi square test and exact Fisher test being considered $p<0.05$ as significant. **Results:** A significant negative correlation was found between RF and VMF ($r=0.6675$, $p<0.0001$). The VMF was significantly higher in group A (7.25$\pm$4.71%) than in group B (3.43$\pm$4.75%) ($p<0.0065$). We observed a deterioration of the VMF in patients with much more activity and severity of the RA disease: There was no correlation between VMF and PCR or score DAS 28 in the group with low to moderate disease activity (PCR 15 mg/L and DAS 28 0.93–4.35). After the follow up period (24 months) no cardiovascular events were observed in both groups. **Conclusions:** We observed endothelial dysfunction in patients suffering from reumathoid arthritis, wich correlates with the degree of severity of the disease but not with the occurrence of cardiovascular events in a short follow up. Maybe further time of observation is necessary to appreciate this association.

	GROUP A	GROUP B
		HAQ 0–1 HAQ >1 FR1/160 FR >1/160
VMF	7.25$\pm$4.71%	4.93$\pm$4.11% 1.13$\pm$3.30% ($p<0.0198$)

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The CHADS 2 Score as predictor of stroke recurrence: gender comparison

M. Zurru[1], J Rojas, M Romano, L Patrucco, E Cristiano. *[1]HOSPITAL ITALIANO DE BUENOS AIRES*

Background: Although sex differences in coronary artery disease have received considerable attention, few studies have dealt with sex differences in the most common sustained cardiac arrhythmia, atrial fibrillation (AF). The CHADS(2) scheme (an acronym for Congestive heart failure, Hypertension, Age $>$75, Diabetes mellitus, and prior Stroke or transient ischemic attack) successfully identified patients who were at high risk of stroke. Previous studies provide conflicting results about whether women are at higher risk than men for recurrence of thromboembolism in the setting of atrial fibrillation (AF). We examined data from our contemporary cohort of nonvalvular atrial fibrillation patients with ischemic stroke. **Objective:** to evaluate the use of the CHADS 2 score as a predictor of stroke recurrence in women as compared with men with nonvalvular atrial fibrillation. **Methods:** between April 2003 and April 2006 all patients admitted to the Neurology Department with first averts ischemic stroke associated with nonvalvular atrial fibrillation were identified and given a CHADS 2 score at discharged. The patients were followed for one year after the stroke and the risk of embolic events recurrence was established, based on the score determined during the course of the first event. **Results:** 102 patients admitted consecutively for ischemic stroke associated with nonvalvular atrial fibrillation were studied. CHADS 2 score distribution for males was 2 points= 8,3%, 3 points= 25 %, 4 points= 58,3 % and 5 points= 8,3 %; for women: 2 points= 4,7%, 3 points=15,6 %, 4 points= 76,6 % and 5 points=3,1 %. CHADS 2 punctuation was dichotomized in patients who had more than 3 points vs 3 points or less. The recurrence of stroke was analyzed, and it was observed that 8 % of patients with a CHADS 2 score of 3 points or less presented recurrence of the ischemic stroke at one year of follow up, while those patients with more than 3 points presented a recurrence of 44 % within one year (OR=9 CI 95 % 2.1- 9.5). When the associated measurement was stratified to evaluated the effect of gender on the relationship of recurrence, the CHADS 2 score grater than 3, a significant difference in gender was observed (OR 13,4 CI 95 % 2–20 in women vs OR 3,2 CI 95 % 1,5–13,2 in men). **Discussion:** this study suggest that the CHADS 2 score appears more sensitive as a predictor for stroke recurrence in women as compared with men.

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RIGHT VENTRICULAR HYPERTROPHY ALONE AS A NEW FORM OF PRESENTATION OF HYPERTROPHIC CARDIOMYOPATHY.

M. C. Saccheri[1–3], T. F. Cianciulli[1–3], I. V. Konopka[1], R. S. Acunzo[2], **R. J. Mendez[1]**, J. A. Gagliardi[1], L. A. Morita[1], H. A. Prezioso[1], M. V. Elizari[2–3], L. A. Vidal[1]. *[1]Hospital " [2]Dr. Cosme Argerich" [4]Hospital " [5]J. M. Ramos Mejí,a" [6], [7]Researcher of the Secretary of Health, Government of the City of Buenos Aires*

Background: although hypertrophic cardiomyopathy (HCM) has traditionally been character-ized as unexplained hypertrophy of a nondilated left ventricular (LV), there is considerable

variability in the degree, pattern and localization of the hypertrophy. **Objective:** to analyze the electrocardiographic, vectocardiographic and echocardiographic findings in patients with right ventricular hypertrophy (RVH) without LVH in relatives of patient with HCM. **Methods:** adult relatives of patients with HCM were prospectively studied. Electrocardiogram (ECG), vectorcardiogram (VCG), two-dimensional echocardiogram, color Doppler and Doppler tissue imaging were performed in all patients. To measure the thickness of the right ventricle, we employed left parasternal long axis view and subcostal 4 chamber view. The criteria for HCM were as follows: end-diastolic septal wall thickness "d 13 mm or end-diastolic LV posterior wall thickness "d 10 mm. The criteria for RVH were as follows: inferior wall thickness "d 8 mm or right ventricular outflow track thickness "d 5 mm. **Results:** we enrolled 584 relatives of 281 patients with HCM to detect new cases of HCM. We found 5 patients with RVH alone (8,7 $\pm$ 0,99 mm, range 7,4 to 9,9 mm), localized in the inferior wall of the RV and abnormal RV pulsed Doppler tissue imaging due to an impairment of RV diastolic myocardial function: E'/A' ratio $<$ 1 (0,60 $\pm$ 0,08, range 0,52 to 0,74). All patients showed in ECG and VCG pattern of RVH (high R waves in right precordial leads) **Conclusion:** right ventricular hypertrophy alone in relatives of patients with HCM, were not previously published, and could be a new clinical form of presentation for HCM or an early stage for biventricular HCM.

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CLINICAL SIGNIFICANCE OF TISSUE DOPPLER IMAGING IN PATIENTS WITH CHAGAS DISEASE.

T. F. Cianciulli[1–3], J. A. Lax[1], M. C. Saccheri[1–3], **M. A. Beck[1]**, L. A. Morita[1], N. G. Prado[1–2], A. R. Riarte[2], A. N. Dorelle[1], H. A. Prezioso[1], L. A. Vidal[1]. *[1]Hospital " [2]Dr. Cosme Argerich" [4]Instituto Nacional de Parasitología "Dr. Mario Fatala Chaben" [6]Researcher of the Secretary of Health, Government of the City of Buenos Aires.*

Background: the global function index (GFI) derived from the transmitral Doppler and the pulsed Doppler tissue imaging (DTI) allows evaluate the regional left ventricular systolic and diastolic function, and has been recently employed to distinguish the different etiologies of left ventricular hypertrophy. **Objective:** to analyze whether the GFI allows predict the risk of adverse outcome, including stroke, refractory heart failure, sustained ventricular tachycardia (VT), implantable cardioverter defibrillator (ICD), or sudden death (SD) in patients with Chagas disease. **Methods:** GFI = (E/E')/S' (where E is the peak transmitral flow velocity, E' is the early diastolic myocardial velocity and S' is the peak systolic myocardial velocity) was calculated in the septal mitral annulus in patients with Chagas disease. The study group comprised 424 consecutive patients with Chagas disease (mean age 46 $\pm$ 8 years, 228 women, range: 20 to 70 years) who performed two-dimensional echocardiogram (2-D echo) and Doppler tissue imaging. **Results:** The endpoint of the study was defined as stroke, refractory heart failure, sustained ventricular tachycardia (VT), implantable cardioverter defibrillator (ICD), or sudden death (SD). During a mean follow up of 36 months, 14 patients (3,3 %) had reached the endpoint: 6 patients (1,41 %) suffered SD, 4 patients VT (0,94 %), 2 patients (0,47 %) refractory heart failure, 1 patient (0,24 %) stroke and 1 patient required an ICD. No events were detected in the indeterminated form of Chagas disease (without ECG and 2-D echo abnormalities), 6 events occurred in phase 1 form of Chagas disease (only with ECG abnormalities), 5 events happened in phase 2 (with electrocardiographic and echocardiographic abnormalities) and 3 events in phase 3 (with congestive heart failure). A GFI $\geq$ 0,94 was predictive of adverse clinical outcome ($p<0.001$), sensibility: 73%, specificity: 69%. **Conclusions:** a GFI $\geq$ 0.94 identifies patients with Chagas disease who are at risk of stroke, refractory heart failure, sustained VT, ICD or SD.

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Left Ventricular Tachycardia in "Structurally Normal Hearts": In Search of the Lost Substrate.

J Petriz[1–2], O Souza[1–2], A Casarsa[1], A Serra[1], A Glavan[1], L Pereira[1], L Mendonça[1], J Moll. *[1]FEDERAL UNIVERSITY OF RIO DE JANEIRO [2]BARRA D'Or HOSPITAL*

Background: Left ventricular tachycardia (VT) in 'structurally' normal hearts (LVTSN) is classically defined as clinically manifest ventricular tachycardia that is not associated with coronary artery disease or structural heart disease by the conventional imaging methods. Most LVTST have a benign course and are usually reported as idiopathic. Contrast-enhanced magnetic resonance imaging (CE-MRI) has recently emerged as a non-invasive imaging modality that can be used for tissue characterization.The recognition of scar distribution by CE-MRI may identify high-risk patients (pts) with non-ischaemic cardiomyopathy with left ventricular dysfunction but the role of CE-MRI to find anatomical substrate in pts with LVTST remains unclear. The purpose of this study was to highlight the role of CE-MRI for assessing the presence of scar tissue as the potential substrate and mechanism for a malignant variant of LVTSN. **Methods and Results:** CE-MRI (1.5T magnet, gadolinium-based contrast) was performed in 50 pts (35 males; mean age 40 $\pm$ 12 years) under investigation of LVTSN. None of them had clinical history of inflammatory or coronary disease. All pts had normal ventricular function and unobstructed coronary arteries as assessed by echo and coronary angiogram. A small linear epicardial scar (inflammatory 'non-ischaemic' pattern) was found in the infero-lateral segment in 2 pts (4%). They both had clinical presentation of aborted sudden cardiac death. The clinical arrhythmia was a monomorfic VT with RBBB pattern and left axis deviation and the electrophysiological study (EPS) induced clinical unstable VT (arising from the scar site). CE-MRI scan did not detect scar tissue in 48 pts (96%). Reentry mechanism was not detected by latter EPS in these pts. **Conclusion:** The detection of a 'non-ischaemic' focal scar by CE-MRI as the substrate for VT in pts with apparently normal hearts may improve identification of patients at high risk in the setting of suspected previus myocarditis.

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High Sensitivity C - Reactive Protein and Asymptomatic Atherosclerosis Evaluated for Endothelial Dysfunction and Carotid Intima Media Thickness

D. E. Lopez[1–2], G. Scianca[1–2], C. Sturgeon[4], D Morisse[3], **D Avayu[3]**. *[1]Departamento de Medicina Interna, Servicio de Clínica Médica, Unidad N° 1. Hospital Gral de Agudos Dr. Teodoro Alvarez. GCBA. Buenos Aires, República Argentina. [2]Centro de Altos Estudios de Ciencias de la Salud (CAECIS), Facultad de Medicina, Universidad Abierta Interamericana. Buenos Aires, República Argentina [3]Departamento de Medicina Interna, Servicio de Cardiología. Sección Ecocardiografía. Hospital Gral de Agudos Dr. Teodoro Alvarez. GCBA. Buenos Aires, República Argentina. [4]Laboratorio Central, Sección Química. Hospital Gral de Agudos Dr. Teodoro Alvarez. GCBA. Buenos Aires, República Argentina.*

Background: Endothelial Dysfunction (ED) and increased Intima Media Thickness (IMT) are early findings in the development of atherosclerosis that can be assessed by not invasively by echography. Basic science and epidemiological studies have developed an impressive case that atherogenesis is essentially an inflammatory process. A better understanding of the interrelationships between the structure and function of the large arteries with markers of inflammation as high sensitivity C - Reactive Protein (hs-CRP), would lead to optimize cardiovascular disease primary prevention, in persons without clinical cardiovascular disease. According to our knowledge the behavior of the endothelial function, the carotid IMT and its correlation with hs-CRP has not been simultaneously studied in the country. The aim of this study was to investigate the relationship among ED and IMT, and the relation between these diagnosis procedures and hs-CRP morover others cardiovascular risk factors in patients without clinical atherosclerosis **Methods:** There were studied 135 non diabetic patients, selected by the method of consecutive sampling between the months 01/07/06 to 30/06/07, whose were volunteers for free health examinations, performed in the external offices of Medical Clinic and Cardiology of the Hospital Gral. de Agudos "Dr. Teodoro Alvarez" GCBA Buenos Aires Republica Argentina. All patients signed a written informed consent prior to the study. The following variables were analyzed: Age, sex, Body Mass Index, Blood Pressure, hs CRP, Total Cholesterol, LDL, HDL, ApoA, ApoB, Triglycerides. Vascular echography was performed to analyze endothelium dependent vascular dilatation in the brachial artery and intima-media thickness in the common carotid artery. **Results:** All analyses were performed with SPSS/Windows statistical software. Of the 135 patients included in this study (mean age 52,8, 58,5% women; 40% Hypertensive) 97 (71,8%) had IMT (mm) $>$ 0,9; 62 (45,9%) had EF $\leq$ 4,5% (n:62) and 60 (44,4%) had hs-CRP: $>$ 3; hs-CRP: μ4,39; TChol: μ206,79; LDL: μ120,49; HDL: μ59,58; IMT: μ1,1; Endothelial Function (%): μ4,79. Pearson's Coefficient and T test for a mean were realized. There was a significant correlation of hs-CRP between subjects with Diastolic Blood Pressure $\leq$ 90 (Group I: mean 3,76; 95% CI 1,94 -5,58) o $>$ 90 (Group II: mean 6,46; 95% CI 4,28 – 8,65); mean difference: 6,47. There was a significant negative correlation between IMT and ED. The IMT was correlated with LDL and Apo B. Not correlation was find among the level of hs-CRP, IMT and ED. **Conclusions:** The no correlation between hs-CRP and the vascular damage parameters studies by IMT and ED would be because hs-CRP is more sensitive marker of vascular disease. To study this hypothesis we will performed investigations follow up patients with high hs-CRP without arterial abnormalities or hypertension must be performed in order to determine if the high hs-CRP values precede the vascular damage and it would be a prognosis factor and early marker of cardiovascular disease.

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BETABLOCKERS IN ADMISSIONAL TREATMENT OF ACUTE HEART FAILURE : SECURITY AND CLINICAL BENEFITS

M. Montera[1], S. Bernardez, M. Scofano, V Barzilai, A. Volschan, E. Mesquita. *[1]HEART-FAILURE CENTER OF PRO-CARDIACO HOSPITAL [2]HEART-FAILURE CENTER OF PRO-CARDIACO HOSPITAL [3]EMERGENCY UNIT OF PRO-CARDIACO HOSPITAL [4]EMERGENCY UNIT OF PRO-CARDIACO HOSPITAL [5]EMERGENCY UNIT OF PRO-CARDIACO HOSPITAL [6]HEART-FAILURE CENTER OF PRO-CARDIACO HOSPITAL*

Purpose: Evaluate the security and clinical benefits in use of beta-blockers(BB) in admissional treatment of acute heart failure(AHF) patients **Methods:** Retrospective evaluation of 197 patients admitted with acute heart failure: in 65 patients were continued or initiated the BB administration and in 132 patients were discontinued or not initiated the BB administration.The following data were analysed: complicated heart failure development(CHF);systolic blood pressure percentual of variation(SBP%V); heart rate percentual of variation (HR%V);cardio-renal syndrome(CRS) development; in-hospital time (IHT); admissional (AT) and discharge treatment(DT) and in-hospital mortality(IHM).Chi-Square and Mann-Whitney test statystical analyses. **Results:** There were no difference between gender, age, heart failure syndrome and inotropic intravenous group.The patients with BB presented less admissional systolic blood pressure($p=0,0002$),less left ventricular ejection fraction (LVEF) ($p=0,04$), more systolic dysfunction ($p=0,03$) and higher prevalence of high ADHERE prognostic risk($p=0,03$).The patients with BB used less nitroglycerin(53% vs 72%; $p=0,01$),more ACEI(35%vc 15%;$p=0,001$)and no difference in furosemide use in AT. The SBP%V was lesser in patients with BB in first 24 hours (-8% vs -13%;$p=0,03$)and 48 hours(-6% vs -14%; $p=0,01$) and without difference in HR%V.There no difference between the groups in CRS, CHF and IHM development. The IHT was lesser in patients with BB (6 vs 7 days;$p=0,02$).The patients with BB presented more BB prescription (53% vs 72%;$p=0,02$)and higher doses(12,5 vs 10,5mg;$p=0,01$),in DT. There were no difference in furosemide($p=0,9$)and ACEI($p=0,1$)use and posology($p=0,1$),in DT. **Conclusion:** The use of BB in hospital admissional in patients with AHF proved to:a) be safe;b) not increase in-hospital mortality;c)is not associated with increase in-hospital time;d) not increase furosemide use in AT;e) increase the beta-blockers prescription rate and its posology, with no increase in furosemide use in DT.

P784

Nocturnal Blood Pressure (BP) In Patients With No Antihypertensive Treatment

M Cruz[1], M Baroni, J Sala, C Balestrini, C Serra, M Bendersky.

Background: In our geographical area there is no data about nocturnal BP lowering and this is an important topic due to its correlation with target organ damage and cardiovascular prognosis. **Objectives:** Determine the association between different nocturnal BP lowering categories in patients without antihypertensive treatment and its relationship with body mass index (BMI), age and heart rate (HR). **Material And Methods:** 238 patients were underwent to a diagnostic ambulatory blood pressure monitoring (ABPM) by Meditech System (daytime 15 min during the day and nocturnal measurements every 30 min, 70% valid measurements), between January 2006 and September 2007, all of them without antihypertensive treatment; 121 women, mean age 50.8 years (18–74 years), 117 men, mean age 46.5 years (18–75 years); Mean BMI: Women 25.04 kg/m2 (18.8–34); Men 27,50 kg/m2 (18.6- 35). Categories: BMI (kg/m2): Normal: 18.5 a 24.9 kg/m2, Abnormal: $\geq$ 25 kg/m2. Nocturnal BP lowering: Non-Dipper: $<$10%, Dipper: 10 a 19.9% and Over-Dipper: $>$ 20%. Statistics: Chi-square test and Pearson's correlation coefficient were used, $p < 0.05$ was considered significant. **Results: 1.** Pattern's prevalence according to nocturnal BP decrease: 32.77% Non-Dipper; 52.52 % Dipper; 14.71% Over-Dipper **2. Nocturnal BP lowering BMI Non-Dipper Dipper Over-Dipper Normal** 33,33% 36,80% 68,57% **High** 66,67% 63,20% 31,43% BMI is significantly associated to nocturnal BP lowering ($p<0.001$), with higher association between Over-Dipper pattern and normal BMI, and Non-Dipper patterns with increased BMI. **3. Nocturnal HR lowering BMI** $<$10% (beats/min) 10 -19% (beats/min) $\geq$20% (beats/min) **Normal** 37,38% 36,79% 68,00% **High** 62,62% 63,21% 32,00% BMI is significantly associated to nocturnal HR lowering ($p<0.01$), with more HR decrease in patients with normal BMI. **4. Nocturnal BP lowering Age** Non-Dipper Dipper Over-Dipper **$\leq$50 years** 41,03% 53,60% 62,86% **$>$ 50 years** 58,97% 46,40% 37,14% Age has not a significant association with nocturnal BP lowering ($p<0.06$);however younger patients tend to be associated to Over-Dipper patterns and patients over 50 years old tend to be associated to Non-Dipper patterns. **Conclusions** The prevalence of different patterns in this patients is the same as it is observed in other previous studies: Dipper $>$ Non Dipper $>$ Over Dipper. There is an association between Over-Dipper patterns with normal BMI and Non-Dipper patterns with elevated BMI. Patients with lower BMI have more nocturnal HR decrease. Younger patients have a tendency to higher nocturnal BP lowering.

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A qualitative systematic review into helpseeking during heart failure : Barriers and facilitators to prompt treatment

AM. Clark[1], L Svard[1], S Heath[1], F McAlister[1], J Spiers[1]. [1]*UNIVERSITY OF ALBERTA*

Background Chronic heart failure (CHF) is prone to rapid and severe exaccerbation. Patients wait on average 2–3 days and up to 5 days prior to seeking help from health professionals for worsening symptoms. These delays lead to worse life quality and expectancy and higher health care costs via increased hospital admissions. However, there is limited current understanding of what influences patient help seeking. **Methods** Given the lack of dedicated research into help seeking but the relative wealth of recent general studies of experiences of managing CHF, a qualitative systematic review (meta synthesis) was undertaken using an approach recommended by the Cochrane Collaboration. Studies containing data or themes related to help seeking during CHF were identified from a systematic search (- 31ST July 2007). Studies had to be published after 1995, report original empirical research from a qualitative study or with extractable qualitative data, and include data or themes related to help seeking specific to CHF. Over 100 search terms relevant to CHF were used to identify studies. Databases searched: CINAHL (1937-), Medline (1950-), PsycInfo (1985-), Social Science Citation Index (1956-), Embase (1988-), Social policy / Practice (1980-), SocIndex (1895-), Ageline (1978-), Health Source Nursing (1975-), Scopus (1996).We hand searched reference lists and recent papers for any missing citations. 2553 articles were identified of which 2000 were original unique papers. After applying the selection criteria, 94 papers were selected for detailed review. Review of full copies of these papers against the inclusion criteria resulted in 37 being identified. Overall study quality was low to moderate mainly due to small sample size and limitations in analysis. **Findings** There was a very strong consensus across studies that while symptoms were ever present and highly intrusive, patients had very limited knowledge of what CHF was and it how the condition was linked to symptoms. There was widespread evidence that symptoms heightened anxiety levels. Main factors identified across studies that contributed to delays included: difficulty understanding the significance of symptom changes, misattribution of symptoms (mostly to external or other non-CHF cardiac ailments), reliance on general delay inducing strategies (including 'waiting it out', distraction and denial), fear of hospitals, poor communication with health professionals, and a lack of involvement of caregivers in consultations. Main factors noted to decrease delays included the presence of severe dyspnoea, a higher sense of the controllability of symptoms, advice from caregivers to seek professional help, and reassurance from health professionals that it was appropriate for patients with CHF to seek help.There was wide disagreement in studies about the sources of support that patients saw as being accessible and appropriate to access. **Recommendations** Patients with CHF require education regarding when and how they should seek help during symptom exacerbations. Caregivers should be included in education as they can positively influence the help seeking process. Interventions should focus on improving the understanding and attribution of symptoms, reducing fear of hospitalization and the avoidance of denial. Patients need reassurance that it is appropriate for them to seek professional help with CHF symptoms.

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Quality of Care: Acute Cardiac Failure Treatment in a Cardiac Failure Unit

M. Montera[1], S. Bernardez, V. Barzilai, A. Volshan, M Scofano, E. Mesquita, A. Ribeiro.

Purpose: There has been an increase in hospital admissions due to acute cardiac failure (ACF); therefore it seems of importance to perform studies of quality of care in ACF. We performed a study to assess the quality of care for ACF in a cardiac failure unit (CFU) at an emergency department. **Methods:** A series of consecutive patients with ACF admitted to a cardiac failure unit of a tertiary private hospital, between 10/2005 and 12/2006. Data were prospectively collected. Two groups were compared: systematic approach defined by the CFU-protocol (SA-G) and non systematic approach (NSA-G), defined by an independent physician with no obligation to follow the CFU-protocol. The quality indicators for comparison were: IV nitroglycerin after admission (IVNtA), hospital length of stay (HLS); rate of transfer to intensive care unit (RTICU); in-hospital mortality rate (IHMR); occurrence of cardio-renal syndrome (C-RS) and drugs at discharge (D), β blockers and ACE-inhibitors/Angiotensin Antagonist Receptor (AAR). Statistical analysis performed: Mann-Whitney; t-test and Chi-Square. **Results:** 157 patients were included. (Table) **Conclusions:** The in-hospital morbidity and mortality rate was lower in the SA-G. There was evidence of better quality of care for ACF in the group of patients who underwent a systematic approach defined by the CFU-team. IV nitroglycerin after admission (IVNtA), hospital length of stay (HLS); rate of transfer to intensive care unit (RTICU); in-hospital mortality rate (IHMR); occurrence of cardio-renal syndrome (C-RS) and drugs at discharge (D): ßblockers and ACE-inhibitors/Angiotensin Antagonist Receptor (AAR)

QUALITY OF CARE INDICATORS : SA-G VS. NSA-G

Quality of Care indicators	SA-G. n=85	NSA-G. n=72	p-value
IVNtA	20/m	10/m	0,03
HLS	6,0 days	7,5 days	0,04
RTICU	40	70	0,0003
IHMR	5,3%	12,5%	0,02
C-RS	13%	37%	0,01
ßblockers- D	90%	54%	0,000005
ACE-I/AAR -D	78%	66%	0,08

P787

Cost Evaluation of Acute Cardiac Failure Treatment in a Cardiac Failure Unit

M. Montera[1], S. Bernardez, I. Marques, E. Mesquita.

Purpose: There has been an increase in hospital admissions due to acute cardiac failure (ACF); therefore it seems important perform studies of cost evaluation in ACF. We performed a study comparing the costs for treatment of acute cardiac failure (ACF) in a cardiac failure unit (CFU) versus non-CFU, at the same hospital. **Methods:** A serie of consecutive patients with ACF admitted in a CFU of a tertiary private hospital between 10/2005 and 12/2006. Clinical data were collected prospectively and data for cost analysis, retrospectively. Comparison between two groups: systematic approach defined by the CFU-protocol (SA-G) and non systematic approach (NSA-G), defined by a physician with no obligation to follow the CFU-protocol. In each of these groups, two sub-groups were also compared: more complex treatment (MCT-G) versus less complex treatment (LCT-G). The hospital bills were on a fee-for service modality. Statistical analysis: Mann-Whitney test. **Results:** 157 patients were included: 85 pts(SA-G), 72pts(NSA-G). There werent differences between SA-G and NSA-G in relation to ADHERE in-hospital risk profile and clinical and hemodynamic base-line characteristics. The patients of SA-G presented lower IHTC(-28%; p=0,01) due to a lower equipments rent (-37%;p=0,007), medications (-36%;p=0,02),diagnostic exams(-28%; p=0,02) and several materials(-24%;p=0,02). In sub-groups analysis, the IHTC of patients of SA-G versus non-SA-G, were lower in MCT-G (-60%; p=0,04) and LCT-G(-40%; p=0,03). **Conclusions:** There is an in-hospital cost-reduction of 28% for the treatment of acute cardiac failure defined by the CFU-team. The difference is even more evident in patients with more complex treatment modality

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Impact of gender on coronary artery bypass results. Differences between men and women.

E. Gabe[1], M Santos[1], J Abud[1], E Dulbecco[1], H Raffaelli[1], M Rodriguez Acuña[1], A Arnedo[1], F Robles[1], R Boughen[1], RR Favaloro[1]. [1]*ICYCC. Favaloro Foundation.Argentina*

Purpose: The aim of this study was to compare clinical characteristics, surgical technique and hospital outcome between men and women undergoing isolated coronary artery bypass grafting. **Methods:** We analysed prospective data of 4.955 patients admitted between January 1997 and June 2003 in a single hospital. Wald's logistic regression was employed to find odds ratio for death, hospitalisation period duration and complications according to the patient's gender adjusted for baseline clinical characteristics and surgical technique. **Results:** Sixteen percent were women. Women were significantly elderly (mean age 60.7 + 9.6 vs. 65.5 + 9.3 years, P<.0001). History of diabetes (P=.0002), hypertension (P<.0001), hypothyroidism (P<.0001) and emergent surgery (P=.0001) were predominant in women, meanwhile previous smoking (P<.0001), chronic renal failure (P=0.003), previous myocardial infarction (P<.0001), severe left ventricular dysfunction (P=.0002), left main disease (P=.007) and triple vessel disease (P<.0001) were prevalent in men. Female hospital mortality was 6% OR 1.43 (95% CI, (1.19–1.60; p=0.002). The use of left internal mammary artery graft was similar in both groups. Radial artery graft (P<.0001), double mammary artery graft (P<.0001), complete arterial revascularization (P<.0001), multiple vessel revascularization (4 or 5 grafts, P<.0001 and P=.0074 respectively) were used more frequently in men. Women developed a greater number of major complications: perioperative myocardial infarction OR 1.34 (1.13–1.50; p=0.0003) low cardiac output syndrome OR 1.51 (1.41–1.59; p=0.0001), intra aortic balloon

pump use OR 1.54 (1.36–1.66; p=0.0001), sepsis OR 1.54 (1.16–1.75; p=0.01) and any complication OR 1.15 (1.00–1.28; p=0.05). Female had more prolonged in hospital stay OR 1.24 (1.11–1.33; p=0.001). **Conclusions:** From the present series of patients it was evident that both genders showed significant differences in baseline clinical characteristics in surgical technique and in hospital results. Females showed worse evolution

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Coronary artery bypass surgry. Clinical risk predictors of in-hospital mortality.

E. Gabe[1], M Santos[1], E Dulbecco[1], J Abud[1], H Raffaelli[1], M Rodriguez Acuña[1], A Arnedo[1], F Robles[1], R Boughen[1], RR Favaloro[1]. *[1]ICYCC. Favaloro Foundation.Argentina*

Purpose : The aim of this study was to analyse in- hospital results of a group of patients who underwent isolated Coronary Artery Bypass Grafting (CABG) and to identify clinical risk predictors of in-hospital mortality. **Methods :** Between 1/97 and 1/2001 (48 months), 3851 patients were underwent CABG consecutively. Mean age group was 61.18 + 9.9 years (range: 25–89 years). Six hundred and thirty three were female patients (16.4%). The procedures were elective in 2758 cases (71.6%). The most frequent indications for surgery were chronic stable angina in 621 cases (16.1%), progressive angina in 1484 patients (38.5%) and unstable angina in 1302 cases (33.8%). We used the left internal mammary artery as anastomosis "in situ" graft, right internal mammary as free or "in situ" graft, radial artery connected to the left mammary, or directly emerging from the ascending aorta, autologous saphenous vein graft. The extracorporeal circulation was not used in 546 cases (14.1%). **Results :** An average of 3.05 grafts per patient was constructed. The left internal mammary artery graft, for left anterior descending artery was used in 93.2% patients, the right internal mammary artery graft in 17.9% and radial artery graft in 39% to the right coronary, diagonal and circumflex artery. The in-hospital mortality was 4.2% (162 patients). The most frequent complications were low cardiac output in 965 patients (25%), peri operative acute myocardial infarction in 184 cases (4.7%), renal failure that required dialysis in 67 patients (1.7%), stroke in 66 patients (1.7%), prolonged mechanical respiratory assistance in 259 cases (6.7%), and mediastinitis in 57 cases (1.5%). In 2596 patients (67.4%) no complications were observed. Mean postoperative hospital stay was 7 days (Percentiles 25%–75%: 6–9 days). The multivariate analysis identified female gender, age, angina within 24 hours before surgery, previous surgery, emergency surgery, severe left ventricular dysfunction and chronic renal failure as independent predictors of in-hospital mortality. **Conclusions :** CABG can be performed without complications in the vast majority of the patients. An adequate revascularisation can be achieved with internal mammary artery graft even in elderly. In this series, elderly patients, women, non-scheduled procedures, coronary reoperation, presence of angina in the previous 24 hours of procedure, chronic renal failure and severe left ventricular dysfunction were idenfied as predictors of in-hospital mortality.

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LV Remodelling Features in Athletes and Hypertensive Subjects

N. Sharashidze[1], Z Pagava, G Mamaladze, T Kishmareia, G Saatashvili. *[1]Tbilisi State University [2]Tbilisi State University [3]Institute of Cardiology [4]Institute of Cardiology [5]Institute of cardiology*

It has been suggested, that LV remodelling in athletes is physiological phenomenon unlike in subjects with pathological heart hypertrophy. The aim of the present study was evaluation of the mass, size and LV function in athletes and hypertensive patients. **Methods:** We studied 52 soccer players (I group), 30 hypertensive patients (II group) and 15 healthy volunteers (III group). LV mass and function was evaluated by Doppler echocardiography. **Results:** In all groups LV-mass, End systolic-diastolic diameters, septum and posterior wall thickness, ejection fraction, LV diastolic filling velocities: VE, VA was measured. Pulmonary vein flow was assessed. LV mass index was 188+-14,5g/m^2 (95% CI 165–121) in I group, 168+-6,5g/m^2(95% CI 138–182) in II group and 106+-5,3g/m^2(95% CI96,4–115,6) in III group. VE/VA in I group 1,1±0,9 (95%CI 0,5–2,58), 0,85±0,33 (95%CI 0,43–1,161) and 1,12±0,3 (95%CI 0,72–1,52) in II and III groups. Comparison showed, that group of athletes is more heterogeneous depending on standard deviation and wide variation of 95% CI of study parameters. From me group 15 subjects were separated. In all of them variation of indices significantly exceeded the variations in control group. This 15 athletes formed group IA After separation I group became more homogeneous (group IB). In IA group LV mass index was 188+-3,2 g/m^2 (95% CI 182–193,6) and 172+-4,1g/m^2 (95% CI 163,9–180) in IB group. VE/VA in IA group was 1,0±0,25 (95%CI 0,56–1,44) and 2,2±0,28 (95%CI 1,1–2,7). In IB group LV mass growth was associated with heart function enhancement, while in IA group large LV mass and signs of impaired diastolic function was found, like in patient's group. **Conclusions:** We suggested that LV Hypertrophy in athletes is not always pure physiologic adaptation and individuals with impaired LV function may be at higher risk of cardiovascular events, than athletes with preserved heart function.

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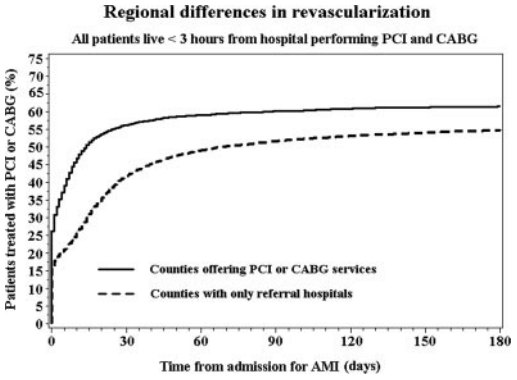
Heart failure in population over 50 years in Bulgaria

M. Grigorov[1], J. Uzunangelov[2], A. Velkova[3], M. Tsekova[4], S. Djambazov[5], V. Bratanova[6], A. Bajkova[6]. *[1]Specialized Hospital for Active Treatment in Cardiology Pleven [2]Noninvasive Cardiology Ward UMBAL Pleven [3]Faculty of community health MU Pleven [4]Intensive Cardiology Ward, University Hospital for Active Treatment G.Stranski, MD - Pleven [5]Tchaikapharma High Quality Medicines Inc. [6]Second Municipality Hospital Sofia*

Aim The purpose of this study was to assess the usefulness of measurement of serum natriuretic peptide levels (NT pro-BNP) when added to ordinary ECG and echocardiography



examination in patients over 50 years admitted to out-patient care units with suspected heart failure (HF) for establishment of HF diagnosis in this population. **Materials and methods** Baseline plasma NT pro-BNP concentrations were measured in 512 patients, every second patient who entered an ambulatory cardiology practice and underwent physician's examination. Ten study centers participated and study duration was 6 months. Patients with chronic renal insufficiency, ànemia, on hormonal therapy and these with chronic obstructive pulmonary disease (COPD) were excluded from the study. All patients had clinical examination, ECG and echocardiography were performed and blood sample was taken for creatinin and NT-proBNP measurement. The non-invasive examinations were performed without the data from NT pro-BNP tests. The patients were divided into 7 groups according to the presence or absence of arterial hypertension (AH) or coronary artery disease (CAD) in their history, clinical signs of HF, data for left ventricular hypertrophy (LVH), systolic (LVSD) and diastolic left ventricular dysfunction (LVDD) or both, presence of previous CAD with or without myocardial infarction (MI). **Results** 37,1% of study patients had normal BP as measured by the physician, 11,3% - no AH, nor CAD and 45 with previous MI. The mean NT pro-BNP level in the study patients was 298±53,42 pg/ml. NT pro-BNP <100 pg/ml was measured in 47,5% (n=243) patients, levels of 101–500 pg/ml - in 33,6% (n=172) ànd >500 pg/ml – in 18,9% (n=97). Patients with diabetes type I had a significant difference in NT pro-BNP levels <100 and >500 pg/ml (p=0,005). We found that patients with normal LV function on echocardioghraphy (n=180) had NT-proBNP>500 pg/ml in 10%, these with LVDD (n=271) did not have a significant difference in NT pro-BNP levels. Patients with LVSD on echocardiography (n=61) and BP>130/80 mm Hg showed a significant difference in NT pro-BNP levels <100 and >500 pg/ml (p=0,0001). **Conclusion** Measurement of NT pro-BNP levels added to other noninvasive clinical investigations in patients over 50 years with or without previously known AH or CAD, even if they are asymptomatic, with or without changes on echocardiography, can be very helpful in everyday practice for diagnosing patients with HF at every stage. The great contribution is identifying patients with heart failure stage A.

P795

Short-term effects of a low intensity physical activity program on cardiometabolic profile of sedentary patients with metabolic syndrome

CM Colombo[1], R Macedo[1,2], AM Caporal[1], **JR Faria Neto**[1,2]. *[1]Pontificia Universidade Catolica do Parana [2]Hospital Cardiologico Costantini*

Patients with metabolic syndrome (MS) have a cluster of cardiovascular risk factors, including disturbed insulin and glucose metabolism, hypertension, abdominal obesity, and dyslipidemia. Sedentary life style is often associated with MS, and most of the patients are unable to adhere to more intense programs of physical activity. We sought to evaluate whether a low intensity program could improve different components of MS in sedentary patients. Twenty one patients with MS according to IDF criteria (where abdominal obesity is mandatory) were submitted to a 3 times a week program of supervised physical activity, which consisted of walking/running for 40 minutes to achieve 50–60% of reserve heart rate. Patients were evaluated before and after 12 weeks of training. Five patients dropped out of the study: one had a muscular lesion and four did not adhere to the program. In those 16 who completed the program, 5 were male and mean age was 60.0 ± 8.5yo. All patients improved their fitness capacity, as demonstrated by a 13% improvement in maximal oxygen consumption (VO2 max). There was a significant reduction in body weight (-1.13 ± 1.9Kg; p=0.03) and abdominal circumference (-1.31 ± 2.21cm; p=0.03). Systolic blood pressure dropped from 141 ± 18 to 129 ± 13 mmHg and diastolic from 79 ± 12 to 71 ± 10 mmHg (p<0.05 for both). No changes were observed on total cholesterol, LDLc and triglycerides, but HDLc markedly improved: 45.5 ± 6.0 to 49.5 ± 9.8 mg/dl (p=0.02). Fasting glucose remained in the range of glucose intolerance, but a slight elevation occurred: 105.4 ± 39.3 to 114.9 ± 38.5 mg/dl. All these modifications were associated to a 12.7% reduction in C reactive protein (CRP) level (p=0.07). In conclusion, beneficial effects of low-intensity physical activity in most of components of MS could be observed after 12 weeks of training. These data strongly supports the recomendation of physical activity to all sedentary patients with MS.

P796

Centralization of Invasive Cardiac Care Results in Less Invasive Treatment in Areas With Only Referral Hospitals

A. Hvelplund[1], J. N. Rasmussen[1], S. Rasmussen[1], S. Z. Abildstrøm[3], M. Madsen[2], S.

Galatius[3], J. K. Madsen[3]. [1]National Institute of Public Health, University of Southern Denmark [2]Institute of Public Health, University of Copenhagen [3]Department of Cardiology, Gentofte Hospital

Background: Until 2007 Denmark (population 5,5 million, universal health insurance coverage) consisted of 15 counties providing healthcare services. Five counties had hospitals with highly specialized units performing percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG). The ten other counties referred patients to one of these five PCI and CABG hospitals for the procedure. We investigated if living in a county without a PCI and CABG hospital resulted in a lower likelihood of PCI or CABG after a patients first Acute Myocardial Infarction (AMI). **Methods:** From a national database all patients 30–85 years old hospitalised with first AMI from January 2002 to July 2004 were included. Cox proportional-hazard models were used to estimate the association between county of residence and PCI or CABG within 6 months of the AMI adjusted for gender, age, previous PCI or CABG, comorbidity, clustering at hospital level and socioeconomic status. **Results:** Of 18 415 patients with first AMI in the period, 55% received PCI or CABG. Of the 8993 patients from the five counties with PCI and CABG hospitals, 59% received PCI or CABG versus 51% of the 9422 patients from other counties. Adjusting for all variables the hazard ratio of receiving PCI or CABG was 0.65 (95% confidence intervals 0.63–0.68, p < 0.0001) if living in a county without PCI and CABG facilities. **Conclusion:** PCI or CABG after AMI in Denmark is centralized in highly specialized hospitals in order to achieve a high level of expertise. A more focused effort on offering a similar service to patients in areas with and without PCI and CABG hospitals is needed.

P797

Characteristics and dynamics of resistance to antiplatelet drugs in patients with acute myocardial infarction treated with standard doses of acetylsalicylic acid and clopidogrel

D. Milicic[1], B. Skoric[1], D. Lovric[1], K. Narancic Skoric[2], J. Sertic[3]. [1]Clinic for cardiovascular disease, Clinical Hospital Center Zagreb [2]Clinical Hospital Merkur [3]Clinical Institute of Laboratory Diagnosis, Clinical Hospital Center Zagreb

Background: A little is known about dynamics in antiplatelet effect during acute and late phase of myocardial infarction, its association with conventional risk factors and the extent of myocardial damage. We have evaluated the dynamics of platelet response to aspirin and clopidogrel, and their assocciation with conventional risk factors, heart failure or the extent of myocardial damage in AMI. **Methods and results:** Multiplate® is new whole blood aggregometry. Aggregation was triggered using arachidonic acid 0.5 mM or ADP 6.4 mcM. The study included 87 consecutive patients with AMI who underwent primary PCI. All patients received 300 mg of aspirin on admission and 100 mg/day thereafter. Clopidogrel was administred as a loading dose of 600 mg before and 75 mg/day following PCI. Blood samples were drawn before clopidogrel loading (day 1), and then daily during days 2 to 6. LDL cholesterol, triglycerides, blood glucose, hsCRP, NT-proBNP and homocisteine were determined on day 2, while CK and cTnT were determined on daily basis. Platelet responses were re-examined 30 days after AMI. Platelet responses to aspirin: day 1 = 69.2±40.4 U; day 2 =30.4±23.1; day 3 =32.1±22.8; day 4 =30.8±21.4 U; day 5 =36.2±28.7 U; day 6 =35.9±28,1 U; day 30 =36.6±35.2 U. The incidence of aspirin resistance: day 2 = 66.3%, day 3 = 65.2%, day 4 = 69.3%, day 5 = 40.5%, day 6 = 39.3%; day 30 = 26.2%. The aspirin resistant patients had significantly higher levels of hsCRP (44.8 vs. 21.6; p=0.02), NT-proBNP (3398.2 vs. 2378.6; p=0.016) and peak CPK (1798 vs. 1321, p=0.036). Platelet responses to clopidogrel: day 2 = 45.3±27.9 U, day 3 = 55.2±23.8 U; day 4 = 58.3±27.9 U; day 5 = 69.4±30.7 U; day 6 = 72.9±32.6 U; day 30 = 71.1±29.9 U. The incidence of clopidogrel resistance: day 2 = 37.1%, day 3 = 51.7%; day 4 = 55.7%; day 5 = 71.4%; day 6 = 67.9%; day 30 =73.3%. Patients with clopidogrel resistance had significantly higher hsCRP (33.1 vs. 24.7; p=0.04) and NT-proBNP level (3048.3 vs. 2048.3; p = 0.033). There was no difference in peak CPK or peak cTnT. **Conclusion:** platelet responsiveness to aspirin in acute phase of MI is more stable than to clopidogrel. Aggregation in ADP-test is more variable and remains high despite clopidogrel treatment because ADP stimulates not only P2Y12 receptor, but also other ADP-receptors. Patients with aspirin or clopidogrel resistance had significantly higher CRP and NT-proBNP. Inflammation stimulates platelets but higher CRP level in pts with aspirin resistance may also reflect its weaker antiinflammatory effect. NT-proBNP is an objective marker of heart failure that enhance platelet activation. Higher peak CPK level could represent higher risk for extensive myocardial damage in pts with aspirin resistance even after «successful» reperfusion.

P798

Discriminating value of carotid intima-media thickness in pre- and postmenopausal women with suspected coronary artery disease

A. Kablak-Ziembicka[1], T. Przewlocki[1], W. Tracz[1], P. Pieniazek[1], P. Musialek[1], A. Sokolowski[2], D. Rzeznik[1], R. Drwila[1]. [1]Department of Cardiac & Vascular Diseases, Institute of Cardiology, The John Paul II Hospital, Krakow, Poland [6]Department of Statistics, Cracow University of Economics, Krakow, Poland

Approximately 36–56% women referred to coronary angiography on the basis of clinical symptoms plus positive treadmill test have normal coronary arteries. This study aimed to evaluate discriminating value of carotid intima-media thickness (CIMT) - as an early marker of atherosclerosis presence - in CAD prediction in pre- and postmenopausal women referred to coronary angiography. **Methods.** Study formed 321 women referred to coronary angiography with symptoms suggesting CAD and a positive result of the treadmill test. CIMT was measured bilaterally in common, bifurcation and internal carotid artery, and expressed as the mean maximum value. Coronary angiography showed coronary stenosis ≥50% in 211 (65.7%) women, including 27 with regular menses (47.3±3.4y.) and 184 postmenopausal (65.8±7.2y.). Normal coronary arteries were found in 110 women: 17 (47.3±4.9y.) with regular menses and 93 postmenopausal (64.3±6.5y.). **Results.** The highest CIMT values were found in postmenopausal CAD women (1.360±0.32mm), as compared to premenopausal with CAD (1.178±0.36 mm, p=0.005), pre- (0.860±0.23mm, p<0.001) and postmenopausal (1.022±0.30mm, p<0.001) women without CAD. The relationship between CIMT and age (r=0.219, p<0.001), as well as CIMT and years passed since menses cessation (r=0.260, p<0.001) was found. Multivariate regression analysis showed that the number of years since menses cessation (p<0.001), hypertension (p=0.013), diabetes type 2 (p<0.001), smoking habit (p=0.001), history of ischemic stroke (p<0.001), previous myocardial infarction (p<0.001) and hiperlipidemia (p=0.082) were independently related to the CIMT value. A mean CIMT (p<0.001), hyperlipidemia (p=0.018) and myocardial infarction (p<0.001), but not menopause (p=0.407) itself or the number of years since menses cessation (p=0.366) were found to be independent CAD predictors. ROC calculated, the mean maximum CIMT cut-off values discriminating CAD likelihood were lower in premenopausal than in postmenopausal women (p<0.05). Among premenopausal women, the mean CIMT value exceeding 0.933mm was found to be an optimal cut-off; this allowed identifying CAD in 23 out of 27 women and excluding 12 out of 17 with normal coronary arteries (sensitivity 85.2%, a specificity 70.6%, PPV 82.1% and NPV 75.0%, OR 9.9, CI 1.75–60.5). In postmenopausal women the optimal mean CIMT cut-off value was 1.075 mm and this was related to 84.4% CAD likelihood (sensitivity 82.6%, specificity 69.9%, NPV 69.2%, OR 11.02, CI 5.91–20.8). **Conclusions.** CIMT is a strong CAD predictor both in pre- and postmenopausal women referred to coronary angiography with suspected CAD.

P799

Does Ambulatory Blood Pressure Predict Left Ventricular Diastolic Dysfunction Independent of Conventional Blood Pressure in Groups of African Descent?

E. Libhaber[1], C. Libhaber[2], O H Majane[3], MJ Maseko[3], MR Essop[1], P Sareli[3], GR Norton[3], AJ Woodiwiss[3]. [1]Department of Cardiology. CH Baragwanath Hospital. University of the Wiwatersrand [2]Deaprtment of Nuclear Medicine. University of the Witwatersrand [3]Cardiovascular Pathophysiology and Genomics Research Unit. School of Physiolofy. University of the Witwatersrand [4]Cardiovascular Pathophysiology and Genomics Research Unit. School of Physiolofy. University of the Witwatersrand [5]Department of Cardiology. CH Baragwanath Hospital. University of the Wiwatersrand [6]Cardiovascular Pathophysiology and Genomics Research Unit. School of Physiolofy. University of the Witwatersrand [7]Cardiovascular Pathophysiology and Genomics Research Unit. School of Physiolofy. University of the Witwatersrand [8]Cardiovascular Pathophysiology and Genomics Research Unit. School of Physiolofy. University of the Witwatersrand

Introduction. In contrast to other population groups, where ambulatory blood pressure (BP) refines the ability to predict left ventricular mass (LVM) over conventional BP, we have recently been unable to confirm this in urban developing communities of African descent. However, whether ambulatory BP predicts LV diastolic dysfunction, an independent predictor of cardiovascular events, beyond conventional BP, is uncertain. **Methods.** We explored whether ambulatory BP (SpaceLabs model 90207) predicts LV diastolic dysfunction beyond conventional BP in 290 randomly selected subjects of African descent living in Soweto (minimum age of 17 years). Left ventricular diastolic function (the ratio of early-to-late transmitral velocities [E/A]) and LVM were determined using echocardiography (single observer with a high level of intra-observer reproducibility). Conventional BP measurements (x5) were standardized and conducted by trained observers (non-physicians). **Results.** ~40% of the sample had hypertension and only ~22% were receiving treatment for hypertension. After adjustments for age, gender, waist circumference, heart rate, antihypertensive treatment, left ventricular mass index, the presence of diabetes mellitus and an HbA1c >6.1%; both 24-hour (r= -0.14, p<0.03) and daytime (r=-0.18, p<0.003) systolic BP were independently associated with E/A. However, after adjustments for conventional systolic BP and other confounders neither 24-hour (r= 0.01) nor daytime (r=-0.08) systolic BP were independently associated with E/A. Sensitivity analysis conducted in 222 untreated subjects produced essentially the same outcomes. We also confirmed that after adjustments for conventional systolic BP and other confounders, neither 24-hour (r=0.04) nor daytime (r=0.04) systolic BP were independently associated with LVM indexed to body surface area. **Conclusions.** Ambulatory BP does not predict either LV diastolic dysfunction or LVM index beyond conventional BP in a group of African ancestry. These data support the notion that ambulatory BP adds no additional value to conventional BP when predicting cardiac target organ changes.

P800

Atherosclerotic plaque instability may not be confined to coronary arteries only, but may also involve other arterial districts.

A. Drzewiecka-Gerber[1], A. Rybicka-Musialik[1], J. Krauze[1], J. Myszor[1], M. Trusz-Gluza[1]. [1]Silesian Medical University, 1st Department of Cardiology

Background: Complex stenosis of coronary vessels as well as unstable plaques are the part of widespread atherosclerotic instability and inflammation process. **Objective of the study:** We investigated possibile association between the incidence of unstable coronary artery disease and morphology of carotid artery wall. Correlation between serum C-reactive protein (CRP) level and incidence of carotid atherosclerotic process in patients with and without acute coronary syndrome was also assessed. **Methods and results:** Sixty-three consecutive patients, less then 60 years old, admitted to hospital with symptoms of acute coronary syndrome were included into prospective study. Angiography was performed in all patients. Unstable coronary disease was confirmed in 53 patients (CAD positive group) whereas in 10 patients coronary arteries were normal (CAD negative group).In all cases carotid ultrasaound was performed before discharge, with evaluation of carotid artery wall morfology : intima-media thickness (IMT), presence of plaques, as well as flow pattern evaluation. CRP levels were obtained in all patients. We found significant difference concerning left and right common carotid artery IMT(LIMT and RIMT) between CAD positive and negative group (1,0mm±0,3 versus 0,7mm±0,2 ;p=0.006 and 0,9mm±0,3 versus 0,7mm±0,2; p=0.008), respectively (table 1). Athero-

sclerotic plaques were found only in CAD positive group (mean number of plaques was 3±1 in all visualized carotid arteries. CRP levels were significantly higher in CAD positive group (18,3±18,8 versus 05,0±0,2; p=0.0003; table 2). Conclusions: Patients with more advanced atherosclerotic process in carotid region are more likely to have acute coronary event than patients with smooth carotid vessels. Higher CRP levels correlate well with coronary plaque unstability as well as with carotid wall atherosclerosis.

TABLE 1

Mean value±SD	LIMT(mm)	RIMT(mm)	plaques
CAD positive	1,0±0,3	0,9±0,3	3±1
CAD negative	0,7±0,2	0,7±0,2	0
P	0.006	0.008	

TABLE 2

mg/l	CRP mean value ±SD	mediana	Minimal value	Maximal value
CAD positive	18,36±18,80	13,00	3,90	113,70
CADnegative	5,02±0,23	4,70	1,80	9,00
p	0.0003			

P802

Late gadolinium enhancement predicts all cause mortality in patients with heart failure and systolic dysfunction of uncertain etiology

M Nadal[1], A Valle[1], J Estornell[2], C Soriano[1], N Martinez[3], V Jacas[1], A Laynez[1], M Corbi[1], R Paya[1], F Ridocci-Soriano[1]. *[1]Servicio Cardiologia.Consorcio Hospital General Universitari Valencia [2]Unidad de TC y RNM ERESA. Consorcio HGUV [3]Departamento Estadistica e Investigación Operativa Aplicadas y Calidad. Escuela Técnica Superior Ingeniería del Diseño. Universidad Politecnica Valencia*

Introduction and aims. The identification of prognostic markers in patients with heart failure of both ischemic and non ischemic etiology is an increasing need in the era of defibrillator and resynchronization therapies. There are few studies validating the prognostic value of the ischaemic pattern of Late gadolinium enhancement (LGE) cardiovascular magnetic resonance (CRM), and neither of them in patients with low probability of coronary artery disease. Our aim was to assess if LGE predicts all cause mortality in patients with symptomatic heart failure and systolic dysfunction of uncertain etiology. **Methods.** 160 consecutive patients with symptomatic heart failure and systolic dysfunction without prior myocardial infarction, Q waves on the ECG, or clinical date suggesting underlying coronary artery disease, were classified into two groups attending to the presence or absence of an ischaemic pattern of LGE, and were followed prospectively during 618 days (28–2091). The primary endpoint was all cause mortality. **Results.** 27 patients died during the follow-up (16.9%), 15 of them presenting LGE. The presence of an ischaemic pattern of LGE was associated to a significantly higher mortlity rate (31.3% of patients with LGE died during the follow-up, in front of 10.7% of those without LGE; p:0.003), and its presence was an independent predictor of all cause mortality (LR 9.36, p:0.002), with an adjusted HR 2.653, IC 95%, 1.118–6.296. **Conclusions**. In patients with heart failure and systolic dysfunction of uncertain etiology, the ischaemic pattern of LGE is an independent predictor of all cause mortality, offering an additional prognostic value to obtained exclusively by clinical, ecocardiographic or angiographic data.

P803

Corelation of Hyponatremia with short term (30 days) mortality among the patients of acute ST elevation Myocardial Infarction.

Y. Varma[1], B.S. Yadav, T. Rajarajan, G. Singh, R. Gupta, R.K. Shrivastava, V.K. Sharma , R.S. Meena, T.N. Dube, R.K. Jain. *[1]Gandhi Medical College,Bhopal, India [2]Gandhi Medical College,Bhopal, India [3]Gandhi Medical College,Bhopal, India [4]Gandhi Medical College,Bhopal, India [5]Gandhi Medical College,Bhopal, India [6]Gandhi Medical College,Bhopal, India [7]Gandhi Medical College,Bhopal, India [8]Gandhi Medical College,Bhopal, India [9]Gandhi Medical College,Bhopal, India [10]Gandhi Medical College,Bhopal, India*

Objectives: To know the prognostic significance of Hyponatremia in acute ST elevation Myocardial Infarction(acute STEMI) **Methods:** 74 eligible patients of acute STEMI were studied. Routine investigations and serum Sodium(Na) was assessed on admission, 24, 48 and 72 hours after admission. SerumNa levels were correlated for blood glucose levels above 100mg/dl. Electrocardiogram and Echocardiogram were performed as per accepted protocols. Patients were observed for rhythm abnormalities and left ventricular dysfunction(LVD) during hospitalization and followed up for 30 days for mortality. **Results:** Patients were divided into two groups. Group-A(n=36)who developed hyponatremia (serumNa<135mEq/L) during first 24 hours. Remaining patients(n=38) were in group –B. Factors affecting short term mortality were studied viz. age, diabetes mellitus, hypertension, thrombolysis, size and site of STEMI, LVD, previous myocardial dysfunction and smoking. Group A had 38.8% mortality as compared to 13.1% (p.0.05) in group B. Mortality was higher in patients who developed hyponatremia within 24 hours(41.6%). Intraventricular conduction defects and supraventricular tachyarrythmias were more common in Group-A(16.6% and 5.5%) than in group-B(5.2% and 2.63%). LVD developed in 36.6% in group A as against 16% in group B. Mortality increased with severity of hyponatremia(42.1%) when serum Na was <130mEq/L. **Conclusion:** Only limited data exists regarding the prognostic significance of hyponatemia in acute STEMI. Hyponatremia can be considered as an important pre disposing factor for short term mortality in acute STEMI

P804

Late gadolinium enhancement cardiovascular magnetic resonance is useful to diferenciate left ventricular systolic dysfunction related to coronary artery disease from dilated cardiomyopathy in patients with acute new onset congestive heart failure.

A. Valle[1], M Nadal[1], J Estornell[2], C Soriano[1], N Martinez[3], A Trigo[1], R Romaguera[1], J Perez[1], R Paya[1], F Ridocci-Soriano[1]. *[1]Servicio Cardiología. Consorcio Hospital General Universitari de Valencia [2]Unidad De TAC y RNM. CHGUV [3]Departamento Estadistica e Investigación Operativa Aplicadas y Calidad. Escuela Técnica Superior Ingeniería del Diseño.Universidad Politecnica Valencia*

Background: In patients with chronic heart failure, late gadolinium enhancement cardiovascular magnetic resonance (LGE-CMR) is capable to diferenciate left ventricular systolic dysfunction (LVSD) related to coronary artery disease (CAD) from dilated cardiomyopathy. **Objective:** We evaluated the feasibility of using LGE-CMR to distinguish LVSD related or not to CAD in patients with acute new onset heart failure (AHF) without clinical suspicion of CAD as the underlying cause. **Methods:** One hundred consecutive patients admitted with AHF and EF<40% without clinical or ECG data that suggested CAD underwent both CRM and coronary angiography. **Results:** Twenty two patients (22%) had angiographically proven CAD (≥70% stenosis of a major epicardial vessel (angio (+) group), and 80(80%) had unobstructed coronary arteries (angio (-) group). Eighteen patients in the angio (+) group (18 of 22, 81.8%) showed subendocardial and/or transmural enhancement, whereas only 5 of 80(6.2%) in the angio (-) group showed it (p< 0.001). We found an overall sensitivity of 86%, specificity of 92%, with positive and negative predictive values of 78.2% and 96% respectively. Receiver-operating characteristic (ROC) areas under the curve (AUCs) for LGE was 0.91 with an efficiency of 92.7% in determining the presence of obstructive CAD in our patients. **Conclusions:** In patients with AHF and LVSD without clinical suspicion of CAD, LGE-CMR is an excellent tool to classifying patients in relation to presence or absence of underliyng CAD and seems to be an alternative to routine diagnostic coronary angiography in this setting

P805

The Diabetes-Cardiovascular Risk Paradox: Results from a Finnish Population-Based Prospective Study

N. C. Barengo[1], S. Katoh[2], V. Moltchanov[3], N. Tajima[2], J. O. Tuomilehto[1]. *[1]Department of Public Health, University of Helsinki, Helsinki, Finland [2]Division of Diabetes and Endocrinology, Department of Internal Medicine, Jikei University School of Medicine, Tokyo, Japan [3]Diabetes and Genetic Epidemiology Unit, Department of Epidemiology and Health Promotion, National Public Health Institute, Helsinki, Finland*

Aim: The aim of this study was to assess whether there were changes in CHD event rates, respectively CHD mortality rates among diabetic and non-diabetic subjects of two large study cohorts during a follow-up time of 10 years. **Methods:** Four population surveys were carried out in 1972, 1977, 1982 and 1987 in randomly selected independent cohorts in Finland. For the analyses the 1972 and 1977 cohorts were combined (cohort 1) and similarly also the 1982 and 1987 cohorts (cohort 2). The patients developing incident diabetes during the follow-up or having diabetes at baseline were derived from the national drug reimbursement records of the Social Insurance Institution and the National Hospital Discharge Register by computer-based record linkage. Mortality and non-fatal event data of the first acute CHD were obtained from death records of the Statistics Finland and from the national hospital discharge registry. **Results:** A total of 16779 men and 18235 women were followed up for 10 years. No statistical significant changes in the risk of the first CHD event were observed in either male (Rate ratio (RR) 1.1; 95% confidence interval (CI): 0.7–1.7) or female (RR 0.8, 95% CI: 0.8–1.3) patients with diabetes at baseline. The ten-year CHD mortality rate ratio between cohort 1 and cohort 2 did not significantly change and was in men 0.8 (95% CI: 0.4–2.0) and in women 0.8 (95% CI 0.3–2.0), respectively. In people without diabetes at baseline, however, the mortality rate ratio between these two cohorts statistically decreased (Men, RR 0.6; 95% CI: 0.5–0.8, respectively women RR: 0.5; 95% CI: 0.3–0.8). In men and women without diabetes at baseline who developed diabetes during follow-up, the relative risk of first acute CHD event increased from 2.13 to 3.38 (men) and from 4.07 to 7.19 (women) per 1000 person-years, respectively, between the two cohorts. The relative risk of CHD mortality increased in individuals who developed incident diabetes compared with those who remained free of diabetes from 0.74 in the cohort 1 to 2.59 in the cohort 2 in men and in women from 1.29 to 3.67, respectively. The relative change in the CHD event rate ratio (cohort 2/cohort 1) in people without incident diabetes during follow-up was 0.7 (95% CI: 0.7–0.8) in men and 0.7 (95% CI: 0.6–0.8) in women. Furthermore, mortality from the first acute CHD event decreased significantly in both men (RR: 0.6; 95% CI: 0.5–0.8) and women (RR: 0.5; 95% CI: 0.3–0.8) without diabetes. **Conclusions:** Special attention should be given to prevent the onset of diabetes in the population and to intensify management of patients with type 1 or/and type 2 diabetes.

P806

Early Surgical Management of Anatomically Complete Vascular Rings

T. Tsai[1], F. Chen[2], J. Yu[3]. *[1]Division of Cardiovascular Surgery, Department of Surgery, Chung Shan Medical University Hospital, Taichung, Taiwan [2]Division of Pediatric Cardiology, Department of Pediatrics, Chung Shan Medical University Hospital, Taichung, Taiwan [3]Division of Cardiovascular Surgery, Department of Surgery, Chung Shan Medical University Hospital, Taichung, Taiwan*

Background Adults with potentially life-threatening congenital vascular anomalies due to tracheoesophageal compression and anueyrsmal rupture are often misdiagnosed as having asthma or recurrent bronchopulmonary infection. However, the early recognition and treatment of these anomalies can help to achieve a low mortality rate. Early surgical treatment critically

depends on early diagnosis, which still presents a challenge to doctors as it depends on an index of high clinical suspicion. We showed two-dimensional echocardiography (2DE) to be an effective tool for heart and great vessel examinations as it has a higher success rate and eliminates human error to a large extent. **Purposes** We explored the use of 2DE for the early diagnosis of anatomically complete vascular rings (ACVR) and its use as a tool to help plan a surgical strategy by determining possible surgical complications. **Methods** Two-dimensional echocardiography was used to diagnose anatomically complete vascular rings (including double aortic arch and right aortic arch with left ligamentum arteriosum) in 96 patients. They underwent a barium esophagogram spiral CT and/ or MRI to confirm the existence of the vascular rings. Demographics, historical objectives and the results of physical examinations were all taken into account when performing the clinical diagnosis, as opposed to the conventional methods that are used when diagnosing ACVR. Those patients with overt clinical symptoms of tracheoesophageal compression were then earmarked for surgical treatment. **Results** Among the patients diagnosed with ACVR, 64 received surgical treatment after ACVR was confirmed. Right aortic arch (RAA) with Kommerell's divertiuculum (KD) with left ligamentum arteriosum was found to be the most common type of ACVR (80.3% of cases). The diagnostic accuracy of 2DE was higher than conventional methods that depend on the clinical suspicion of symptoms of tracheoesophagal compression. Two-dimensional echocardiography was found to have a 100% overall sensitivity and a 100% specificity with regard to its ability to diagnose ACVR. Recurrent bronchopulmonary infections and asthmatic cough were the dominant symptoms of tracheal compression and all of these patients who underwent surgical treatment were well without morbidity and mortality. **Conclusions** Two-dimensional echocardiography is an effective primary diagnostic method with a high sensitivity and specificity. Early surgical management of ACVR is safe and easily achieved.

P807

MICROALBUMINURIA- CARDIOMETABOLIC SYNDROME; INDEPENDENT MARKER OF CARDIOVASCULAR RISK

V. Raos[1], T. Katic[1], O. Jaksic[2], B. Vitunjski-Englert[3], M. Raguz[1], J. Sikic-Vagic[1], M. Bergovec[1]. *[1]Dubrava University Hospital, Department of Cardiovascular Desease [3]Dubrava University Hospital, Department of Hematology [4]Dubrava University Hospital, Department of Laboratory Diagnostics*

Purpose: It has been known that microalbuminuria (MA) is a strong and independent indicator of increased cardiovascular risk among non diabetic and diabetic patients. Therefore, microalbuminuria can be used for stratification of cardiovascular disease risk. Increased level of inflammatory markers, endothelial disfunction, increased oxidative stress, increased activity of RAAS has been proven in patients with MA. Therefore, complex clinical syndrome has been established- cardiomethabolic syndrome, which includes many cardiovascular disease risk factors; central obesity, insulin resistency, hypertension, dislipidaemia, hypercoagulability, microalbuminuria. Purpose of our study was to determine the presence of microalbuminuria in CHF patients regardless of diabetes mellitus and to determine correlation of microalbuminuria with severity of CHF. **Methods:** Our study involved 83 patients (female 41, male- 42, median age 72 yrs, range from 48–90 yrs) treated for congestive heart failure (CHF). Patients were divided into two groups; group A: CHF patients non diabetic, group B: CHF patients with diabetes mellitus. All patients were also divided according to NYHA classification (groups I-IV). First morning urine samples were taken from all patients immediately after hospitalization. Microalbuminuria was defined as a urinary albumin to creatinine ratio (ACR) of 30–300 mg/g creatinine. **Results:** In total population of examined CHF patients, 54 (65.1%) had normoalbuminuria, 22 (26.5%) had microalbuminuria, and 7 (8.4 %) had proteinuria. We found no statistically significant difference in prevalence of microalbuminuria between groups A and B, although there is a trend towards greater prevalence of microalbuminuria and proteinuria in group of CHF patients with diabetes mellitus.Results also pointed that there is statistically significant relation between presence of microalbuminuria and severity of CHF defined by NYHA classification. Percentage of patients with MA increased distinctively with NYHA class. There was no statistically significant relation between left ventricle ejection fraction (LVEF) and MA. The correlation between microalbuminuria and lipidogram showed that total cholesterol and LDLc were higher in patients with normoalbuminuria, on accounts of non-diabetic patients ($p < 0.0001$). **Conclusion:** Our results pointed that there was no statistically significant difference in prevalence of microalbuminuria in group of CHF patients with or without diabetes mellitus, although there is a trend of greater prevalence of microalbuminuria and proteinuria in diabetes mellitus group. Results also showed that there is a strong relation between presence of microalbuminuria and severity of congestive heart failure defined by NYHA classification. Our results suggest that microalbuminuria is an valid independent marker of cardiovascular disease and a strong predictor of cardiovascular morbidity, regardless of presence of diabetes mellitus.

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AUTOLOGOUS INTRAMYOCARDIAL TRANSPLANTATION OF BONE MARROW MONONUCLEAR STEM-CELLS FOR DILATED CARDIOMYOPATHY – TECNIQUE AND EARLY RESULTS

R. Kalil[1], D. Ott[1], R. Sant'Anna[1], E. Dias[1], J. Fracasso[1], A. Cañedo[1], N. Nardi[2], J. Sant'Anna[1], P. Prates[1], I. Nesralla[1]. *[1]Instituto de Cardiologia do Rio Grande do Sul / FUC [2]Departamento de Genética da UFRGS*

Objectives: Bone marrow mononuclear cells (BMMC) transplantation is subject of research for treating ischemic heart disease, however the effect in non-ischemic dilated cardiomyopathy (NIDC) is less well investigated. This study describes a technique of BMMC transplantation utilizing mini-thoracotomy and evaluate results up to one year after the procedure. **Design:** Series of nine cases to evaluate the security and viability of the procedure. **Methods:** From December 2004 to June 2006, nine patients with NIDC, functional class III/IV and left ventricular ejection fraction (LVEF) $<$ 35% have been included. Ischemic heart disease was excluded by cineangiocoronariograms. Echocardiogram (Eco) and nuclear magnetic resonance (NMR) were performed to assess left ventricular function. BMMC, in an average of 9.6 $\pm$ 2.6 x 10 7 cells (CD 34+ = 1.5 $\pm$ 0.7%), were injected though a thoracotomy of 5 cm in the 5th left intercostal space, in 20 spots of the ventricular free wall, utilizing a Butterfly 21F needle(total volume=5mL). **Results:** There were no major complications. A patient needed two epicardial stitches for bleeding control and another needed lidocaine for persistent arrhythmia during heart contact. The pre-operative x 2 x 4 x 8 x 12 months of follow-up results for the first 6 patients were: functional class IV-2, III-4 to I-5, II-1 to I-3, II-3 to I-2, II-3 and I-2, II-3 pt. QOL score(Minnesota)= 64$\pm$7.6 x 30.7$\pm$22 x 31.5$\pm$22.9 x 29.7$\pm$22.2 x 33.8$\pm$21 points ($p<0.01$). Eco: LVEF = 25.9$\pm$8.2 x 32.9$\pm$10.4 x 29.4$\pm$7.2 x 25.1$\pm$7.9 x 25.4$\pm$6.8% ($p=0.023$), meaning a relative increase of about 30% in LVEF at the second p.o. month, declining thereafter; % circumferential fiber shortening = 12.6$\pm$4.4 x 16.4$\pm$5.4 x 14.3$\pm$3.7 x 12.1$\pm$4.0 x 12.2$\pm$3.4% ($p=0.021$), meaning 30% increase at the second p.o. month. NMR evaluation of LV performance showed slight, non-significant variation. The improvement of cardiac function, when occurred, was global, not restricted to the free left ventricular wall. **Conclusion:** Intramyocardial transplantation of BMMC in dilated cardiomyopathy is feasible and safe. There were early improvements on symptoms, quality of life and LV performance by echo. Medium-term evaluation, revealed regression of LV function near to preoperative levels, although maintaining improved functional class and quality of life. The mechanism of action is unclear.

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EFFECTS OF HYDROXYMETHYLGLUTARYL COENZYME A REDUCTASE INHIBITORS IN REDUCTION OF INFLAMMATORY RESPONSE TO CARDIOPULMONARY BYPASS

G. Teixeira[1], R. Kalil[1], P. Prates[1], J. Sant'Anna[1], L. Pellanda[1], A. Neto[1], I. Nesralla[1]. *[1]Instituto de Cardiologia do RS / FUC*

Background/Aim - The use of HMG-CoA reductase inhibitors (statins) has been documented in reducing LDL levels. The effect of statins in inflammatory function in under evaluation in several clinical conditions. This study was designed to analyse the effects of pravastatin on inflammatory response to cardiopulmonary bypass (CPB). **Methods -** In a prospective, randomized study, 20 patients undergoing elective coronary artery bypass grafting under CPB were investigated. Ten patients received 80 mg p.o. of pravastatin 36 and 12 h before surgery (group P) and 10 were not treated (group C). Previous to and at variable time after CPB plasma levels of C- reactive protein (24hs) and interleukin – 8 (6h) were evaluated. Postoperative blood loss was measured. Values were expressed as median (minimal and maximal). **Results -** C–reactive protein before CPB was 9.9 (7.0 – 15.6) in group P and 5.0 (5.0 – 9.3) in group C mg/dL ($p=0.015$). Despite previous elevation, group P presented lower levels than group C 24h after CPB; respectively 62 (38.7–73.6) and 109 (104–112) mg/dL ($p=0.004$). Interleukin - 8 increased in group C as compared to group P 6h after CPB: values were 144 (122.5–220) and 600 (380–730) pg/mL respectively ($p=0.017$). Postoperative blood loss was significantly lower in group P than group C: 600 (395–835) vs 990 (800–1070) mL ($p=0.019$) **Conclusions –** Our data suggest that short term use of pravastatin reduces systemic inflammatory response of CPB. Pravastatin reduced mediastinal postoperative bleeding, probable as a seccondary effect.

P810

Correlation of femoral atherosclerosis and severity of CAD quantified by Gensini score

M. Vrkic Kirhmajer[1], LJ. Banfic[1], M. Vojković[1], M. Strozzi[1], J. Bulum[1], K. Putarek[1], T. Simoncek[1]. *[1]University Hospital Center Zagreb*

Background: Intima media thickness of the carotid arteries is well established marker of coronary atherosclerosis. Extension of coronary artery disease quantified by use of Gensini score is considered as a valuable tool in coronary artery disease evaluation. **The aim:** of this prospective study was to find the relations between arterial wall thickness of common femoral artery, the diameter of common femoral artery and the severity of coronary atherosclerosis expressed by Gensini score. **The methods:** prospective study was performed on the group of patients suffering from angina pectoris who were submitted to femoral artery duplex study (investigation was performed on general Electrics GE Vivid 7) after coronary angiography. The severity of coronary artery disease was quantified and expresed as Gensini score. **Results:** Common femoral artery diameter (CFA= 7.27 +/- 1.39 mm), arterial wall thickness (AWT= 1.74+/-0.64 mm) and the severity of coronary artery disease expressed as Gensini score (40.23+/- 44.9) were evaluated in the group of 310 patints with angina pectoris (208 males, mean age 59.9+/-10.7, and 102 females 63.43+/- 9.08 years). There was a positive correlation between Gensini index and AWT for whole group (Spearmans rho value 0.128 was significant at 0.05 level). Gensini score also correlates (Spearmans rho value significance at 0.05 level) with patient s age and documented arterial hypertension. Arterial wall thickness correlates (rho value significant at 0.01 levels) with common femoral artery diameter, and body mass index (p significance at 0.005 level). Common femoral artery diameter did not correlate with the severity of coronary artery disease. **Conclusions:** Severity of coronary atheroaclerosis as part of the atherosclerotic process is connected to the atherosclerothic changes of peripheral arteriaes- expressed as femoral artery wall thickness. A significant positive correlation between coronary atherosclerosis expressed as Gensini score and peripheral arteries - femoral artery wall thiceness was confirmed. Femoral artery wall thickeness could be viewed as novel cardiovascular risk marker.

P811

LEFT VENTRICULAR TORSION DYNAMICS IN PATIENTS WITH FABRY'S DISEASE

Y. Zocalo[1], E. Guevara[2], D. Bia[1], A. Fernandez[2], J. Casabe[2], J. Politei[2], G. Cabrera[2], R. Armentano[1–3]. [1]*Physiology Department, School of Medicine, Universidad de la República, Montevideo, Uruguay* [2]*Instituto de Cardiología y Cirugía Cardiovascular, Fundación Favaloro, Buenos Aires, Argentina* [3]*FICEN, Universidad Favaloro, Buenos Aires, Argentina*

Background: Fabry's disease is an X-linked recessive genetic disorder of glycosphingolipid metabolism caused by deficiency of the lysosomal enzyme α-galactosidase. The disease is characterized by the progressive intracellular accumulation of glycosphingolipids that leads to an impairment of tissues and organs function. Cardiac manifestations of the disease involve hypertrophy, alterations of the conduction system, valves and coronary vessels. Early diagnosis could allow an adequate treatment with stabilization and/or reversal of some cardiovascular manifestations. The left ventricle (LV) torsion is a fundamental feature of LV biomechanics that allows the development of high pressure levels, at the time it reduces the stress-strain gradient across the LV wall and the energetic cost of the ventricle's mechanical activity. The torsional motion depends on the helical arrangement of the myocardial fibers; and changes in different pathological situations, being recognized as a sensitive indicator of the cardiac function. It remains to be established if there are changes in torsion dynamics associated with the Fabry's disease. **Aim:** To characterize, using speckle tracking echography, the torsion dynamics of patients with Fabry's disease, and to determine the main differences in torsion between FD patients and age-matched healthy individuals. **Methods:** Five patients with Fabry's disease (FD group; Age: 26$\pm$7 years) and without cardiovascular risk factors, and six age-matched healthy volunteers (control group, C; Age: 23$\pm$6 years) were included. A standard echocardiographic examination was performed in order to obtain basic structural and functional information (Vivid 7, GE Medical Systems, Milwaukee, Wisconsin). Additionally, 2D-mode images of apical and basal short-axis planes were obtained with a M3S probe, in order to quantify the ventricle rotation (VR) in the basal and apical levels (speckle-tracking echography, STE; EchoPAC 2DS-software package, version 3.3, GE Medical Systems). The LV systolic and diastolic torsion (VRapical–VRbasal) was characterized in the time domain. **Results:** The levels of the structural and functional echocardiographic parameters of the FD patients were within the normal range. There were no differences in structure nor in the LV function evaluated by standard echocardiography between the FD and the C group. The STE allowed characterizing the LV rotation and torsion in all the individuals. The temporal profile of the systolic and diastolic LV torsion showed differences between FD and C individuals (Figure). The LV mean torsion was lesser in FD than in C, both for the systolic (2.6$\pm$1.8° vs. 6.3$\pm$1.9°, $p<0.05$) and the diastolic phase (1.6$\pm$1.4° vs. 4.3$\pm$1.9°, $p<0.05$). **Conclusion:** The LV torsion level was lesser in patients with Fabry's disease than in age-matched healthy individuals. Changes in LV torsion could represent an early manifestation of the cardiovascular function impairment in patients with Fabry's disease. Figure: Torsion temporal profile in FD and C groups. For better visualization only mean value, plus or minus the standard deviation was plotted.*$p<0.05$ respect to the FD group.

P812

The change in fractional flow reserve can predict lesion severity and long term prognosis

SA Kocaman[1], A Sahinarslan[1], T Timurkaynak[1]. [1]*Gazi University Hospital, Department of Cardiology, Ankara,Turkey*

Introduction: Fractional flow reserve (FFR) is a method, which is used to identify the angiographically intermediate lesions requiring revascularization. However, the correct interpretation of the lesion severity in cases with a FFR value between 0.75–0.80 (gray zone) is controversial. Delta (Δ) FFR, the difference between FFR in baseline conditions (basal FFR) and after adenosine administration (minFFR), may be helpful in these cases for the identification of the lesion severity. Therefore we aimed to investigate the value of Δ FFR in determination of lesions causing significant ischemia and its predictive power for long term clinical prognosis. **Method:** We enrolled 123 consecutive patients (103 male, 20 female;mean age: 56$\pm$10) with an intermediate lesion (40–70% stenosis) at LAD in this study. FFR was applied to all patients. The patients were divided into three groups according to FFR results (group I: FFR$>$80%, n=71; group II: FFR between 75%–80%, n=28; group III: FFR$<$75%, n=24). ΔFFR was calculated by the formula: Δ FFR = (basal FFR – minFFR) x10^2. We followed the patients for a mean duration of 36 $\pm$17 months for major adverse cardiac events (MACE). **Results:** The baseline characteristics and the angiographic features of the patients were similar. The sensitivity and the specificity of Δ FFR to detect the lesion severity were evaluated by ROC analysis. The area under ROC curve was found as 0.873 ($p<0.001$, 95% CI: 0.788–0.958). When we compared the predictability of MACE by minFFR and Δ FFR, we did not find any difference between the patients with minFFR$<$0, 75 and the ones with minFFR$>$0,75(29% vs 34%, p=0,054). However,when we evaluated the patients with minFFR$<$0,80; MACE was significantly different (73% vs 44% vs 11% respectively, p=0,003) among the groups which were determined according to Δ FFR (group I: Δ FFR$<$10, n=11; group II: Δ FFR 10–15, n=23; group III: Δ FFR$>$15, n=18). **Conclusion:** Delta FFR showed the severity of the lesion with a high specificity especially in the patients who are in the gray zone and related with the long term clinical prognosis. This finding may be helpful for interpretation of lesion severity and revascularization decision. Besides, the cut-off values of Δ FFR can be predictive for the long term clinical prognosis independently from lesion severity.

P813

Prognostic value of left ventricular diastolic disfunction for adverse cardiac events

A. Berger-Kucza[1], K Wita, M Turski, M Trusz-Gluza.

Knowledge about long term prognosis in patients with acute myocardial infarction is not sufficient. The aim of the study was to assess prognostic value of left ventricular diastolic disfunction at admission to hospital as a predictor for adverse cardiac events (MACE: death, reinfarction, rehospitalisation for heart failure). **Methods:** 115 consecutive patients (75% male, aged 56,9 $\pm$ 10 years) with their first, only anterior MI treated with primary PCI $<$ 12 hours from symptom onset were examined. Based on typical mitral inflow and right upper pulmonary vein inflow the study group was divided into: group A(27 patients) without diastolic dysfunction(DD) E/A ratio 1–2, DT 150–220ms, group B(25 patients) with DD relaxation E/A ratio 1–2, DT$>$220ms, group C(25 patients)with DD pseudonormal pattern E/A 1–2, DT 150–220ms, S/D$<$1, Ar$>$35cm/s and group D with DD restriction E/A$>$2, DT $<$150ms. **Results:** LVEF 40,8 $\pm$6,1 %, LVEDV105,8 $\pm$31ml, WMSI 1,41$\pm$0,2. Demographics, CHD risk factors and pharmacotherapy were comparable in all groups. In the study group the EF was 40,8% and only in group D was statistically lower than in group A($p<0,05$): 37,1% vs 41,8%. During 2 year follow up there were 22 MACE, what was 11%, 16%, 12%, 31,5% patients in group A, B, C, D. The Wilcoxon and long rang tests show that only restrictive mitral inflow in acute MI is a good predictor for adverse cardiac events in long term prognosis($p<0,00001$). **Conclusions:** Diastolic disfunction in patients with acute anterior myocardial infarction treated with primary PCI, particularly in its most severe form, is accurate predictor for adverse cardiac event in long term follow-up.

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Determinants of left early and late ventricular remodeling in patients with acute MI treated with primary PCI

A. Berger-Kucza[1], W Wróbel, M Nowak, M Trusz-Gluza.

Despite successful restoration of blood flow in infarct related artery LV remodeling process takes place. The time of remodeling is not well determined. The aim of the study was to assess timing of remodeling and factors influencing this process. **Methods:** 114 consecutive patients (86 male's, aged 56,9 $\pm$ 11 years) with their first only anterior MI treated with primary PCI $<$ 12 hours from symptom onset were examined. Echocardiography was performed on 2, 30 and 180 day for LVEDV, LVESV, LVEF and WMSI assessment. NT-proBNP was determined at discharge and day 30. On the day 2 myocardial contrast echocardiography was performed to determine regional perfusion score index (RPSI). Remodeling was defined as at least 20% LVEDV increase at first 30 days (early remodeling), between day 30 and 180 (late remodeling) **Results:** Baseline characteristics were: LVEF 0 40,8 $\pm$ 7,3%, LVEDV0 105,7 $\pm$31ml, LVESV 0 62,4$\pm$22 ml, WMSI 0 1,4$\pm$0,2, discharge NT proBNP 1488 ng/ml. At 30 day follow up remodeling was diagnosed in 24 patients (LVEDV increase from 106,9$\pm$29,6ml to 136,7$\pm$31ml, $p<0,05$). Late remodeling was observed in 13 patients (group A). Remaining alive 75 patients formed group B. Demographics, risk factors and pharmacotherapy were comparable in both groups. The differentiating parameters are presented in table. Multivariate logistic regression analysis revealed that only lower RPSI (OR 0,0223 CI$\pm$0,004- 0,147, $p<0,0001$) and higher NT-proBNP (OR 1,0007, CL$\pm$1,0002- 1,0012, $p<0,005$) were significantly influencing the early remodeling. Multivariate logistic regression analysis revealed that only lower baseline LVEF (OR 0,002, CI$\pm$ 0,821–0,956, $p<0,003$) and lower RPSI (OR 0,0223, CI$\pm$0,0043–0,1196, $p<0,001$) were significantly influencing the late remodeling Conclusions: Remodeling after acute MI is chronic process throughout several months. Late remodeling is determined by lower LVEF and lower RPSI

P815

BIOFIELD (Aura) scanning for preventive and primary investigation of Heart patients and

S. Vaidya[1,2], V Marathe[1,2]. [1]*SHARP HEALTH CARE -PUNE-INDIA* [2]*INSTITUTE OF INTIGRATIVE MEDICINE-PUNE-INDIA* [3]*SUPRA RESEARCH FOUNDATION -PUNE-INDIA* [4]*SAI MEDICAL MEDICAL FOUNDATION -AH,MEDNAGAR-INDIA* [5]*RURAL MEDICAL COLLEGE -LONI-INDIA*

The human body functioning greatly depends on the dynamic role of the Biofield (or Aura), perception and the mind state of the individual. Medical science has accepted the vital role of the 'Mind'. This 'Mind' energy can be perceived with Bio Energy scanners. Our study of this Bio-field relates closely to the description of the Energy Field stated in Vedic texts (Indian System of Medicine). The state of 'ease' or 'dis-ease' is visible in these 'Aura scans'. A study of the scans has enabled us to identify weaknesses and futuristic health problems. Scans have been used to diagnose health on a preventive basis of high risk heart patients. Aura Scans have also assisted in investigation of secondary indicators leading to complications in disease. Patients identified with hart disease are taken under the Rehabilitation and Preventive Health management programs as specified in SHARP (Sanjeevan Heart ailment Rehabilitation Program). These patients have shown great improvements with dis-ease identified and treated as per Aura scan specifications. Disease manifestation takes place over a period of time. "Dis-ease" in metabolic processes can be identified as "dis-eases" in energy harmony of body functioning. These dis-eases in Bio-energy field manifest as ailments and diseases in the body at a later date. Once identified, detailed investigations have pointed to the presence of pre clinical stage of Heart Disease. Complications identified with Aura scans are malfunctioning livers leading to cholesterol increase, kidney meridian problems leading to Hypertension, "heart - chakra" abnormalities that have been identified as below normal myocardial perfusion are some of the results of the scans. Also, often the metabolic investigations and/or invasive investigations do not identify the problem in typical symptoms of Heart Disease. In such cases, disharmonies identified in the Energy Field scans have been re-harmonized with Biofield balancing techniques and symptoms of the patient relieved. We present scans of the effects of stressors like Mobiles, enclosed environments, emotional stress, physical strain that influence the prognosis of Heart Disease; which cannot be identified with Modern allopathic investigations. Aura scanning has enabled preventive heart functioning investigations on a more holistic, non-invasive method.

P816

Thrombus aspiration for microvascular protection in patients with acute MI undergoing early primary PCI.

A. Berger-Kucza[1], M Lelek, K Wita, M Trusz-Gluza.

Despite optimal infarct related artery patency after primary PCI in patients with acute MI microvascular integrity is not preserved. One of the mechanisms of no-reflow phenomenon distal embolization. It is advocated that thrombaspiration during PCI protects distal vasculature from emboli and reduces myocardial dysfunction. The aim of the study was to assess perfusion with quantitative myocardial contrast echocardiography (QMCE) with and without use of thrombaspiration. **Methods:** The study enrolled 41 patients (aged 57,4 ± 11,76% male) with the first anterior MI undergoing successful early (<12 hours from symptom onset) PCI with TIMI 3 flowafter procedure. Al patients were treated with abciximab.. Thrombaspiration was performed in 22 patients (group I) and the remaining 18 patients were control (group II). At the discharge echocardiographic study to assess LVEF, WMSI, LVEDV, LVESV and QMCE analysis (Sonovue i.v. infusion 60ml/hour) for peak signal intensity (A), rate of signal intensity increase (β) and Axβ product- reflecting myocardial blood flow were performed. **Results:** the mean A was 7,13±3,14, β 0,54±0,36 and Axβ 4,28±3,58. Significant negative correlations between LVEDV, LVESV and A were found (Spearman r=-0,79, p<0,0001 i r=-0,69, p<0,001, respectively). The groups did not differ in demography, CAD risk factors, angiographic or echocardiographic indices (WMSI, LVEF). QMCE results are shown in table I. A β Axβ Group I 8,73±3,1 5,3±2,7 Group II 6,46±2,8 3,6±2,1 p p<0,005 p<0,005 **Conclusion:** Thrombus aspiration used at the time of PCI significantly improves contrast echocardiography indices of myocardial dysfunction.

P817

Impaired morning arterial distensibility adjustment in hypertensive patients

D. Bia[1], S. Lluberas[1], Y. Zocalo[1], M. Zabalza[1], R. Armentano[1–2]. [1]*Physiology Department, School of Medicine, Universidad de la República, Montevideo, Uruguay* [2]*FICEN, Universidad Favaloro, Buenos Aires, Argentina*

Background: The circadian rhythm, and specially the arterial pressure (AP) and heart rate (HR) increase in the first hours of the morning, has been associated with the higher incidence of cardiovascular events in that period. Recently, we demonstrated that in dipper subjects without cardiovascular risk factors (CRF) circadian reductions in the arterial distensibility (AD) were not associated to the circadian pattern of cardiovascular vulnerability, because AD is lower during the sleep (S) than in the wakefulness (W) period; decreases in the wakefulness-sleep transition (WST) and increases in the sleep-wakefulness transition (SWT). However, it remains to be established whether in dipper subjects with CRF the AD has a pattern similar to that of the subjects without CRF. **Aim:** To characterize potential changes in the circadian pattern of AD in subjects with untreated moderate arterial hypertension (AHT) **Methods:** Sixteen dipper subjects without CRF and twelve age-matched subjects with AHT underwent 24 hours ambulatory monitoring of AP, HR and AD. The AD was assessed by means of the calculation of the aorto-brachial pulse transit time. For all the variables the mean level for S (23:00–6:00 hours) and W (8:00–21:00 hours) and for the WST (20:00 vs. 2:00 hours) and SWT (6:00 vs. 10:00 hours) periods were quantified. Statistic: T-test and ANOVA. Threshold: p<0,05. **Results:** During both, S and W, the AD was lower in individuals with AHT than in the subjects individuals without CRF (p<0.05). In both groups AD decreased during the WST and increased during the SWT, but the changes in AD during the WST were smaller in subjects with AHT (p<0.05). Additionally, during the SWT the change in AD adjusted to the change in AP and HR, was smaller in subjects with AHT (p<0.05). **Conclusion:** The individuals with AHT and those without CRF showed a similar circadian pattern of AD, but the increase in AD during the morning (SWT) was smaller in the subjects with AHT. In individuals with AHT, the reduced capability to increase AD during the morning AP and HR surge might represent an additional increase of ventricular overload. In this context, in addition to the smaller levels of AD during S and W, disturbances in the morning capability to adjust AD could contribute to explain the increase in cardiovascular risk in AHT subjects.

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Prevalence of Metabolic Syndrome in adolescents of Rio de Janeiro City, Brazil

D. G. Denise Giannini[1], M. S. Moysés Szklo[1], M. C. K. Maria Cristina Kuschnir[1–2]. [1]*National Institute of Cardiology* [2]*Rio de Janeiro State University*

Introduction: An increase in prevalence of overweight has been described in adolescents over the last few decades. It is now well documented that the metabolic syndrome (MetSynd) can be detected as early as in childhood. This syndrome is characterized by resistance to insulin, hypertension, high triglycerides, low high-density lipoprotein cholesterol (HDL-cholesterol), high fasting blood sugar and increased waist circumference. **Objective:** To evaluate the prevalence of metabolic syndrome in adolescents with overweight and obesity. **Methods:** The study was carried out in two phases. First, we conducted a cross-sectional study of all 10–19-year-old schoolchildren of both sexes in attending a public school in Rio de Janeiro City, Brazil. Next, those with a diagnosis of overweight and obesity —according to OMS age-specific criteria for Body Mass Index (BMI)– were selected, as well as a sample of adolescents with normal BMI for age. MetSynd was defined using the National Cholesterol Education Program – Adult Treatment Panel III (NCEP-ATPIII) criteria, modified by Ferranti et al. The frequencies of the variables were described and significance of associations tested using $f\acute{O}^2$ and t-student tests. The study was approved by the Ethics Committee of the Rio de Janeiro State University Hospital. **Results:** In the initial phase, including all 1191 10–19 year old students, 21,8% were overweight. Overweight was more frequent in girls (p< 0,001). In the second phase, 204 students were included; the prevalence of overweight was found to be 70%. MetSynd prevalences were, respectively, 19,2% and 1,61% in overweight and in those with normal BMI for age (p <0,001). This syndrome was more frequent in girls (20%) and in whites (31%). Most frequently observed components of the MetSynd were central obesity (57%), low HDL-cholesterol level (27%) and high triglycerides (21%). **Conclusions:** Our results confirm the relationships between MetSynd and cardiovascular risk factors, and underscore the need to initiate primary prevention as early as possible, using schools as an appropriate environment for the implementation of preventive strategies, such as those related to healthy nutrition.

P819

The impact of diffuse coronary artery disease on fractional flow reserve

A. Sahinarslan[1], SA Kocaman[1], T Timurkaynak[1]. [1]*Gazi University Hospital, Department of Cardiology, Ankara,Turkey*

Introduction: Functional flow reserve (FFR), is a reliable guide to differentiate angiographically intermediate lesions which cause significant ischemia. Although FFR is considered to be independent from baseline physiologic conditions, the impact of diffuse atherosclerosis including the index (FFR applied) and other epicardial coronary arteries remains controversial. Inadequate vasodilatation due to diffuse atherosclerosis may lead to underestimation of the lesion severity by FFR. We aimed to investigate the impact of the extent and severity of the lesions in all epicardial coronary arteries on FFR measurement. **Method:** We performed FFR in 113 consecutive patients (89 male 24 female) with an intermediate lesion (40–70% stenosis) at LAD. Fifty-two patients with a FFR value of <0.80 was included in the study. The extent and the severity of the lesions at coronary angiography were calculated for each patient with the Gensini score. The relationship between Gensini score, baseline FFR (FFRbase) and FFR after adenosine administration (FFRmin) was sought. **Results:** The mean age of the patients was 57±10. When we divided the patients into 3 groups according to the number of the coronary arteries with significant lesion (70% stenosis)(group I: 1 vessel,n=25; group II: 2 vessels, n=17; group III:3 vessels,n=10) there was significant relation with FFRbase(0,89± 0,05 vs 0,87± 0,06 vs 0,81± 0,09 respectively, p=0,007) and FFR min (0,76±0,04 vs 0,75±0,05 vs 0,68±0,1 respectively, p=0,002). When we compared Gensini score with the FFRbase and FFRmin, we found significant negative correlations (r=-0,248 p=0,009 and r=-0,685 p<0,001 respectively). **Conclusion:** The overall extent and severity of coronary artery disease in a patient affect the FFR measurement and may lead to misinterpretation of the lesion severity in patients with more diffuse and severe coronary artery disease. The correlation between Gensini score and FFR measurement after adenosine administration suggest a possible role for impairment of vasodilatation capacity in these patients.

P820

Screening of Ischaemic Heart Disease in Chronic Arsenicosis Patients

S Kole[1], R Dutta[1], SK Roy[1], SK Biswas[1], A Ghosh[3], A Kundu[4], S Gupta[4], B Sarkar[2]. [1]*BELLE VUE CLINIC,* [2]*ARSENIC AWARENESS SOCIETY* [3]*SSKM HOSPITAL,KOLKATA* [4]*MP BIRLA EYE RESEARCH CENTRE*

A severe environmental problem of West Bengal is arsenicosis. Chronic Arsenicosis is a the major health problems and a slow killing disaster of West Bengal. A patient of chronic arsenicosis was first detected in 1982 at the school of Tropical Medicine, Calcutta. Presently, all over West Bengal about seven millions of people are the victims of this dreadful disease. More than 37% of population in nine districts is using arsenic contaminated water. Arsenic toxicity which initially affects skin also damages lungs, kidney, liver, bladder etc. Many people died from cancer in liver, bladder and lung due to chronic arsenicosis. **Detection & Water Testing:** The permissible range of arsenic in drinking water as per WHO guidelines is 0.01 mg/liter (though 0.05 mg/liter is taken as permissible amount in India). But in the district of Nadia at Karimpur Block I & II, we found presence of much higher level of arsenic in tube well drinking water in many of these villages - Madhy Gopalpur and Taipur in Karimpur –I arsenic levels was 0.237mg/liter and 0.181 mg/liter in 23.47 meters and 21.95 meters depth tube wells respectively. Our first step in strategy formulation was to make out the total number of tube wells in particular village and to test the water of those tube wells by Arsenic detection kits – to detect the number of arsenic contaminated tube wells. Our project was to find out that whether Arsenicosis patients are having ischaemic heart disease(IHD) or not. We arranged a random study of 448 people of Karimpur I & II. Physical checkup along with blood tests (blood sugar, T.C., D.C. haemoglobin, ESR, Lipid Profile), ECG ECHO and Fundoscopy and X-ray Chest were done for them. Out of these 448 peoples 372 patients were above 40 years. Out of them 130 patients were suffering from chronic arsenicosis and history of arsenic contaminated water intake for more than 9 months (Group A). 142 patients had never taken arsenic contaminated water and they have no feature of chronic arsenicosis (Group B). In Group B 28 patients were diagnosed as case of IHD. In group A only one patient was diagnosed as a case of IHD.

FOLLOWING PARAMETERS AERE OBSERVED IN GROUP A AND B PATIENTS:

	Group A	Group B
Mean age of patients	55 (± 12)	56 (±13)
Mean Blood Pressure of the patients	118/82 (±8/2)mm of Hg	136/88 (±15/10) mm of Hg
Mean blood sugar(F)	86(±8) mg%	118 (±10) mg%
Cholesterol	150 (±20) mg/dl	210 (±40) mg/dl
Triglycerides	110 (±10) mg/dl	150 (±30) mg/dl
HDL	50 (±10) mg/dl	30 (±10) mg/dl
LDL	90 (±8) mg/dl	100 (±18) mg/dl

All of these factors may contribute to lower the incidence of IHD in chronic arsenicosis patients. This is our preliminary finding. Further study is necessary to prove our finding of lower incidence of ischaemic heart disease in chronic arsenicosis patients.

P821

Cadillac risk score and regional perfusion score index

A. Berger-Kucza[1], M Turski, K Wita, M Trusz-Gluza.

Introduction: Cadillac risk score is a good predictor of 30-day and one-year mortality after ST elevation myocardial infarction. Myocardial perfusion estimated by myocardial contrast echocardiography becomes more and more available method evaluating of myocardial viability. **Aim:** comparison of Cadillac risc score and myocardial perfusion **Material and methods:** 115 consecutive patients (75 males, mean age 58± 10) with first anterior myocardial infarction where divided according to Cadillac scale to three groups (A - low 0–2 points (57patients),B-intermediate 3–5 (15patients) and C - high risk score ≥6points(43patients)). On the 2nd day they were performed myocardial perfusion (MP - i.e. 2=homogeneous, 1=reduced, 0=absent contrast in myocardium). Regional perfusion score index (RPSI) was the average of MP results from dysfunctional segments. **Results:** There was a difference of RPSI value in all risk score groups.(mediana 1,87; 1,61, 1,58 respectively). R factor was -0,43 ($p<0,05$) **Conclusion:** RPSI can be good predictor for mortality in patients with ST elevation myocardial infarction

P822

Kissing Ballon Overexpansion in Provisional T-Stenting: Experiences in a Bench Model

M. Zehetgruber[1], B. Pausa, B. Frey. [1]*Medical University of Vienna, Dept of Cardiology, Vienna, Austria*

Background: Provisional T-Stenting is hampered by deficiences in scaffolding or protrusion of the side-branch stent into the main branch thereby obstructing the main branch. We studied the influence of various kissing ballon (KB) parameters on minimal lumen diameter (MLD) of mainbranch (MB) and sidebranch (SB) during provisional T-stenting in a bench model. **Methods:** In a bifurcational silicon model (45 degree angled 2,5 mm MB and 2,5 mm SB) we compared the influence of various diameters and pressures of KB on MLD of the proximal carina (MBprox) and distal carina (MBdist) of the MB stent and of the SB ostium (SBprox) of the SB stent using a nozzle gage. 2,5mm Cypher Select Stents (C) (Cordis) (n=6) were implanted in MB with 11 atm, struts to SB were predilated with a Quantum Maverick Ballon (Q) (Boston Scientific) 2,5/16 atm. SB Stents (C 2,5mm) were implanted with perfect alignment to the proximal carina, resulting in a protrusion of ≤ 1mm at the distal carina. KB overlapped for >10 mm. MLD was measured after each KB step - starting with C 2,5mm/9atm, then Q 2,5/12–22atm and Q 2,75/12–22atm. **Results:** MLD of MBdist and SBprox are severly diminished using standard ballons - and pressures. High pressure dilatation with Q 2,75mm ballons results in significant larger MLDs. Using C 2,5/9atm, MBprox was 2,43±0,11, MBdist 1,52±0,19 and SBprox 1,8±0,17mm. Q 2,5/22atm increased MBprox to 2,78±0,18, MBdist 2,05±0,14 and SBprox 2,1±0,16mm. Overexpansion with Q 2,75/22atm increased MBprox to 2,93±0,09, MBdist 2,35±0,10 and SBprox 2,3±0,21mm. **Conclusions:** Provisional T-Stenting with optimal coverage of the proximal carina results in significant protrusion of SB stent struts into the MB at the level of the distal carina. High pressure KB dilatation with larger ballons is needed to obtain adequate MLD of MBdist and SBprox during provisional T-stenting. The possible rheologic and flow dynamic influence of the protruding stent struts however remain, asking for refinements of this bifurcational 2-stent strategy.

P823

Ameliorating Morbidity and Abolishing Hospital Mortality Associated to Isolated

G. Gonzalez-Stawinski[1], L. Vargas[1], E. Nowicki[1], B. Lytle[1], J. Navia[1], G. Pettersson[1], L. Svensson[1], A. Gillinov[1], N. Smedira[1], J. Sabik[1]. [1]*THE CLEVELAND CLINIC FOUNDATION*

Background: Morbidity and mortality for re-operative coronary artery bypass grafting (CABG) has been consistently higher than for primary CABG. However, with improvements in both medical management and surgical technique this difference has been consistently narrowing. Herein, we report the successful amelioration of morbidity and elimination of mortality associated to re-operative CABG despite a worsening patient risk profile. **Methods:** A retrospective review was conducted of patients undergoing isolated CABG at a single institution. Patients who underwent isolated re-operative CABG were selected for this report. These patients were subsequently divided by eras in which re-operative CABG was performed. Each group was analyzed and compared with regards to total hospital mortality, cerebrovascular accidents (CVA), deep wound infection (DWI), reoperation for bleeding, renal failure (ARF) and post-op myocardial infarction (MI). **Results:** Between 2004 and 2006, 2316 patients underwent isolated CABG. Among these 371 (16 %) patients underwent re-operative CABG. There were148 patients operated upon during 2004, 110 patients operated during 2005, and 113 patients operated during 2006. The proportion of hospital deaths diminished with each era. In 2004, there were 3 (2.0%) hospital deaths following re-operative CABG. This proportion was diminished by more than half in 2005 (0.9%), and ultimately eliminated in 2006 (0%). In addition to the decrease in mortality there were decreases in the proportion of complications. These included a decrease in the proportion of CVA: in 2004 there were 4 (2.7%) recorded CVA's compared to 1 (0.9%) CVA in 2006. Similar decreases occurred in the proportion of ARF (1.4% in 2004 vs. 0.9% in 2006) and MI (2.0% in 2004 vs. 0.0% in 2006). While there was a small trend towards more re-operations for bleeding (4.1% in 2004 vs. 5.3% in 2006), the proportion of DWI remained negligible (0.9% in 2006). **Conclusion:** In the current era re-operative CABG may be successfully performed with minimal morbidity and no mortality.

P825

Women receive less invasive treatment after first acute myocardial infarction

A. Hvelplund[1], J. N. Rasmussen[1], S. Rasmussen[1], S. Z. Abildstrøm[3], M. Madsen[2], S. Galatius[3], J. K. Madsen[3]. [1]*National Institute of Public Health, University of Southern Denmark* [2]*Institute of Public Health, University of Copenhagen* [3]*Department of Cardiology, Gentofte Hospital*

Background: Denmark (population 5.5 million) has a universal health insurance coverage system. Out of 73 hospitals in the country receiving patients with acute myocardial infarction (AMI) five hospitals have highly specialized units performing percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG). All patients for these procedures are admitted directly or referred to the centers. We investigated if there, despite the centralized highly specialized care, was a difference in the rate of PCI and CABG after first AMI between men and women when adjusting for known risk factors. **Methods:** From a national database, all patients aged 30 years or older, hospitalised with first AMI from January 2002 to July 2004 were included. Cox proportional-hazard models were used to estimate the association between gender and revascularisation (composite of PCI and CABG, whichever came first) within 6 months of the AMI adjusted for age, previous PCI or CABG, county of residence, comorbidity, clustering at hospital level and socioeconomic status. **Results:** Of 20 982 patients with first AMI in the period 7921 (38%) were women. Among the women 35% received PCI or CABG in comparison to 58% of the 13 061 men. Some of the difference was because of the higher age, socio- economic differences and comorbidity of women. Even after adjusting for these differences there was still a significantly lower rate of revascularization in the female group. We found that women had a hazard ratio of 0.71 (95% confidence interval 0.68–0.75, $p < 0.0001$) of receiving PCI or CABG within 6 months after first AMI in comparison with men. The impact of female gender did not vary with county of residence. **Conclusion:** PCI or CABG after AMI in Denmark is centralized in highly specialized hospitals in order to achieve a high level of expertise. It is known that women are older and have more co morbid conditions when admitted with first AMI. Despite taking all known differences into account there is still a large difference in the revascularization rate between men and women. Further research is needed to establish the reasons for these differences.

P826

Proximal neuroprotection as the system of choice in high risk carotid artery stenting: Results from an academic center registry of 143 proximal– and 412 distal–neuroprotected CAS

P. Pieniazek[1], P. Musialek[1], A. Kablak-Ziembicka[1], L. Tekieli[1], T. Przewlocki[1], A. Lesniak-Sobelga[1], B. Biernacka[1], K. Zmudka[1], W. Tracz[1]. [1]*Department of Cardiac & Vascular Diseases, Institute of Cardiology, The John Paul II Hospital, Krakow, Poland*

Recent evidence indicates that the use of embolic protection devices (EPD) increases safety of carotid artery stenting (CAS). Presently, most CAS procedures are performed with distal EPDs (filters or distal occlusion balloon) that require unprotected lesion crossing before neuroprotection is implemented. Other disadvantages of distal EPDs include potential incomplete filter apposition, provocation of artery spasm or inability to catch and remove the debris completely. Thus the use of distal EPDs can be associated with cerebral embolization, particularly in case of high-risk lesions. **Aim:** To evaluate safety and efficacy of proximal EPD for high-risk lesions/patients. **Methods:** From Jan 2001 to Sep 2007 we performed 555 CAS procedures in 516 patients (age 38–86 years, 61% symptomatic; all CAS procedures with EPD). For high-risk lesions (in particular, near-occlusions and/or thrombus-containing and/or soft long lesions], and also in case of a lack of an optimal 'landing zone' for a distal EPD, proximal EPD was the system of choice. Thus 143/555(26%) CAS procedures were performed with cerebral flow reversal (PAES/GORE NPS, n=103) or proximal flow blockade (Mo.Ma, n=40). Direct stenting was always considered first. **Results:** Stenosis severity by QCA was significantly higher in the proximal than distal-EPD-treated lesions (90.2±7.9% vs. 81.8±9.9%, $p< 0.001$). Not unexpectedly, direct stenting was possible in only 42.7% (61/143) lesions treated under proximal EPD vs. 74.5% (307/412) lesions treated under distal EPD ($p<0.001$). The access-site complication rate was no different between proximal and distal EPD group (1.6% vs. 1.8%, p=NS) despite the higher profile of proximal EPDs. In the proximal EPD, during the peri-procedural period and up to 30 days there were 2(1.4%) hemorrhagic strokes causing death, 1(0.7%) minor stroke, 4(2.8%) TIAs and 1(0.7%) retinal embolisation. In the distal EPD group there were 1(0.2%) hemorrhagic stroke causing death, 6(1.5%) minor strokes, 10(2.42%) TIAs and 1(0.2%) retinal embolisation. Statistical analysis showed no difference in complication rate between distal and proximal EPD groups for TIA ($p=0.82$); death ($p=0.08$) and stroke ($p=0.46$) despite significantly higher lesion severity in the proximal EPD group. Proximal EPD was used in 131(70.8%) patients with morphologically high-risk lesions (n=185) and closed-cell stent implantation in 155(83.7%). This was significantly higher than the proximal EPD use (4.8%, $p< 0.001$) and closed-cell stent implantation (63%,$p< 0.01$) for other lesions. **Conclusions:** The use of a proximal EPD for CAS in patients with high risk lesions can lead to the peri-procedural and 30-day complication rate that is very low and is similar to that seen with mild-moderate risk lesions stented under distal neuroprotection. Working knowledge of at least one proximal EPD is a must in carotid stenting and needs to be implemented in the training programmes.

P827

PSYCHOLOGY IN THE CARDIAC TRANSPLANTATION PROGRAM

S. Bordignon[1], P. Ruschel[1], L. Lima[1], S. Wottrich[1], R. Machado[1], E. Vigueras[1], P. Cordeiro[1], V. Porto[1], S. Fonseca[1], I. Nesralla[1]. [1]*Instituto de Cardiologia do Rio Grande do Sul / FUC*

Patients with cardiac insufficiency suffer several physical limitations, which impose a condition of fragility and dependency. From this emotional situation frequently arise regressive behaviors,

which favor the acceptance of care from other people, evidencing anxious and dependent behaviors. At Instituto de Cardiologia, the beginning of the history of transplants dates from June of 1984, when Ivo Nesralla accomplishes the first heart transplantation in Rio Grande do Sul. The aim of this study is to report data of the participation of psychology in the cardiac transplantation program. From 1997 until now, psychologists accomplished evaluations of 261 patients for inclusion in the transplantation waiting list. Nowadays, this list includes 14 patients, nine men and 5 women, (average ages of 37.77 and 32, respectively). Several authors refer important matters to be evaluated concerning candidates for cardiac transplantation, such as: do not present serious cognitive dysfunctions, know the proceedings so that it is possible to consent with the surgery in a clear and real way. Personality profile and psychiatric history must also be evaluated. It is important that the patient demonstrates motivation, even though ambivalence is also present. Besides the evaluation, psychologists also accomplish surgical psychoprofilaxis, informing the patients about the surgery, post operative care, and listening and reflecting about their anxiety and fantasies. From 39 transplanted patients followed up by psychology service (32 men and 7 women, average ages of 47.37 and 43, respectively), 16 had psychological assistance on the pre-surgical moment and 37 were assisted on the post-surgical period. After transplant, aspects related to importance of adherence to treatment, adaptation needed on the post-surgical moment and feelings towards the experience are emphasized by psychology. Considering physical and emotional alterations due to the disease as well as the possibility of transplant, we consider psychological assistance a very important tool to overcome high levels of anxiety and anguish, as well as for a good adaptation and clinical/emotional evolution on the post-surgical period.

P828

Early Myocardial Oxidative Stress Profile at 48h Post-Experimental Infarction in Rats and the Effects of Cellular Therapy

A. M. V. Tavares[1], P. C. Schenkel[2], A. C. Taffarel[1], R. Dall' Alba[1], G. Nicolaidis[1], G. Baldo[1], U. Matte[1], A. Belló-Klein[2], L. E. Rohde[1], N. Clausell[1]. *[1]Cardiovascular Laboratory – Research Center, Hospital de Clínicas de Porto Alegre - UFRGS [2]Cardiovascular Physiology Laboratory – Basic Sciences Institute – UFRGS*

Introduction: Oxidative stress is associated with functional changes after myocardial infarction (MI). Studies have reported potential benefits in cardiac function using cellular therapy (CT) after MI. However, the involved repair mechanisms with CT and its relationship with oxidative stress are unclear. **Objectives:** To analyze oxidative stress and functional cardiac performance in an early temporal window (48h post-MI), in an attempt to verify the effects of adjuvant bone marrow (BM) CT in this experimental model. **Methods:** Male Wistar rats, 8-week-old, weighting 333.09±36.03g, (n=10/group) divided in four groups: 1) Sham-operated (S); 2) MI; 3) Sham-operated + CT (ST) and 4) MI + CT (MIT). MI was induced by ligation of the left anterior descending coronary artery (LAD). Cells were obtained from male animals after killing and dissection of both femurs and tibia. BM mononuclear fraction cells were isolated by Ficoll gradient and labeled with DAPI (4'-6-diamidino-2-phenylindole). Five injections (50μL, 2x10^{6}cells) were administered after LAD occlusion in 5 different myocardial sites (groups ST and MIT). Ventricular function parameters were evaluated by echocardiography 48h later. Oxidative profile was studied by measuring antioxidant enzyme activities of superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (GSHPx). Oxidative damage was quantified by protein oxidation (carbonyls) and lipid peroxidation (chemiluminescence - CL). **Results:** Mean akinetic area observed in this model was 47±8%. Ejection fraction (%) decreased in MI group (60.3±6.2) *vs* S (71±2.6) (P<0.01), but it was unchanged comparing MIT *vs* ST, (62.4±9.2 *vs* 69.8±8.5), respectively. Fractional Area Change (mm) decreased in MI (0.529±0.05) *vs* S (0.644±0.02) (P<0.01), as well as in MIT (0.478±0.10) *vs* ST (0.626±0.04) (P<0.001), behaving similarly in both infarcted groups, with and without CT. CAT (pmol/mg protein) decreased in MI (33.9±6.4) *vs* S (73± 19) (P<0.001) but it was increased in MIT (38.73±8) *vs* ST (24.6±7), although it was not different compared to MI without CT. GSHPx (nmol/min/mg prot) showed no differences between S (73.9±14.7) *vs* MI (62.2±16.4) and ST (47.2±9) *vs* MIT (47.5±11.4), as well as between MI *vs* MIT. SOD (U/mg protein) was also similar among groups. CL (cps/mg prot) did not show differences between MI (6809±2539) and S (4295±1794), but it was increased in MIT (7392±2223) compared to ST (4169±1035) (P<0.05), which was not different compared to MI without CT. Carbonyl levels was similar among all groups. **Conclusions:** The novelty of this study is to demonstrate an early decrease in CAT after MI, associated with increased oxidative damage to lipids. This can indicate an involvement of hydrogen peroxide in the mechanism of adverse cardiac remodeling. Those effects were not prevented by cellular therapy in this experimental model, at least in this early time-point.

P829

Heart rate recovery on the first minute in the six minutes walk test in patients with chronic heart failure

S. Chermont[1–2], S Lindemberg Malfacini[1–2], M Pena Quintão[1–2], M De Rossi[1], S Guilhon[3], M M Veloso[1], P L C. Teixeira[1], S Bernardez, A C Lucas Da Nobrega[1], E T. Mesquita[1]. *[1]FEDERAL FLUMINENSE UNIVERSITY [2]SERRA DOS ORGÃOS UNIVERSITY [3]ALOISIO DE CASTRO CARDIOLOGY INSTITUTE*

Background: Heart rate recovery in the first minute(HRR_1) is described as the drop in HR in the first minute immediately after exercise. Recently, in cardiopulmonary exercise test, HRR_1 has been showed to be a strong predictor of morbidity and mortality in patients with heart failure (HF), and it may indicate a disorder in autonomic balance leading to delayed reactivation of parasympathetic tone, but its prognostic assessed after six minutes walk test (6MWT) has not been done yet. **Objective:** The aim of this study is to determine the association between six minute walk distance (6MWD) in the 6MWT and HRR_1 in outpatients with CHF. **Material and Methods:** Following a prospective, transversal protocol, 42 patients (23 male) with compensated CHF, (NYHA class II-III), ejection fraction < 40%, age 62±11 years, and BMI 26,6±5 kg/cm^2, were submitted and assessed in a 6MWT. This test was performed on a level hallway surface 30 m long following AACVPR guideline. Hemodynamics parameters were recorded: HR; systolic blood pressure(SBP); diastolic blood pressure(DBP); mean arterial pressure (MAP); peripheral oxygen saturation(SpO_2), breathing rate(BR), 6MWD and Borg Scale. SpO_2 was mesured by a digital pulse oximeter(Onyx, EUA), during all the test. HRR_1 was defined as the decrease in the HR from peak exercise to one minute after the cessation of exercise test. Abnormal values for the HRR_1 was defined as a reduction of 12 beats per minute or less from the HR at peak of exercise. Patients were alocated in 3 groups considering 6MWD and HRR_1: group 1, patients with 6MWD < 300 meters and HRR_1< 12 bpm; group 2, patients with 6MWD > 300 < 500 m and HRR1> 12 < 24 bpm; and group 3, those patients with 6MWD > 500 m and HRR_1> 24 bpm. Statistical analysis was performed by T-Student test, and p < 0,05 was significant to compare groups. **Results:** The results showed a decrease in HRR1 associaated with 6MWD, which mean distance for all patients was 384±96m. In the first group the HRR_1=3bpm and 6MWD=367±34m m while in the second group the HRR_1=16bpm and 6MWD=417±46m m and in the third group HRR_1=37bpm and 6MWD=428±59m, with statistical significance between groups when compared (p < 0,05). **Conclusions:** There was a small tolerance to 6MWT and a reduced HR fall in group 1, which not occurred in groups 2 and 3. This may reflect a smaller heart rate recovery associated with a smaller 6MWD with likely disagreement in autonomic inbalance, that suggest worse prognosis. These results suggest that HRR_1 may provides additional prognostic information in patients with CHF undergoing 6MWT and maybe, given prognostic value of HRR1 and 6MWD association.

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Chronic hepatitis C infection is associated with increased coronary artery atherosclerozis defined by modified Reardon severity score

F. Kacmaz[1], O. Alyan[2], B. Deveci[3], O. Ozdemir[4], R. Astan[5], A.S. Celebi[6], E. Ilkay[7]. *[1]Bingol State Hospital, Department of Cardiology, Bingol, TURKEY [2]Dicle University, Department of Cardiology, Diyarbakir, TURKEY [3]Veni VÝdi Hospital, Department of Cardiology, Diyarbakir, TURKEY [4]Akay Hospital, Department of Cardiology, Ankara, TURKEY [5]Turkiye Yuksek Ihtisas Hospital, Department of Cardiology, Ankara, TURKEY [6]Numune Hospital, Department of Cardiology, Ankara, TURKEY [7]Mesa Hospital, Department of Cardiology, Ankara, TURKEY*

Introduction: Several previous studies have suggested that there is a link between arteriosclerotic disease and persistent infection or seropositivity of certain micro-oganisms, such as Chlamydia pnuemoniae, cytomegalovirus, Helicobacter pylori, and herpes simplex virus, although the underlying mechanism has yet to be fully elucited. In current litereture, very few data on the relation between hepatitis C virus (HCV) infection and atherosclerosis are available. However, very recent results indicate that seropositivity for HCV shows a positive association with carotid artery plaque and carotid intima–media thickening, independent from other risk factors for atherosclerosis. **Objective:** We aimed to evaluate whether seropositivity for HCV is associated with the severity or extent of atherosclerosis in coronary artery disease proven subjects. **Material and Method:** Three hundred and sixty four consecutive patients (age range 32–84) undergone cardiac catheterization for proven or clinically suspected coronary artery disease were enrolled at the study between. Patients were divided in two groups on basis of anti-HCV serology. Anti-HCV positive group included 139(38.1%); control group(anti-HCV negative) included 225(61.9%) patients had atherosclerotic coronary artery disease with angiographic documentation(>50% stenosis). All angiograms were reviewed by two cardiologist who had no knowledge of the patient's clinical history and laboratory results. Scoring for severity of coronary artery disease was performed with coronary artery scoring system described previously that modified by Reardon et al. To detection anti-HCV antibodies in plasma or serum third-generation enzyme immunoassays laboratory technic that detect antibodies directed against various HCV epitopes was used. **Results:** There were no significant difference between two groups in terms of sex, age, and major risk factors atributable atherosclerotic coronary artery disease such as hypertension, diabetes mellitus, smoking, family history. Among laboratory variables, fasting LDL cholesterol and triglyceride levels were lower in anti-HCV seropositive group compared to control group (p = 0.023). However, no significant differences were found between two groups concerning AST and ALT. In addition, CRP and fibrinogen levels were significantly higher in HCV seropositive group compared to control group(p<0.001). HCV seropositive patients had more multivessel diesease compared to control group. The percentage of HCV seropositivity was increasing with the number of vessels affected (3.6% for one vessel disease, 9.6% for two vessel disease, and 25.1% for three vessel disease, p < 0.001). Similarly, Reardon score were significantly higher in anti-HCV seropositive group compared to control group(p<0.001). In regression analysis, HCV seropositivity (OR:1.565 (95% CI 0.963 to 2.168, p < 0.001)), CRP, and fibrinogen were found to be independent predictors of severity score. After adjustment for other confounding risk factors, the multivariate logistic regression analysis showed that HCV seropositivity still represented an independent predictor for Reardon severity score with an odds ratio of 2.018 (95% CI 1.575 to 2.579, p < 0.001). **Conclusion:** Patients infected with HCV have increased coronary atherosclerosis secondary to more inflamation supported by increased CRP and fibrinogen levels in these patients.

P831

SOCIAL INDICATORS OF PATIENTS IN CARDIAC TRANSPLANTATION WAITING LIST ASSISTED BY SOCIAL SERVICE OF IC/FUC

S. Bordignon[1], V. Porto[1], S. Fonseca[1], L. Lima[1], J. Vieira[1], P. Ruschel[1], P. Cordeiro[1], I. Nesralla[1]. *[1]Instituto de Cardiologia do Rio Grande do Sul / FUC*

Introduction: Concerning cardiopathies, life style can trigger and accelerate the process of the disease. Psychosocial, socioeconomic and socio-demographic questions must be considered as eligibility factors for cardiac transplantation. **Objective:** To analyze social indicators of patients included in transplant evaluation list of IC/FUC. **Method:** Cross-sectional study, having as sample 236 patients evaluated by social service of IC/FUC between 1999 and 2007. Records of social evaluation data of individual and family interviews were reviewed, searching for social indicators such as marital status, origin, schooling years, occupation, family composition,

family income, housing condition and situation. **Results:** Patients are at least 50 years old on (average), 72.5% are men and 66.5% are married. Most of them are from the interior of Rio Grande do Sul (71.6%). Regarding schooling status, 59% have finished elementary school at the most and 6.7% have finished any undergraduate course at University. 53% of the patients have a professional activity, even though the disease promotes functional limitation due to its level of compromise. Only 28% of the people interviewed are retired. Concerning the number of people who live together with the patient, 61% live with more than 4 people, and 61% earn less than R$ 510.00 as family income. 82% of the patients describe their housing situation as having their own house, with good living conditions. Concerning electricity, sewage and water supply, the interviewed subjects report satisfaction levels of 100%, 97% and 98%, respectively. **Conclusion:** The use of the instrument hereby analyzed helps the social worker to evaluate the adequate indication for cardiac transplant. Having as starting point a multidisciplinary strategy, we can develop socio-educational actions to improve quality of life of advanced cardiac insufficiency patients.

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Impact of angiotensin-converting enzyme inhibitor use on the incidence of atrial fibrillation in the early postoperative period of elective cardiac surgery

F.R. França[1], R.J. Alves[1], R.N. Campos[1], R.B. Piveta[1], N. Kenji[1]. [1]*Hospital anta Cruz (São Paulo)*

Background: atrial fibrillation is a frequent complication in postoperative period of cardiac surgery, and the use of angiotensin-converting enzyme inhibitors can decrease the incidence of this arrhythmia. However, the ability of angiotensin-converting enzyme inhibitors to prevent postoperative atrial fibrillation after cardiac surgery has not been adequately evaluated. **Objective:** To evaluate if the chronic and regular use of angiotensin-converting enzyme inhibitors prevents atrial fibrillation in the early postoperative period of elective cardiac surgery. **Methods:** Randomized and retrospective study carried out in 109 patients submitted to cardiac surgery (coronary artery bypass grafting and/or valvular surgery), 74,3% males, 21 to 81 years old (mean age 58,6). Data in respect to surgical characteristics and medication utilization were all uniformly collected. We evaluated the role of angiotensin-converting enzyme inhibitors in regular use regarding the appearance of atrial fibrillation analyzing groups with and without angiotensin-converting enzyme inhibitors in early postoperative period. Patients with previous atrial fibrillation were excluded. **Results:** A total of 109 patients were evaluated of which twenty six patients (23,8%) presented atrial fibrillation in the early postoperative period, 12 (46,1%) using daily some type of angiotensin-converting enzyme inhibitor, and 14 (53,8%) not. Fifty eight patients were in use of angiotensin-converting enzyme inhibitors, 10 of those (17,2%) had systolic left ventricular dysfunction of which only one (10%) developed atrial fibrillation; 48 (82,8%) had not systolic left ventricular dysfunction, and 11 (22,9%) developed the arrhythmia. Fifty one patients were not in use of angiotensin-converting enzyme inhibitors, 9 of those (17,6%) had systolic left ventricular dysfunction of which 3 (33,3%) developed atrial fibrillation, 42 (82,3%) had not systolic left ventricular dysfunction and 11 (26,2%) developed atrial fibrillation. The presence of atherosclerotic risk factors (diabetes mellitus, dyslipidaemia and smoking) and risk factors for atrial fibrillation were similar between the groups, demonstrating the equivalence of the samples. **Conclusion:** These hypothesis-generating data suggest that the chronic and regular use of angiotensin-converting enzyme inhibitors seems to reduce the incidence of atrial fibrillation in the early postoperative period of elective cardiac surgery only in patients with systolic left ventricular dysfunction.

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INCREASED S100B SERUM LEVELS IN DILATED CARDIOMYOPATHY PATIENTS

S. Bordignon[1], G. Mazzini[2], D. Schaf[2], E. Horowitz[1], F. Bacal[3], R. Bruch[1], C. Gonçalves[2], D. Souza[2], L. Portela[2]. [1]*Instituto de Cardiologia do Rio Grande do Sul / FUC* [2]*Universidade Federal do Rio Grande do Sul, UFRGS-ICBS* [3]*Instituto do Coração - InCor*

Background: The S100B protein is considered a biochemical marker for brain injuries. However, our group demonstrated that the ischemic rat heart releases S100B. In this study we investigated the serum levels of S100B in dilated cardiomyopathy patients in order to evaluate its role as a biochemical marker. **Methods:** We selected dilated cardiomyopathy patients, excluding any condition that could influence S100B serum levels. Control individuals were sex and age matched. Both groups were submitted to clinical evaluation and echocardiography. **Results:** We measured the S100B and NT-proBNP serum levels (expressed as median [interquartile range]). NT-proBNP levels in patients group (1462 pg/ml [426–3591]) were higher than in controls (35.4 pg/ml [29.4–54.6]) - $P<0.001$. Also, S100B serum levels were higher in patients group (0.051μg/L [0.022–0.144]) than in controls (0.017μg/L [0.003–0.036]) - $P=0.009$. Additionally, we found a positive correlation between S100B and NT-proBNP serum levels only in patients group (Spearman's coefficient $r=0.534$; $P=0.013$). **Conclusions:** Although we cannot rule out the influence of S100B from brain, the positive correlation between S100B and NT-proBNP among patients points to the myocardium as the main source for the rise in S100B serum levels, with putative role as biochemical marker.

P834

LATE RESULTS OF ENDOVENTRICULAR PATCH PLASTY REPAIR IN AKINETIC AND DYSKINETIC AREAS AFTER ACUTE MYOCARDIAL INFARCTION

S. Bordignon[1], P. Prates[1], A. Homsi-Neto[1], L, Lovato[1], G. Teixeira Filho[1], J. Sant'Anna[1], L. Yordi[1], R. Kalil[1], I. Nesralla[1]. [1]*Instituto de Cardiologia do Rio Grande do Sul / FUC*

Objective - To assess the surgical results of endoventricular patch plasty repair in akinetic and dyskinetic left ventricular areas. **Methods -** We studied 52 patients who had undergone endoventricular patch plasty repair associated with myocardial revascularization. The preoperative functional class distribution was as follows: class I in 1 (1.9%) patient; class II in 2 (3.8%) patients; class III in 23 (44.2%) patients; and class IV in 26 (50%) patients. **Results -** The immediate mortality rate was 7.6% (4 patients). The clinical outcome of 44 patients followed up within a mean postoperative time of 29 $\pm$ 25 months was as follows: class I in 33 (75%) patients; class II in 7 (15.9%) patients; class III in 2 (4.5%) patients; and class IV in 2 (4.5%) patients. Comparison between pre- and postoperative catheterization in 21 patients showed that the ejection fraction increased from 46.3% to 51.3% ($p=0.17$); the left ventricular systolic volume decreased from 76.4 mL to 57.5 mL, ($p=0.078$); and the left ventricular diastolic volume decreased from 141.2 mL to 105.8 mL ($p=0.073$). These findings showed the tendency toward improvement, but with non significant results. **Conclusion -** The technique proved to be effective, to have a low mortality rate, to cause significant clinical improvement, an increase in ejection fraction, and a reduction in left ventricular volumes.

P835

The Effect ol Valsartan in Patients with Pulmonary Hypertension

L. Koldas[1], F. Ayan, G. Bozkurt, I Basar. [1]*Istanbul University Cerrahpa°a Medical School, Department of Cardiology* [2]*Istanbul University Cerrahpa°a Medical School, Department of Cardiology* [3]*Istanbul University Cerrahpa°a Medical School, Department of Cardiology* [4]*Istanbul University Cerrahpa°a Medical School, Department of Cardiology*

Pulmonary hypertension (PHT) can develop secondary to a wide variety of cardiopulmonary disease processes and is associated with a substantial increase in morbidity and mortality The pathogenetic mechanisms include pulmonary vasoconstriction due to alveolar hypoxia or blood acidemia; anatomic compromise of the pulmonary vascular bed secondary to lung disorders, eg, emphysema, pulmonary thromboembolism, interstitial lung disease; increased blood viscosity secondary to blood disorders; anorectic drugs and idiopathic primary pulmonary hypertension. Structural remodelling of the pulmonary vasculature is probably the main contributor to the pathogenesis of pulmonary hypertension Angiotensin II (ANG II) is known to be a potent vasoconstrictor agent in the pulmonary circulation. Furthermore, type 1 ANG II receptor blockade attenuates acute hypoxic pulmonary vasoconstriction in normal subjects. Whether chronic angiotensin-II blockade is beneficial remains controversial. The aim of this study was therefore to evaluate the effect of type 1 ANG II receptor blockage with valsartan in patients with pulmonary hypertension. This was a open-labeled, parallel group study of 62 patients with pulmonary hypertension (trans tricuspid pressure gradient TTPG$>$30 mmHg) with 12 weeks duration,. They were randomised to receive either 80 mg of oral valsartan (Group I) ($n=37$; mean age 58.5$\pm$12 ;26 women) or matched as the control group (Group II) ($n=25$; mean age 57.4$\pm$11 ;16 women). At baseline, after 4 and 12 weeks an echocardiographic evaluation and was performed. Exercise tolerance was measured using the sub-maximal 6-minute walk test. Pulsed wave Doppler echocardiography was used to measure cardiac output (CO), TTPG, left and right ventricular diastolic function, 2-D and M-mode echocardiography was performed to.measure left and right ventricular size and ejection fraction.There was a trend for TTPG to increase in the control group (baseline 36.4$\pm$12 vs 37.9$\pm$10 mmHg at endpoint $p>0.05$) and a significant decrease in the valsartan group (baseline 39.2$\pm$8.5 vs 36.2$\pm$8.6 mmHg at endpoint, $p< 0.05$).More patients in the Valsartan group (40%) than in the control group (25%) showed a clinically meaningful reduction in TTPG at any timepoint; these effects seemed more marked in patients with higher baseline TTPG. There were a trend for exercise capacity and/or symptoms to improve. A significant decrease in systolic and diastolic blood pressure ($p<0.001$) and a significant increase in cardiac output and left ventricular ejection fraction after 12 week was observed. Also a trend to improve left and right ventricular diastolic function and no changes in left and right ventricular s?zes as well as right ventricular ejection fraction was observed. The use of echocardiography may be less precise than invasive measurements but affords the opportunity of repeated measurements. An insignificant increase in exercise tolerance using the sub-maximal 6-minute walk test was shown. We concluded that chronic angiotensin inhibition can reduce pulmonary artery pressure and corrects basic cardiohemodynamic parameters, probably through the blockage of the very potent vasoconstrictor angiotensin II and/or favorable effects on the remodelling processes, but longer lasting and larger studies are required.

P836

THE ISCHEMIC RAT HEART RELEASES S100B

S. Bordignon[1], G. Mazzini[2], D. Schaf[2], A. Oliveira[2], C. Gonçalves[2], A. Belló-Klein[2], R. Bruch[1], G. Campos[2], D. Souza[2], L. Portella[2]. [1]*Instituto de Cardiologia do Rio Grande do Sul / FUC* [2]*Universidade Federal do Rio Grande do Sul, UFRGS-ICBS*

Introduction / Objectives: S100B is an astrocytic protein assessed in cerebrospinal fluid and serum as a biochemical marker of cerebral injuries. However, increasing evidences suggest the influence of extra cerebral sources on its serum levels. Since it was reported that the injured myocardium expresses S100B, we investigated whether the isolated heart releases this protein. **Methods:** The rat hearts were excised and perfused by the Langendorff technique of isolated heart perfusion. After stabilization, 10 hearts (ischemic group) were submitted to 20 minutes of ischemia and 30 minutes of reperfusion, and 5 hearts (control group) were submitted to 50 minutes of perfusion. The perfusion fluid was collected at preischemia, and 0, 5, 10, 15 and 30 min after ischemia (or equivalent in controls) for S100B and cardiac troponin T (a heart injury marker) assays. **Results:** In the ischemic group, S100B and troponin T levels increased significantly at time 0 min: S100B values [Ag/L, median (IQ25/IQ75)] increased from V 0.02 (V 0.02/0.03) to 0.38 (0.22/0.84), while troponin T values [Ag/L, median (IQ25/IQ75)] increased from 0.31 (0.15/0.45) to 2.84 (2.00/3.63). **Conclusion:** Our results point to the ischemic heart as an extra cerebral source of S100B.

P837

Gene expression profiling in atrial fibrillation patients with structural heart diseases.

M. Kharlap[1], L. Goryunova[1], A. Timofeeva[1], G. Smolyanova[1], G. Khaspekov[1], S. Dzemeshkevich[1], R. Akchurin[1], V. Ruskin[1], S. Golitsyn[1], R. Beabealashvilli[1]. [1]*RUSSIAN CARDIOLOGY RESEARCH COMPLEX*

Atrial fibrillation (AF) leads to electrical and structural remodeling of atrial myocardium. To obtain the new insights into the molecular pathogenesis of these changes in humans, we have analyzed the expression profiles of 2940 genes in a total of 56 human specimens of right atrial appendages. While investigating of AF, the problem of control group selection is usually arised. To solve this problem, the group of AF patients have been compared not only with group of patients with structural heart diseases without AF, but with autopsy samples group from individuals with no signs of cardiovascular pathology (died due to street accident). We used cDNA microarray method and cluster analysis to identify groups of genes which are correlated with sinus rhythm, AF and autopsy. We have found genes to be differentially expressed in AF tissues samples involved in signal transduction, gene transcription regulation, intercellular communications, calcium homeostasis, cardiomyocyte contraction, cell growth and proliferation. cDNA microarray data for brain natriuretic peptide precursor B and insulin-like growth factor binding protein 2 which are correlated with AF have been confirmed by RT-PCR analysis. Additional studies are needed to determine the specific role of each selected gene in pathophysiological changes leading to AF.

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Angiographic Pulmonary Anatomy in Pulmonary Atresia with Ventricular Septal Defect. A Useful Classification and Surgical Approach.

Marco Aurelio Santos[1], Vitor Manuel Pereira Azevedo[1], José Geraldo De Castro Amino[1], Maria Ourinda M. Da Cunha[1], Rogério Brant Martins Chaves[1], Maria Cristina C. Kuschnir[1], Renato Kaufman[1], Bernardo Rangel Tura[1], Regina Maria De Aquino Xavier[1]. [1]*National Institute of Cardiology*

Background: The complexity of broncohopulmonary anatomy complicates the management and outcomes of patients with pulmonary atresia associated with ventricular septal defect (PAVSD). **Objective:** We sought to describe a classification and morphologic characteristics of pulmonary anatomy in children with PAVSD. **Methods:** Fifty-six children with PAVSD underwent angiographic study with contrast medium injections in: 1) wedged pulmonary vein, 2) aortopulmonary collaterals, 3) thoracic aorta, and 4) ductus arteriosus or systemic-pulmonary shunt. **Results:** In the 56 patients studied, pulmonary bloody was supplied as follows: in 15 by aortopulmonary collaterals (AoP-Co), in 36 only by the ductus arteriosus, and in the remaining 5 by ductus arteriosus and AoP-Co. Six patients had one AoP-Co, 7 had 2 AoP-Co, 5 had 3 AoP-Co and 2 had 4 AoP-Co. An inverse relation was observed between the total numbers of AoP-Co and the size and numbers of central pulmonary arteries. Of the 43 AoP-Co, 39 vessels (90.7% - 95%CI=76.9% to 97.0%) had a defined narrowing at some point of its trajectory or its origin. The most frequent site of stenosis was the connection between the AoP-Co and pulmonary artery. In four of 20 patients (20% - 95%CI=6.6% to 44.3%) no AoP-Co with stenosis were identified. The most frequent site of pulmonary stenosis was in the central pulmonary artery. In five patients, the stenosis was located at the origin of the right pulmonary artery, and, in eight patients, at the origin of the left pulmonary artery. Stenosis of the peripheral pulmonary artery was evidenced in five patients. Four patients had stenosis of the pulmonary artery at the site of the systemic-pulmonary anastomosis. The incidence of incomplete arborization was 29%; when confluence of the right and left pulmonary arteries existed, it did reach 5%. According the presence or absence of vascular vessels and the pulmonary blood supply in pulmonary atresia and ventricular septal defect, the 56 patients were classified in six types, summarized in Table APCA – aortopulmonary collateral arteries; MPA – main pulmonary artery, LPA – left pulmonary artery, RPA – right pulmonary artery, PDA – patent ductus arteriosus, P – presence, A – absence, S – single, B – bilateral. **Conclusions:** the morphologic characteristics of pulmonary anatomy in PAVSD is an important determinant of mortality, achievement of definitive report, and post-repair reoperation, therefore, the surgical decisions should be tailored to well-defined bronchopulmonary anatomy.

	MPA	PDA A/S/B	RPA-LPA Confluence	APCA	N patients (Total=56)
Type I	P	S	P	A	25
Type II	A	S	P	A	11
Type III	A	A	P	P	13
Type IV	A	A	A	P	2
Type V	A	S	A	P	5
Type VI	A	B	A	A	0

P839

Reflections on strategies of psychosocial rehabilitation of the transplant patient, from my experience as a volunteer in a supportive house.

M. Machado[1], C. Garcez[1], M. Tatsch[1], S. Macin[1], L. Rosa[1], N. Antunes[1], A. Alvim[1], J. Souza[1]. [1]*Via Pró Doações e Transplantes*

Introduction: Concerned in offering a way of expression to the transplant patients and their partners in a supportive house, many activities were suggested and their participation has been stimulated. **Objectives:** To present the work we realize through the activities, basing the results observed in the theories, aiming to justify the relevance of this practice to this population. **Methods:** Evidence based practice seeking scientific/theoretical basis in the literature. **Results:** Although the patients presented some resistance to participate in the activities, as they can't do anything else than wait, they gradually become involved and find out that, besides occupying their free time, the activities promote anxiety relief and motivation to leave depressive states, giving opportunities to express their affliction, as well as to obtain a better relationship with the other inmates. They also have the possibility of learning modalities of craftsmanship and, in the case of children and adolescents, to continue their scholar process, facilitating their return to regular classes and social reintegration. **Conclusion:** We conclude that offering opportunities of directed activities to this population contributes greatly for them to experience the process of transplantation, suggesting that other studies should be done to enhance the development of these activities and the benefits obtained.

P840

Comparison of left ventricular ejection fraction evaluated by dual source CT and two-dimensional echocardiography

R. Duchonova[1], K. Linhartova[1], L. Martinkovicova[1], T. Adla[2], J. Neuwirth[2], J. Veselka[1]. [1]*Dept. of Cardiology, Faculty Hospital Motol, Prague, Czech Republic* [2]*Dept. of Radiology, Faculty Hospital Motol, Prague, Czech Republic*

Purpose: Analysis of left ventricle function could be a part of CT coronary angiography (CTCA). Aim of study is to evaluate the diagnostic accuracy of assessment left ventricular ejection fraction (LVEF) measured from CTCA in comparison to two-dimensional echocardiography (ECHO). **Methods and Materials:** A single-center registry of patients with a stable angina pectoris examined by both methods was analyzed. Investigated group contained 62 patients (40 males, 63+/-9 years). CTCA were performed with dual source CT (Somatom Definition, Siemens, Germany). Raw CTCA data were reconstructed in 10 phases of heart cycle (width of slice 2 mm, matrix 256) and processed with dedicated workstation (AquariusWS 3.6.2.3, TeraRecon, USA) with volumetric threshold-based method. ECHO LVEF was as assessed by the biplanar modified Simpson method. **Results:** Mean LVEF of ECHO was 52.3+/-10.5%, of CTA was 64.9+/-13.2%. Correlation coefficient was high ($R=0.718; p<0.001$). But difference between ECHO and CTCA was significant, mean difference between CTCA and ECHO was 12.6+/-9.8 (95%CI 10.2–14.9;$p<0.001$). **Conclusion:** There is a statistically high significant correlation among EFLV evaluated by CTCA and ECHO. EFLV measured by CTCA is significantly overestimated in comparison to ECHO. We presume that difference between these methods could vary with used equipment and software and local reference standard should be determined for each institution.

P842

Elective Electrical Cardioversion Protocol: Quality Indicator in a Cardiac Emergency Department

K. Andrade[1], A Pinheiro[1], A Volschan[1], MF Muiño[1], V Mattos[1], C Almeida[1], G Trancoso[1], S Simas[1]. [1]*Pró-Cadíaco Hospital*

Introduction Electrical Cardioversion is used as treatment to some types of arrhythmias. It is a very accurate and well tolerated method, but it is necessary that the patient be in profound sedation. The implementation of a systematized protocol in the care assistance of patients who will undergo electrical cardioversion provides means to support quality in care both for the physician and the nurse team and their continuous evaluation. Monitoring results help the surveillance of quality assistance as well as the identification of opportunities to improve. They are tools that enable the definition of parameters that will be used to make comparisons and add values and opinions as to what was found and what goal was established, thus requiring well planned data collection and systematization. **Objective** To monitor complications derived from electrical cardioversion in the Cardiac Emergency Room. **Casuistics and Method** This is a retrospective, descriptive study with quantitative approach. Sixty-three patients submitted to electrical cardioversion were evaluated. Mean age was 69 + 13 years old and 65,1% were male. The study was carried out from January to December 2007 in the Emergency Room of a private hospital with clinical surgical assistance in the city of Rio de Janeiro. Data were transcribed in a semi-structured form, and it was filled in by the nurse who participated in the care during the procedure. **Results** Out of the 63 patients submitted to electrical cardioversion, 73% presented Atrial Fibrillation for an undetermined period, 8,5% Atrial Fibrillation less than 48 hours, 17,5% Atrial Flutter, 1,6% Supraventricular Tachycardia. Among the complications 1,6% (1 patient) presented post reversion bradyarrhythmia and 4,8% (3 patients) first degree burn. **Final Considerations** It is mandatory to assess the patient's previous history and identify the drugs and risk factors in order to achieve quality care. By so doing, we can minimize or exclude possible complications as seen in the trial results. It is also important to highlight that the search for quality requires a degree of conformity established within patterns and criteria and measured by indicators like electrical cardioversion. The Emergency Room team should reflect on their practice aiming to view the most fragile assistance aspects and to suggest improvement measures, therefore exchanging experiences and evaluating the best practice and the good results.

P843

Acute Effects from Weaning of Mechanical Ventilation by Holter Analysis

G A Tinoco[2], M P Quintão[1–2], C L Oliveira[2], A Torrão[1], J C Pereira[1], J M Linhares[1], L N De Barros[2], R Tinoco[2], E T Mesquita[3], S Chermont[1–2]. [1]*SANTA MARTHA HOSPITAL* [2]*SERRA DOS ORGÃOS UNIVERSITY* [3]*FEDERAL FLUMINENSE UNIVERSITY*

Backgrounds: Heart failure (HF) is a common problem in Intensive Care Unit (ICU). Invasive mechanical ventilation (MV) is lifesaving for patients with HF, but it is also associated with substantial risks. Therefore, efforts focus on liberating (weaning) the patient from the ventilator is essencial. MV with positive pressure in patients with HF aroused changes in intrathoracic pressure that resulting in changes of hemodynamics paramethers. This effects in heart-lung interactions decreases preload, afterload and cardiac output (CO). The opposite of this effects increases preload, afterload and CO owing withdrawal of MV and this transition from MV to spontaneous breathing allows progressive adaptations in MV. Critical patients with previous HF may presents significant hemodynamics variations during weaning of MV. Reports concerning

to change in rhythms and this effects on weaning in critical patients with HF is poor know. **Objective:**To determine the acute effects of weaning from the MV on non-invasive hemodynamics variables and rhythm fluctuation during weaning from MV through the Dynamic Electrocardiography (DE) in patients with heart failure. **Material and methods:** Folowing a prospective, transversal protocol 12 patients, (75±5 years), 72±8 Kg, (8 male; 4 female), ejection fraction <40%, underwent MV at least 48 hours. The weaning method employed was PSV with 10cmH_2O, and it was affixed the consensual parameters and RR/TV for the weaning. Variables and ECG was registered by Holter System (Cardioflash Digital, SP, Brazil), 30 minutes before pressure support ventilation (PSV10cmH_2O) and during the weaning progression (T-piece in 5L/minO_2) until two hours late MV withdrawal. Variables were recorded and analysed in a Holter System computer program (Cardiosistems, SP Brasil): heart rate (HR), frequency of ventricular premature complexes and supra-ventricular arrhytmias (VPC; SVA) and changes in ST segment. It was also registered of systolic, diastolic, and mean arterial pressure (SBP,DBP,MAP) respiratory rate (RR), SpO2 and gasometric analysis, during weaning. Statistical analysis was performed by Student test-t and ANOVA one way. **Results:** there were significant variations pre vs. post liberating from MV. During the first hour of weaning, results showed: maximal HR (pre:104±13 bpm vs post:114±13bpm; p=0,03), increases in ventricular premature complexes (pre:142±25 vs. post:363±29; p=0,01) and SBP decreased (pre:141±25mmHg vs. post:130±17mmHg; p=0,03). During the second hour, SBP was stabilized. RR increase (pre:25±6bpm, vs. post: 29±9bpm; p=0,02) although patients not relate disconfort. There were no changes in SpO2 and gasometric parameters after MV withdrawal. **Conclusion:** in this pilot study, the weaning from MV in patients with HF is associated to an increase of HR and increases in ventricular premature complexes, suggesting that the loss of positive pressure in the thorax after weaning from PSV or, the transition from intrathoracic positive-pressure ventilation to negative-pressure ventilation, may cause increases of VPC. It is necessary establish a control protocol to better access this results.

P845

Size of myocardial infarction but not transmurality is associated with lower left ventricular ejection fraction and higher sphericity index

D. Perez De Arenaza[1], M Pietrani[1], M Falconi[1], P Pollono[1], J Moon[2], F Abramzon[1], P Oberti[1], L Grinfeld[1], R Garcia-Monaco[1], A Cagide[1]. [1]*Hospital Italiano Buenos Aires, Argentina* [2]*Heart Hospital, London, UK*

Background and introduction Non-transmural myocardial infarction (MI) has a viable ring of epicardial myocardium that might preserve the left ventricular (LV) function and prevent adverse remodelling. The purpose of this study was to assess the effect of size and transmurality extent of myocardial infarction on LV function and remodelling by cardiovascular magnetic resonance (CMR) using late enhancement with gadolinium. **Methods** We studied 28 patients with documented chronic MI who underwent a CMR scan. Left ventricular function was estimated by cine sequences. The size and transmural extent of MI were quantified by late enhancement with gadolinium. A model of 17 segments was used for MI location. LV remodelling was assessed by the sphericity index. **Results** The mean ejection fraction was 43% ± 16 and the sphericity index 45% ± 16. The mean size of MI was 28% ± 0.16 of the total myocardial mass and 59% of the patients have at least one segment with transmural extent of MI. Size of MI was inversely associated with LV ejection fraction (spearman R= -0.83, p<0.0001), and directly associated with LV sphericity index (spearman R= 0.56, p=0.0007). Trasmural extent of MI was associated with a lower LV EF (transmural MI has LV EF 37 ± 2.6 vs non-transmural LV EF 54% ± 4.2, p=0.011) but not with the sphericity index. In multivariate models, the extension of MI was an independent predictor of EF and sphericity but transmural extent of MI was not associated. **Conclusions** In patient with chronic MI, LV ejection fraction and degree of remodelling (sphericity index) are determined by the total size rather than the transmural extent of underlying MI.

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PYRIDOSTIGMINE INCREASES BAROREFLEX SENSITIVITY AND IMPROVES AUTONOMIC BALANCE AFTER MYOCARDIAL INFARCTION IN RATS

R. N. De La Fuente[1], I.C.M. Silva[1], L.E. De Souza[1], G.O. Candido[1], R.A. Sirvente[1], B. Rodrigues[1], E.M. Krieger[1], S. Lacchini[2], M.C. Irigoyen[1]. [1]*Heart Institute (InCor), University of São Paulo Medical School* [2]*Biomedical Science Institute, University of São Paulo*

Background: Despite recent progress in the treatment of congestive heart failure due to systolic left ventricular dysfunction, the prevention of sudden death remains a major challenge. Autonomic impairment with increased sympathetic and reduced vagal modulation on sinus node may participate in pathophysiology of cardiac failure, since parasympathetic dysfunction is a predictor of death in this population. **Objectives:** The aim of this study was to verify the effects of 7-day treatment with Pyridostigmine bromide (PYR) on vagal responsiveness and cardiac autonomic control in myocardial infarcted rats. **Methods:** Twenty two Wistar rats (220–260g) were divided in 3 groups: IP, infarcted treated with PYR in drinking water (6±1mg/day, n=7); I, infarcted group (by coronary artery ligation, n=9) and C, control group, (n=6). Blood Pressure (BP) and Heart rate (HR) were recorded from femoral artery pulse pressure (Windaq, 2KHz) during 30 minutes in conscious rats. Autonomic heart influences were assessed by both pharmacological blockade (atropine and propranolol, 4mg/Kg) and spectral analysis (Fast Fourier Transform). The baroreflex sensitivity (BRS) was tested by changing BP with phenylephrine and sodium nitroprusside. Statistical analysis was performed using two-way ANOVA, with post-hoc Student Newman Keuls. Results are presented in mean and standard error, and p<0.05 was considered significant. **Results:** There were no differences between groups in HR (IP:346±10; I:359 ±4 and C:357±12 bpm). BP was similar between in IP (102±3 mmHg) and C (104±4 mmHg) but it was reduced in I rats (95±3 mmHg). PYR treatment restored vagal tonus (IP: 62±4 bpm, C: 52±5 bpm, vs. I: 39±5 bpm), and sympathetic tonus (IP: 42±8 bpm, C:51±4 bpm, vs. I: 106±14 bpm), when compared to infarcted rats. On the other hands, PYR treatment decreased sympathovagal balance in IP (0.16±0.03(ua)) as compared with C and I (C: 0.63±0.06 and I: 0.71±0.27 (ua)). Also, the bradycardic (IP:-1.89±0.3, C:-1±0.2, and I:-1±0.13 bpm/mmHg) and tachycardic (IP:2.5±0.3, C:2.9±0.2, and I: 1.6±0.13 bpm/mmHg) baroreflex responses were improved in IP rats when compared with I rats. **Conclusion:** Treatment with PYR increases BRS and improves hemodynamic parameters after myocardial infarction in rats. This improvement is probably due to an increased vagal tonus and reduced sympathovagal balance. These data gives support to cholinergic stimulation as an efficient pharmacological tool for management of vagal dysfunction in cardiovascular disease.

P847

Comparison between High resolution model and traditional Health System model in an Outpatient Consultation Department of Cardiology. Experience of 5 years

G.A Cortez Quiroga[1–2], C. Rus Mansilla[1], M.M. Martinez Quesada[1], G. Lopez Moyano[1], M. Delgado Moreno[1], E. Ruiz De Temiño De Andres[2], D. Sevilla Ruiz[1–2], M. Gavilan Perez[1], C. Recuerda Casado[1]. [1]*HOSPITAL ALTO GUADALQUIVIR* [2]*HOSPITAL SIERRA DE SEGURA*

Introduction: the high resolution model (HRM) we use in our Hospital's Department of Cardiology consists at the integration the clinical evaluation and the carrying out of complementary tests (CT) in a unique consultation, to avoid delayed diagnostic tests. When a diagnosis and treatment are made during the first consultation (FC), is called Unique Consultation (UC). We apply the concept of revision in the day (RD), that is the achievement of complementary tests in the same consultation. The RD can be made: 1°) patients who come for the first time (first consultation, FC); or 2°) the follow-up patients kept in check as successive consultations (SC). **Objective:** comparison between the HRM in two Community Hospitals, Hospital Alto Guadalquivir and Hospital Sierra de Segura, attended by three cardiologists, and an assumption of Tradicional Model (TM), with regards to days used to complete consultations, between january 2003 and august 2007. It is a restrospective observational study. **Results:** A total of **18600** patient came in the consulting room in **1159 days of HRM**, 16.04 patients per day: 7,80 FC (77,76% were UC); 8;24 SC. We achieved 8761 complementary tests, (apart from electrocardiograms), 5806 echocardiographies (transtoracic, transesophageal, stress echocardiography and contrast echocardiography), 1029 exercise tests, 1848 Holters, 73 Tilt Tests and 5 six-minute walk test. The **TM** had required **29746 consultations**, to atend and complete the same complementary test, that could be neccesary **1854,48 days (OR 0.63 0.59–0.67)** (on average 16,04 patients per day), the result could be **2,79** more years, or, it would have to schedule **25,66** consultation per day (9,62 more consultation on average a day). **Conclusion:** This model allows taking care of a higher number of patients, employing the same personal and material resources of the department of cardiology, improving the efficiency of the health system, reducing the delay, avoiding multiple visits of the patient and making possible an early diagnosis and treatment. It is a concept that is possible to implement in cardiology, since the tests do not require specific patient preparation, and it can be made by the cardiologyst.

P849

ENDOMYOCARDIAL FIBROSIS – MISSED DIAGNOSIS

V. Vaghela[1], K. Sliwa[1], R. Mvungi[1]. [1]*Chris Hani Baragwanath Hospital, Cardiology Department, University of Witwatersrand, Johannesburg, South Africa*

Endomyocardial fibrosis (EMF) is a fascinating disease of unknown etiology. It is prevalent in the tropical zone. Its characteristic features are the formation of fibrous tissue on the endocardium and to a lesser extent in the myocardium of the inflow tract, as well as apex of one or both ventricles. This leads to endocardial rigidity, atrioventricular (AV) valve incompetence secondary to papillary muscle involvement and progressive reduction of the cavity of the involved ventricle leading to restriction in filling and atrial enlargement. We report a case of EMF diagnosed at the Chris Hani Baragwanath Hospital, Cardiology Clinic that was being followed-up as Ebstein's anomaly. An 18 years old male, from Mozambique presents with gradually progressive right heart failure over 4 years, massive ascites which was exudative with predominantly lymphocytes, persistent eosinophilia over the last one year. Chest X-ray showed gross cardiomegaly with features of right atrial enlargement. Electrocardiogram showed atrial fibrillation and features of right ventricle (RV) hypertrophy. Echocardiography showed a large right atrium with "smoke", small right ventricle, thickened RV wall with increased echogenicity and distortion of AV valve at insertion points. The presence of a small ventricle with obliteration of the apex and large atrium shown on two-dimensional echocardiography is highly suggestive of EMF. Treatment is mainly endocardiectomy and/or valve replacement. Prognosis is generally poor with death occurring usually within two years of diagnosis.

P850

Critical aortic stenosis in infancy – how small can left ventricle be, and still be adequate to support the circulation after an aortic valvotomy.

Marco Aurelio Santos[1], Vitor Manuel Pereira Azevedo[1], José Geraldo De Castro Amino[1], Maria Ourinda Mesquita Cunha[1], Rogério Brant Martins Chaves[1], Renato Kaufman[1], Maria Cristina C. Kuschnir[1], Bernardo Rangel Tura[1], Regina Maria De Aquino Xavier[1]. [1]*National Institute of Cardiology*

Background: Severe aortic stenosis in infants has a high early mortality after valvotomy, whether done by surgery or balloon. Part of the reason for this mortality might be that some left ventricles in these infants are too small to support an adequate circulation pos-valvotomy. We sought to determine the lowest acceptable volume (critical) to keep cardiac output in patients candidates to biventricular repair pos-valvotomy. **Patients and Method:** We study 21 infants with aortic and 232 compiled from literature. Values of left ventricle and diastolic volume (LVEDV), from 20 to 60 ml/m2 were assumed as normal. The LVEDV of dead patients

was compared to that from alive. A correlation between the age and LVEDV was carried out at the time of valvotomy, between the groups. Finally, we determine the LVEDV through the basic physiology of cardiac output: LVEDV=cardiac output (CO) / ejection fraction (EF) x heart rate (HR). This formulation allows us to relate LVEDV to CO and HR for any given EF. **Results:** For LVEDV <20 or >60 ml/m2, there was statistical significance between dead and alive patients ($p<0.0001$). However, in the range between 20 to 60ml/m2 its significance was lower ($p=0.0309$). A greater incidence of death was in patients in the first week of life. We generate a family of theoretical curves that defines the relationship between LVEDV, and HR for different EF and designed cardiac index (CI). For a CI of 2,000 ml/min/m2 and HR of 140bpm, the critical LVEDV will be 22 ml/m2 if the EF is 0.70 and 36 ml/m2 if EF is 0.40. However, for a CI of 2,500 ml/min/m2 and the same HR of 140bpm, the critical LVEDV will be 26 ml/m2 if the EF is 0.70 and 44.5 ml/m2 if EF is 0.40. **Conclusion:** When the issue of univentricular versus biventricular repair arises, consideration of critical LVEDV, both from theoretical and empirical points of view, adds our ability to make the right decision for these patients.

P855

Effects of Carvedilol on Quality of Life and Clinical Outcomes in Elderly patients with Chronic Heart Failure

N. Ganugrava[1], I Jashi[2], B Kobulia[3], R. Abashidze[4], G. Tabidze[5].

Purpose: Traditional aims in the treatment of Congestive heart failure are to relieve symptoms and to improve the prognosis. Another major goal of health care is to maximize function in everyday life and to achieve the highest level of quality of life within the specific limits imposed by the disease. The objective of our study was to establish the efficacy of Carvedilol (C) on quality of life and clinical outcomes in elderly patients with chronic heart failure. **Methods:** 78 patients, aged 70 to 82, with mild to moderate, stable chronic heart failure, were divided in 2 groups depending on the treatment: I group (37 patients) received ACE-inhibitors, and diuretics; II group (41 patients) – ACE- inhibitors, diuretics and C 3,125 mg bid, titrated up to 25 mg bid. After a 2–4-week up-titration period, subjects remained on study medication for a period of 12 months. Central hemodynamic was determined by echocardiography, sub maximal exercise measured by two different techniques, the 6-minute corridor walk test and 9-minute self-powered treadmill test. Quality of life was assessed by the Minnesota Living with Heart Failure Questionnaire. **Results:** C was associated with improvements in LV ejection function, functional class (2.44 ± 0.50 before treatment vs. 2.01 ± 0.55 after treatment, $p<0.001$), sub maximal exercise tolerance, and quality of life scores –emotional (7.1–10.1 vs. 3.4–5.3, $p<0.001$), physical (19.1–23.9 vs. 10.7–14.5, $p<0.001$) and total (36.0–46.0 vs.19.5–26.4, $p< 0.001$, respectively) to a greater extent than traditional therapy of CHF. **Conclusions:** C is an effective and well tolerated treatment for CHF in the elderly. After 12 months treatment with C subjective complaints and objective symptoms of CHF decreased and tolerance to physical activity increased, reduced the functional class of CHF, which helps the rehabilitation of patients.

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Adherence to selective criteria for the use of drug-eluting stents results in low rates of target vessel revascularisation

J. Gohil[1], K. Kadappu[1], Q Lo[1], D. Tobing[1], S. Lo[1], A.P. Hopkins[1], D. Leung[1], C.P. Juergens[1], **J.K French**[1]. [1]*Liverpool Hospital, Sydney, Australia.*

Background: The deployment of drug-eluting stents (DES) during percutaneous coronary intervention (PCI), reduces restenosis rates. However there are concerns about late stent thrombosis rates after cessation of dual anti-platelet therapy with aspirin and clopidogrel. Low target vessel revascularisation (TVR) rates with deployment of bare metal stents (BMS) have been reported in patients with particular clinical and lesion characteristics. Thus it may be feasible to selectively use DES while maintaining low clinical restenosis rates. **Methods and Results:** We examined the outcomes of the 2444 patients who underwent PCI at our institution in the 3 years from October 2003, when we developed criteria for the selective use of DES. These criteria were as follows: left main stenosis; ostial lesions of major epicardial arteries; proximal 1/3 LAD lesions; lesions >20 mm in length with vessel diameter <3.0 mm; lesions in vessels ≤ 2.5 mm; diabetics with vessel(s) < 3.0 mm; and in-stent restenosis. These DES criteria applied to all clinical indications of patients for PCI including 29% ST segment elevation myocardial infarction, 40% non-ST elevation acute coronary syndromes, and for other non-urgent indications including staged PCI. All PCIs were reported and coded on the cardiology database prospectively, and patients were routinely contacted by phone by angioplasty research nurses at ~12 months to determine late events including the clinical TVR rate. Of 2444 patients (20% diabetics) undergoing PCI, 92% underwent successful stent deployment of whom 26% received at least one DES. The lack of adherence to the criteria for selective DES use was 2.6%, as assessed by 2 interventional cardiologists who were blinded to late outcomes. The TVR rates after follow-up of 8 and 24 months were 4.4% and 6.7%, respectively. One year mortality and myocardial infarction rates were 6.7% and 1.6% respectively. **Conclusion:** It is possible to achieve high compliance with selective criteria for DES use while maintaining low TVR rates. However, our high mortality rate which reflects our predominant acute coronary syndrome case-mix, may have lead to an underestimate of the restenosis rate. This policy of selective DES use may avoid the necessity for long-term dual anti-platelet therapy in the majority of patients.

P858

Assessment of Myocardial Dysfunction in Patients with non-ST Segment Elevation Myocardial Infarction Using Serum B-type Natriuretic Peptide Level

B. Kim[1], B Lee[1], C Goh[1], Y Byun[1], K Rhee[1]. [1]*INJE UNIVERSITY, SANGGYE-PAIK HOSPITAL*

Background and Objectives: While a relationship between the amio-terminal probrain natriuretic peptide (NT-proBNP) and impaired left ventricular function with or without heart failure after transmural infarction is reasonably anticipated, the findings of studies evaluating BNP in patients without or with minimal myocardial necrosis such as Non-ST elevation myocardial infarction (NSTEMI) have been intriguing. We studied whether the elevated NT-proBNP is correlated with the extent of left ventricular (LV) systolic dysfunction after NSTEMI and evaluated the NT-proBNP level as a marker of diastolic LV myocardial dysfunction in the patients with preserved LV systolic function after NSTEMI. **Methods:** Of the 202 patients with Acute Coronary Syndromes enrolled in the AMI registry of our hospital, 91 NSTEMI patients were recruited. We analyzed the linear regression between the initial demographic data, cardiac markers, and NT-proBNP, and cardiac functions with echocardiographic parameters. LV ejection fraction (LVEF), peak early velocity (E) by using mitral pulsed wave Doppler, mitral annular peak early velocity (E') of tissue Doppler imaging and E/E' ratio were used. **Results:** The age, peak troponin T, hsCRP, NT-proBNP, wall motion score (WMS) correlated with LV systolic ejection fraction (LVEF) and the NT-proBNP had a strongest correlation ($p<0.001$). The NT-proBNP showed still a strong correlation with E/E' ratio (9.0 ± 3.2) even in the patients ($N=57$) with preserved LV systolic function (EF>50%), but other factors did not. The NT-proBNP was the only marker of minimal myocardial necrosis and myocardial dysfunction in the patients with NSTEMI and preserved systolic function. **Conclusions:** The circulating NT-proBNP levels might be associated with the extent of myocardial ischemia and correlated with systolic and diastolic dysfunction in the patients with NSTEMI. These findings suggested the elevated NT-proBNP might be a marker of LV dysfunction in non-transmural myocardial infarction, and a very sensitive marker for diastolic dysfunction even in preserved systolic function.

P859

Cost-effectiveness of 64-multislice slice coronary CT angiography at emergency ward compared to standard management in low risk patients with acute chest pain

D. Perez De Arenaza[1], M Falconi[1], F Abramzon[1], P Pollono[1], A Fernandez[1], P Oberti[1], L Grinfeld[1], R Garcia'Monaco[1], J Krauss[1], A Cagide[1]. [1]*Hospital Italiano Buenos Aires*

Background: Recently, multislice slice coronary CT angiography (MSCT) have been shown to accurately rule out significant coronary disease (CAD) in low risk chest pain patients at the emergency department (ED) compared to standard diagnostic management. However, the overall cost-effectiveness of this strategy is unknown. **Aims:** The aim of this analysis was to assess if a strategy using a 64 row detector MSCT compared to the standard management in a chest pain unit (CPU) is cost effective to diagnose CAD in patient with chest pain in the ED. **Methods:** We perform a complete economic evaluation using decision analytic modelling to assess if using a 64 row detector MSCT in the ED was cost effective to diagnose CAD compared to standard management in a chest pain unit (CPU) in patients presenting with chest pain without elevated troponin levels and ECG changes. Data for the standard management was obtained from our prospective registry (ITALSIA) of patients hospitalised with acute coronary syndromes (ACS) and clinical outcomes, resource use, and costs were assessed over a 1-year follow-up period. Coronary artery disease was defined as patients who had acute chest pain and significant lesions in the coronary angiogram, positive functional test, required revascularization or had death or myocardial infarction. Prevalence of CAD was 32% and average length of stay in CPU was 2.95 ± 2.71 days. Data for the MSCT strategy was obtained from literature. The sensitivity and specificity of MSCT for diagnosing significant CAD was 96% and 95%, respectively. It was estimated that 20% of the MSCT will not be diagnostic and these patient would undergo an invasive coronary angiogram. The local cost of MSCT scan was $670, CCU hospital stay $400 per day, coronary angiogram $450, treadmill exercise test $24, and stress dobutamine echocardiogram $140. The analysis perspective was the payer. **Results:** Between July 2004 and December 2006, 1372 patients were admitted for chest pain and suspected ACS and including the ITALSIA registry. Of them 217 patients were low risk (negative ECG and biomarkers) and admitted at CPU. These patients underwent coronary angiogram (33%), stress test (31%) or were discharge home (36%). Over the 1-year follow-up period, 3 patients died, two patients were re-hospitalised for ACS, 33 (15%) had coronary angioplasty and 22 (11%) had bypass surgery. The average cost per CAD diagnosis was 2734 dollars in the MSCT strategy compared to 4061 dollars in the standard management strategy. MSCT dominated the standard strategy and the rate of hospitalization was reduced by 68%. In a sensitivity analysis, varying the cost of MSCT scan from 400 dollars to 1000 dollars did not modify these results **Conclusions:** In this model, MSCT strategy was cost-saving compared to a standard strategy with CPU in low risk patients with chest pain. MSCT may be useful for diagnosing CAD in low risk patients with acute chest pain and reducing unnecessary hospitalizations and healthcare system costs.

P860

Correlation of heart rate with cardiovascular risk factors

A. Kalvelis[1], G. Bahs[1], I. Stukena[1], A. Lejnieks[1], U. Teibe[1]. [1]*Riga Stradins University*

Background Large scale epidemiological studies have proved that increased heart rate (HR) affects total and cardiovascular mortality and can be considered as being an independent risk factor regarding pessimistic prognosis. However, significance of HR among cardiovascular risk factors has been still underestimated. **Methods** We measured HR in 773 outpatients (average

age 55,6±14,4 years, 73% women) by monitoring pulse rate at peace for 1 minute and assessed its correlation with other cardiovascular risk factors (RFs). We considered patients' age, sex, waist circumference (WC), body-mass index (BMI), systolic and diastolic blood pressure (SBP, DBP), as well as levels of glucose, C-reactive protein (CRP), total cholesterol (TC), high-density lipoprotein cholesterol, low-density lipoprotein cholesterol (HDLC, LDLC) and triglycerides. We assessed correlation among these indicators by using Pearson's correlation coefficient (PCC). **Results** Average HR of the monitored group was 73,81±8,1 times per minute, and there was no reliable difference between men and women (74,38±9,3 and 73,58±7,5 respectively). We found direct correlation of heart rate with age (PCC= 0,09; p=0,012), WC (PCC= 0,077; p=0,032), SBP (PCC= 0,18; p=0,000) and DBP (PCC= 0,161; p= 0,000). Analysis of HR correlation with lipids showed that only triglycerides have a reliable correlation with HR (PCC=0,121, p=0,001). Analysis of correlation per sex showed that HR correlates with SBP and DBP in both sexes, but only in women there is a correlation between HR and age. In women over 65 HR was higher compared to that of women below 65. There was no difference between these age groups in men. Correlation of HR with TC, HDLC and LDLC was similar in both men and women, however, only in men there was a positive correlation between HR and triglycerides (PCC=0,217; p=0,001) **Conclusion.** There is a positive correlation of HR with age, WC, SBP and DBP in both sexes of the monitored group. Besides, only in women HR correlates with age, but in men - with triglycerides.

P862

Human aorta transcriptome profiles of different atherosclerotic lesions types.

A. Timofeeva[1], L. Goryunova[1], G. Khaspekov[1], O. Ilyinskaya[1], V. Sirotkin[1], E. Tararak[1], R. Beabealashvilli[1]. [1]*RUSSIAN CARDIOLOGY RESEARCH COMPLEX*

Atherosclerosis and its clinical manifestation – coronary artery disease, cerebral artery disease and peripheral artery disease – are the most common cause of death in the most countries of the world. To develop new treatment strategies more information about pathophysiological mechanisms underlying atherosclerosis is needed. Since the basic processes of atherogenesis occur in the intimal layer of the vessel and the degree of vascular remodeling varies depending on the type of atherosclerotic lesion, we applied cDNA microarrays to analyze transcriptomes of human abdominal aorta intima with different atherosclerotic lesions: fatty streak, fibroatheroma, fibrous plaque and complicated fibroatheroma in comparison with adjacent normal aortic intima sites and intima samples from nonatherosclerotic aortas. The microarray data were verified by quantitative RT-PCR. Seventeen up- and 13 down-regulated genes were found in atherosclerotic aorta compared with normal vessel. These genes are implicated in lipid methabolism/transport, cell adgesion, migration and proliferation, regulation of cell signaling, immune reactions, transcription regulation, modulation of actin cytoskeleton, three-dimentional organization of the extracellular matrix, and regulation of SMC function. Among them those reproducibly associated with atherosclerosis in the literature (SPP1, ACP5, LIPA, MSR1, CXCR4, VEGF, PLTP, CTSB, CTSD, PLTP, CD14, HSPB1, CAV1, and MYH11) and those encoding proteins whose function is consistent with a role in atherogenesis but the proteins have not been previously linked to atherosclerosis in humans (FPRL2, CD37, CD53, RGS1, LCP1, SPI1, CTSA, EPAS1, FHL1, GEM, RHOB, SPARCL1, NPR1, ITGA8, PLN, and COL14A1). The dynamic changes in individual mRNA levels during progression of the disease were observed. The major changes in the expression of up-regulated genes occurred at the fatty streak stage with peaks at the fibroatheroma stage without further changes in at the fibrous plaque and complicated fibroatheroma stages. However, at the stage of complicated fibroatheroma the expression of genes which demonstrated reduced mRNA level at the earlier stages of the disease decreases to a greater extent.

P863

The use of contrast in real-time and in bolus for quantification and qualification of myocardial flow: comparison with Gated-SPECT and angiography.

A. Camarozano[1], A Soares[1], D Bastos[1], A Cantisano[1], C Oliveira[1], E Sanson[1], LH Weitzel[2]. [1]*Hospital Barra D' or* [2]*Rede Labs D' or*

Purpose: The echocardiography contrast in the myocardium may be quantified through volume and velocity curves in perfusion assessment. **Aims:** to evaluate which parameters of quantitative myocardial perfusion are used more frequently and allow for a better reproducibility; and to correlate the quantitative data of the echo with catheterism(CAT), the qualitative analysis of perfusion(QAP) and scintigraphy results, considering the use of contrast bolus. **Methods:** scintigraphy(S) and EP were performed simultaneously to study 32 patients with suspected or confirmed CAD. We used HDI-5000 with real-time perfusion and PESDA/Definity as contrast bolus. Protocol was 0.56mg/kg of dipiridamole. Scintigraphy imaging was obtained 30−60 minutes after radioisotope injection with Tc-99m sestamibi or tetrofosmin. The parameters analyzed at rest and after dipiridamole(DIP) were: A(myocardial volume), b(velocity), and the product Axb. The region of interest(ROI) was selected off-line for the videointensity curve. Two observers performed qualitative analysis(QA) of echo images. **Results:** Mean age was 62y. Values of A were easier to obtain than b and A yielded a greater curve at rest after DIP in each ROI($p< 0.05$). The same did not occur with b and Axb which seemed to be more stable. When compared to S, A correlated with a reduction of values after DIP(9.2) associated with an altered S, whereas higher values of A(15.2) were found in normal S, especially related to ROI4chambers(p=0.019). There was good concurrence between S and QAP(k=0.59), S and CAT(k=0.61), and mainly between QAP and CAT(k=1). **Conclusion:** quantitative assessment of myocardial perfusion with contrast bolus is reliable and A seems to be more sensitive than b. Perfusion by qualitative method is simpler and offers high concurrence with golden pattern.

P864

MODULATION OF MONOCROTALINE INDUCED COR PULMONALE BY GRAPE JUICE

A. Belló-Klein[1], A.R. Lenhenbauer-Lüdke, R. Caron-Lienert, F. Mosele, T.R. Fernandes, W. Partata, M.F. Ribeiro.

Introduction: Monocrotaline (MCT) has been used for the development of Cor pulmonale to study pulmonary hypertension and selective right ventricular (RV) hypertrophy. Cor pulmonale is associated with oxidative stress and nitric oxide (NO) impairment. The ingestion of purple grape juice (PGJ) has been related to chronic diseases protection. **Objective:** The aim of this study was to evaluate PGJ effects on morphometric, hemodynamic, and oxidative stress parameters, as well as endothelial NO synthase (eNOS) expression in lung in this model. **Methods:** Male Wistar rats were treated during 6 weeks since weaning. It was administered MCT (60 mg/kg body weight i.p.) or saline in the third week of the experimental protocol; water or PGJ (10mL/kg/day) were administered throughout the protocol by gavage. Experimental groups (n=6/group): Water Control (WC) – water and saline injection, Water Monocrotaline (WM) – water and MCT injection, Juice Control (JC) – PGJ and saline, and Juice Monocrotaline (JM) – PGJ and MCT. Animals were assessed hemodynamically 21 days after injections to recording right ventricular end diastolic pressure (RVEDP), right ventricular systolic pressure (RVSP) and mean arterial pressure. After cervical dislocation, heart and lung morphometry was performed. Antioxidant enzyme activities, lipid peroxidation (LPO) by chemiluminescense (CL) and western blot analysis of eNOS expression were measured in lung homogenates. **Results:** It was observed an increase in RV mass (35%) in both WM and JM groups, comparing to their controls ($P<0.05$). It was demonstrated significant lung congestion, WM 70% and JM 40% greater than WC and JC, respectively. Lung congestion decreased 15% in JM when compared to WM. There was RV dysfunction characterized by RVEDP (14%) and RVSP (40%) elevation in WM as compared to WC, but less dysfunction was observed in JM (6% and 27%, respectively) as compared to WM ($P<0.05$). Lung expression of eNOS was about 20% lower in WM compared to all other groups, and PGJ reduced this effect in MCT rats. eNOS levels were negatively correlated with superoxide dismutase (SOD) and CL ($r=-0.85$, $P<0.0002$ and $r=-0.80$, $P<0.001$, respectively). SOD activity was enhanced only in WM ($P<0.05$), while both juice groups have its activity decreased when compared to water groups. MCT improved catalase (CAT) in WM group (42%). There was a significant augment in CAT (48%) in both juice groups comparing to WC. LPO was significantly enhanced (11%) in WM group compared to WC ($P<0.05$). PGJ administration resulted in reduced LPO, 70% and 63%, comparing JC and JM to WC and WM, respectively ($P<0.05$). **Conclusion:** The administration of PGJ promoted a reduction in pulmonary congestion and improvement of cardiac function, whereas did not prevent RV hypertrophy in MCT-treated rats. Those effects can be associated to a better NO bioavailabity and less oxidative stress in pulmonary tissue, which could contribute to reduce RV afterload.

P865

Cost Effectiveness Analysis of Carotid Doppler Ultrasound Examinations in Patients with Significant Left Main Coronary Artery Stenosis

A. L. V. Oliveira[1], M. S. Bittencourt[1], A. C. Pereira[1], L. A. M. Cesar[1], L. H. W. Gowdak. [1]*Heart Institute (InCor) - University of Sao Paulo Medical School*

Background: Non invasive bilateral carotid artery screening in patients with significant left main coronary artery stenosis has been proposed as an approach to reduce de number of coronary artery bypass graft surgery and long term stroke events. To date, no study has determined the cost effectiveness of this screening procedure. Thus, we studied the prevalence, number needed to diagnose and cost effectiveness of this carotid Doppler ultrasound evaluation of patients with significant left main coronary artery stenosis. **Methods:** We selected patients with significant (higher than 50% stenosis) left main coronary artery disease who were included in the coronary artery bypass waiting list at our institution. All patients had stable coronary artery disease. All patients who underwent carotid artery Doppler ultrasound investigation in the out-patient clinic before admission for CABG surgery, as it has been proposed in the AHA/ACC guidelines for CABG surgery, were included. According to the Doppler evaluation patients have been classified as without significant carotid artery disease (< 50% stenosis); significant non critical carotid artery stenosis (50 – 70%) and critical carotid artery stenosis (> 70% stenosis of at least one carotid artery). We then analyzed de number needed to diagnose and the cost per diagnosed patient with the proposed screening. We used the 2002 Medicare cost of US$ 190 for each diagnostic carotid Doppler ultrasound examination. **Results:** 93 patients with significant left main coronary artery disease underwent carotid ultrasound examination. 80 had no significant carotid artery lesions. 10 patients had significant non critical unilateral lesions. 3 patients presented with critical carotid artery stenosis, one of them with bilateral critical carotid artery stenosis. The number needed to diagnose (NND) a significant carotid artery lesion was 7.1, while the NND for a critical carotid artery stenosis was 31. The cost per diagnose for them was US$ 1360 and US$ 5890 respectively. **Conclusions:** Although the NND a significant carotid artery lesion was very low, patients with non critical carotid artery stenosis, when asymptomatic, receive the same medical treatment as patients with stable coronary artery disease, and are not candidates for interventions. Thus, only patients with critical carotid artery disease might benefit from interventions. For this group of patients, the screening cost to diagnose a single critical carotid artery stenosis is US$ 5890.

P866

99 Tc-SESTAMIBI DIPYRIDAMOLE MYOCARDIAL PERFUSION SINGLE-PROTON EMISSION TOMOGRAPHY AND CORONARY COMPUTED TOMOGRAPHY ANGIOGRAPHY SCANNING IN DETECTION OF ALLOGRAFT CORONARY ARTERY DISEASE AFTER HEART TRANSPLANTATION

A. Tangari[1], G.S. Fernandes[2], C.A.M. Cattani[3], J.P. Silva[4], J.C. Brigante[5], L. Fonseca[6], J.A. Bottega[7].

Introduction The detection of allograft coronary artery disease (CAD) after heart transplantation due to the immunosuppressive theraphy is a clinical challenge and ussualy requires serial

coronary angiograms. OBJECTIVE The aim of this study was to assess the clinical value of non-invasive imaging for detection of cardiac allograft vasculopathy. **Material and Methods** The six patients with late orthotopic or heterotopic heart transplantation without clinical or histologic evidence pf rejection underwent ^{99}Tc-SESTAMIBI dipyridamole myocardial perfusion single-photon emission tomography (MPI) and coronary computed tomography angiography scanning (CT). MPI and CT showed CAD of the one patient's heart and were normal at the donor heart. **Results** The perfusion of the five patients remaining with orthotopic heart transplantation was normal while two patients revealed small coronary calcification at the CT. These results suggest that combining use of non-invasive imaging (MPI and CT) allows the adequated clinical control for CD in patients with late heart transplantation mainly at the heteretopic transplant due to hard realization of the coronary angiogram in these patients.

P867

Predictors of mortality from myocardial perfusion Gated-SPECT in patients without previous myocardial infarction

P. Pujol[1], G. Cuberas[1], G. De León[1], R. Falú[1], S. Aguedé-Bruix[1], J. Castell-Conesa[1], J. Candell-Riera[1]. [1]*HOSPITAL UNIVERSITARI VALL D'HEBRÓN*

Objective The aim of this study was to establish the prognostic value for all cause mortality of stress myocardial perfusion Gated SPECT in a large series of patients without previously known myocardial infarction. **Method** We retrospectively identified 6171 consecutive Gated-SPECT studies with either exercise or pharmacological stress between January 1997 and December 2004, documented and matched with Catalonia's death registry between 1997 and 2005 (all cause mortality). We excluded patients with previously known myocardial infarction (2315), previous revascularization (1667), left bundle branch block (492), valvulopathies (251), other conditions associated with poor prognosis due to non-cardiac disease (249), myocardiopathies (242), pacemaker (54) and congenital cardiopathies (35). The final study population consisted in 2072 studies. Minimum 1 year of follow-up. All patients had a standard exercise test (1425), pharmacological test (226) or combined (367) using one day protocol with technetium compounds. **Results** We analyzed 2072 studies, 58% men, mean age 63.72 ± 10 (range 20–89) years. Baseline characteristics: 1176 (56.75%) hypertension, 963 (46.47%) hypercholesterolemia, 777 (37.5%) smoking and 463 (22.3%) diabetes. During follow up of 3.41 ± 1.5 (range 1–8.47) years 6.6% mortality was observed Exercise and nuclear variables are presented in next table. ***INSERT TABLE HERE*** **Conclusion** In a population without known myocardial infarction angina, scintigraphic criteria of ischemia and necrosis, left ventricular volume, and ejection fraction were variables of prognosis value for all cause of mortality in the stress myocardial perfusion Gated-SPECT studies.

P868

Valsalva maneuver predicts exercise left ventricular outflow tract obstruction in patients with hypertrophic cardiomiopathy

F. Vaisbuj[1], **A. Fernandez**[2], JH Casabe[3], M Bustamante Labarta[4], G Bozovich[5], F Landeta[6], R Peidro[7], G Fava[8], E Guevara[9]. [1]*Fundación Favaloro* [2]*Fundación Favaloro* [3]*Fundación Favaloro* [4]*Fundación Favaloro* [5]*Fundación Favaloro* [6]*Fundación Favaloro* [7]*Fundación Favaloro* [8]*Fundación Favaloro* [9]*Fundación Favaloro*

Background: Left ventricular outflow tract (LVOT) obstruction (gradient at rest >30 mmHg) has been shown to be an independent predictor of worse prognosis in patients (pts) with obstructive hypertrophic cardiomiopathy (HCM). Exercise can expose latent obstruction in a significant proportion of patients. However, no clear data exists about the contribution of Valsalva maneuver in identifying those patients. **Objective:** The aim of the study was to evaluate gradients behavior after Valsalva maneuver and post-exercise stress in a cohort of patients with HCM. **Methods:** We evaluated consecutively 81 pts (46 male; age 52±18 years; IVSD 18.4±11.5mm; LVPWD 8.4±5.8mm; LVOT gradient at rest: 27.6±34.7 mmHg; 71.6% under medical treatment). LVOT gradients were measured at rest, after pressor phase of Valsalva maneuver, and immediately after maximal stress exercise test on a modified Naughton protocol. Of those, we analyzed 47 patients with reliable post Valsalva measures, calculating sensitivity and specificity for predicting exercise obstruction (LVOT > 30mmHg and > 50 mmHg). **Results:**

Valsalva >15mmHg	**exe >30mmHg**	**exe <30mmHg**			
yes	9	4	13	**sensitivity**	***64.3%***
no	5	29	34	**specificity**	***87.9%***
	14	33	47		

Valsalva >15mmHg	**exe >50mmHg**	**exe <50mmHg**			
yes	7	6	13	**sensitivity**	***70%***
no	3	31	34	**specificity**	***83.8%***
	10	37	47		

Valsalva >17mmHg	*exe >30mmHg*	*exer <30mmHg*			
yes	8	4	12	**sensitivity**	***61.5%***
no	5	30	35	**specificity**	***88.2%***
	13	34	47		

Valsalva >17mmHg	*exe >50mmHg*	*exe <50mmHg*			
yes	6	6	12	**sensitivity**	***66.7%***
no	3	32	35	**specificity**	***84.2%***
	9	38	47		

Valsalva >20mmHg	*exer >30mmHg*	*exer <30mmHg*			
yes	8	1	9	**sensitivity**	***61.5%***
no	5	33	38	**specificity**	***97.1%***
	13	34	47		

Valsalva >20mmHg	*exer >50mmHg*	*exer <50mmHg*			
yes	6	3	9	**sensitivity**	***66.7%***
no	3	35	38	**specificity**	***92.1%***
	9	38	47		

Valsalva >22mmHg	*exer >30mmHg*	*exer <30mmHg*			
yes	7	0	7	**sensitivity**	***53.8%***
no	6	34	40	**specificity**	***100%***
	13	34	47		

Valsalva >22mmHg	*exer >50mmHg*	*exer <50mmHg*			
yes	6	1	7	**sensitivity**	***66.7%***
no	3	37	40	**specificity**	***97.4%***
	9	38	47		

Conclusions: There is a strong association between post Valsalva LVOT gradient (specially when it is >15 mmHg) and exercise obstruction, even predicting significant obstruction (> 50 mmHg) with reasonable specificity in patients with HCM.

P869

Cytokine network genes are associated with susceptibility to essential hypertension in Tatars from Bashkortostan (Russia)

Y. R. Timasheva[1], T. R. Nasibullin[1], A. N. Zakirova[2], O. E. Mustafina[1]. [1]*Institute of biochemistry and genetics Ufa Science Centre RAS* [2]*Bashkir State Medical University, Department of cardiology*

Essential hypertension (EH) is a common disease with fatal clinical complications. Epidemiological and family studies have confirmed the role of genetic predisposition in its development. Hypertensive patients have been shown to have an altered profile of pro- and anti-inflammatory cytokines. Cytokines are the major regulators of cellular interactions in vivo. Human endothelium is able to produce different pro- and anti-inflammatory cytokines. Inflammation plays a pivotal role the pathogenesis of cardiovascular disease. Inflammatory expression pattern of endothelium is the main substrate underlying atherosclerotic lesions of vascular walls. Therefore, we aimed to reveal the link between certain cytokines genes polymorphisms and EH. We investigated the relationship of seven common single-nucleotide polymorphisms (SNPs) in tumor necrosis factor-alpha (TNF-alpha), interleukin (IL)-1beta, IL-1 receptor antagonist (IL1RN), IL-10, IL-12B, IL-6 and lymphotoxin alpha (LTA) genes with EH in 362 hypertensive patients and 244 healthy subjects from Tatar ethnic group (Bashkortostan, Russia). We have found that *IL10 -627 *C/*C* genotype frequency was decreased risk in the group of hypertensive patients (OR=0.64, P=0.035). Carriers of *IL12B 1159 *A/*A* genotype had lower risk of EH (OR=0.51, P=0.006, CI: 0.32–0.82). *IL1RN*2* allele was associated with early onset of hypertension (OR=3.27, CI: 1.65–6.49). Secondary analysis also revealed the association of some genotypes with certain clinical phenotypes of hypertension. Our study has shown the association between cytokines genes polymorphisms and EH in Tatar ethnic group from Bashkortostan, Russia. *IL10–627 *C/*C* genotype and *IL12B 1159 *A/*A* genotype were found to be protective against hypertension. In conclusion, our results suggest a role for cytokine genes in the pathogenesis of cardiovascular disease, but further investigation is necessary and our findings should be proved in other ethnic groups.

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CARDIOVASCULAR REHABILTACION POST CARDIAC TRANSPLANTATION

G. Brion[1], R. Peidro[1], A. Angelino[1], D. Motta[1], E. Navia[1], P. Diaz Uberti[1], F. Bethencourt[1], M. Diez[1], L. Favaloro[1], R. Favaloro[1]. [1]*Favaloro Foundation*

Background: despite a successful cardiac transplantation (CTx) procedure, exercise capacity remains significant decreased in this population, with peak oxygen uptake values about 40 – 60% of predict values. **Objective:** to determine the effect of exercise training on exercise capacity in patients post CTx. **Method:** observational study, consecutive patients post CTx that completed a 12 week cardiovascular rehabilitation program (CRP) were included. Maximum treadmill exercise testing (ET) with Bruce protocol and six minute walking test (6MWT) were performed before and after 12 weeks of training. CRP consisted in supervised aerobic interval training (treadmill and cycle) 60 minutes 3 times per week, at 60 – 80% of maximum exercise capacity (METs), 3 – 5 of Borg scale, and resistive training at 30 – 50% of 1MR test. **Statistics:** paired T test. **Results:** N= 41 p, 28 (68.3%) male, aged 45.88±16.72, IMC 23.88±4.74, hypertension 16 (39%), hypercholesterolemia 17 (41.5%) diabetes 6 (14.6%), smoking 16 (39%), idiopathic cardiomyopathy 12 (29.3%), ischemic cardiomyopathy 12 (29.3%) others (valvulopathies, congenital, post viral, post chemotherapy, peripartum, hypertrophic cardiomiopathy) 41.4%; emergency CTx procedure 16 (39%), donor age 27.64±12.14 years. There was a significant increase in exercise capacity (METS): 6.49±2.94 before vs 9.36±3.61 after 12 weeks of training (p 0.02), and in the 6MWT distance (m): 401.05±82.31 before vs 512.40±70.19 after (p 0.005). **Conclusion:** the exercise training program showed a significant increase in exercise capacity in patients with cardiac transplantation due to different etiology.

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NUTRITIONAL PROFILE OF PATIENTS IN THE WAITING LIST FOR HEART TRANSPLANTATION

S. Bordignon[1], P. Cordeiro[1], P. Borges[1], V. Porto[1], S. Fonseca[1], E. Horowitz[1], L. Lima[1], J. Vieira[1], P. Ruschel[1], I. Nesralla[1]. [1]*Instituto de Cardiologia do Rio Grande do Sul/FUC*

Introduction: Nutrition has an important role in cardiac patients on the transplant waiting list. The nutritional assistance provides not only better health but also a better quality of life. **Objectives:** To evaluate the nutritional profile of patients in the waiting list for cardiac transplantation. **Methods:** Retrospective transversal study. Medical charts from all patients that had a nutritional evaluation pre transplant between 2002 and 2007 were reviewed. The values for all nutritional parameters were computed as mean ± 1 SD. **Results:** 69 medical charts were analyzed, 17 were excluded for being incomplete. The analysis was performed in 52 charts. There were 38, 5% females (n=20). The mean age was 44, 6 ± 12, 96 years old. Nutritional parameters showed a mean weight of 73,76 ± 16,5 Kg; mean height of 1,67 ± 0,1 meters; mean body mass index (BMI) 26,33 ± 5,66 kg/m^2, mean total cholesterol of 105,3±39,53 mg/d; mean HDL cholesterol 43,44±12,13 mg/dL; mean LDL cholesterol 105,3±39,53 mg/dL; mean triglycerides 110,1±45,12 mg/dL; mean fasting glucose 103,71±32,6 mg/dL; mean albumin 4,06±1,19 g/dL; mean hematocrit 40,06±4,32% and mean hemoglobin 13,07±1,42g/dL **Conclusions:** Although most patients were overweight, they were not at risk for a heart transplantation, Our study demonstrates the importance of an early nutritional evaluation with the purpose of preservation of the nutritional status of these patients and planning an adequate follow up during the waiting period. Unnourishment worsens the prognosis and quality of life in these patients.

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Pulse Oximetrie in Six Minutes Walk Test Associated With Exercise Tolerance in Outpatients With Chronic Heart Failure

S. Chermont[1–2], S Guilhon[3], M P Quintão[1–2], M De Rossi[1], P Teixeira[1], S Lindemberg[1–2], S Bernardez[1], D A Bastos[3], P P Soares[1], E T Mesquita[1]. *[1]FEDERAL FLUMINENSE UNIVERSITY [2]SERRA DOS ORGÃOS UNIVERSITY [3]ALOISIO DE CASTRO CARDIOLOGY INSTITUTE*

Backgrounds: Patients with chronic heart failure (CHF) presents dispnéia, fatigue and exercise intolerance and quality of life. The six minutes walk test (6MWT) is a predictor of morbi-mortality in patients with CHF, and the six minutes walk distance (6MWD) have important prognostic values in CHF. Determinative factors to interrupt the 6MWT are symptoms such as dispnéia, fatigue or both. The pattern of peripheral oxygen saturation (SpO2) associate to these symptoms during the 6MWT is still little studied. **Objective:** To determine the association between SpO2 and exercise intolerance in outpatients with CHF submited to 6MWT. **Patients and Methods:** Following prospective, transversal protocol, 42 patients with CHF, (NYHA II/III), compensated, 22 male and 20 female, age 62±11 years, BMI 26.6±5kg/cm2 and LVEF: 34±9% submitted to 6MWT,. Variables are recorded non invasively: hear rate (HR); sistolic blood pressure, (SBP); diastolic blood pressure (DBP) mean arterial pressure (MAP); respiratory rate (RR) and SpO2 beyond the DP6M and Borg. The SpO2 was registered for the digital pulse oximeter (Onyx, USA) during all the test. For better analysis patients are allocated in 3 groups (G1, 6MWD $<$ 350, G2, 6MWD betwen 350 and 500m, G3 6MWD $>$ 500m) by distance walked. Statistical analysis was performed by t-Student test, and $p < 0,05$ was considered significant **Results:** Variables presented significance, during and/or after the 6MWT: RR (pre, 21±4 bpm vs post. 24 ±5 ipm*). SBP and HR physiologycal response. All patients showed a 406±91m of 6MWD. G1 showed signifcant drop in SpO2 associated to 6MWD (SpO2 at 2min; pre, 96±4 vs post, 93±5%*). G2 showed signifcant drop in SpO2 associated to 6MWD (SpO2 at 4min; pre 97±3% vs post, 94±4%*). and G3 showed signifcant drop associated to 6MWD (SpO2 at 6 min; pre 98±2 vs post, 95±5%*); (* $p < 0,05$). **Conclusion:** Significant falls occurs in the SpO2 in 3 groups at different moments: in 2° minute in the group with 6MWD $<$ 350m, in 4° minute in the group with 6MWD $>$ 350m and to the ending of the 6MWT in the group with 6MWD $>$ 500m, wich suggests an association of the early drop in SpO2 with the minor exercise tolerance group distinguish by 6MWD. An increase in the sample and inclusion of a control protocol is necessary to determine the magnitude of a possible described relation in this study.

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Quantification of saved myocardium after primary angioplasty with myocardial perfusion gated-SPECT. Preliminary results.

P. Pujol[1], G. De León[1], S. Aguadé-Bruix[1], B. García Del Blanco[1], S. Rossi[1], R. Falú[1], J. Figueras[1], J. Castell-Conesa[1], J. Candell-Riera[1]. *[1]HOSPITAL UNIVERSITARI VALL D'HEBRÓN*

Percutaneous Transluminal Coronary Angioplasty (PTCA) y a highly effective technique for treatment of ST elevation Myocardial Infarction (STEMI), since allows an early opening of the culprit coronary vessel. **Objective.** To evaluate the extension of saved myocardium defined by the difference in perfusion score pre and post PTCA. **Methods.** 14 patients with STEMI were prospectively studied (3 women, mean age 64.1±13.7 years). Two gated-SPECT scans with 99mTc-MIBI were performed. The first radionuclide dose was injected before PTCA and the other 16.2 ± 8.5 days after. Initial acquisition was done immediately after cath lab exit in 13 patients (89.8 ± 13 minutes after injection) and 7 hours after admission in Coronary Care Unit in one patient. Automatic Quantitative evaluation of the 17 myocardial segments was made with QPS software (Cedars). Were quantified pre (S-pre) and post (S-post) PTCA scores, the differential score (DS), and extension percentage (% S-pre, % S-post, % DS) in relation to the total amount of Left Ventricle. According to coronary angiography, the culprit vessel were Left Anterior Descending in 9 cases and Right Coronary in 5 cases. **Results.** In 12 patients angiographic success was achieved after PTCA, correlating to a significant difference in pre and post PTCA perfusion scores, with a 24.8±14.1% of the global myocardial amount saved. Ejection fraction pre-PTCA was 39.8 "b 10% and post-PTCA 54.3 "b 12% ($p = 0.0039$). In 2 patients there were no significant differences in SPECT quantification, one with unsuccessful PTCA and the other with extensive Myocardial Infarction. **Conclusions.** Primary PTCA in STEMI saves a large amount of myocardium. Quantification of myocardial perfusion with gated-SPECT can measure precisely the amount of myocardium saved and the improvement in the Ejection Fraction.

	S-pre	S-post	DS	%S-pre	%S-post	%SD
Mean	26,9	9,7	16,7	39,6	14,1	24,8
SD	8,3	9,7	9,5	12,9	14,1	14,1
Minimum	10	0	3	15	0	4
Maximum	38	34	31	56	50	46

P875

Clinical characteristics of pain in men and women admitted to a chest pain unit

MF Larin[1], E Ludueña Clos[1], C Kudrle[1], GM Ferrari[1], **H Avaca[1]**, B Lopez Ledesma[1], M Gingins[1], E Brunel[1], JD Humphreys[1], O Manuale[1]. *[1]Hospital Británico de Buenos Aires - Argentina*

Purpose: To determine if the clinical characteristics of pain in men and women referred to a chest pain unit (CPU) with a negative EKG and normal biological markers are predictive of ischemia on stress echocardiography (S-Echo) prior to discharge; and to further analyze in women if there is an age-related association. **Methods:** A total of 2130 consecutive men and women (p) (mean age 57.5±12 years) who presented to the emergency room with typical, atypical or non-specific chest pain, one or more coronary risk factors, negative EKG (normal or non-diagnostic if compared to a previous EKG) and negative biochemical markers on arrival, were referred to the CPU. During the 12-hour observation period in the CPU, 172 p were admitted because of abnormal EKG changes and/or positive biochemical markers and/or an alternative non-cardiac diagnosis. The remaining cohort of 1958 p had a S-Echo performed prior to discharge to rule out ischemia. Chest pain was classified as typical, atypical or non-specific and S-Echo was considered positive for ischemia if two or more segments presented new wall motion abnormalities. The female subset consisted of 962 subjects (49.1% - mean age 60.1±11 years) which for the purpose of this analysis were divided into three age groups: group 1 less than 50 years old (188 women), group 2 between 50–70 years old (572 women) and group 3 more than 70 years old (202 women). **Results:** Women in the different age groups 1, 2 and 3 presented with typical pain in 32.0%, 37.3% and 32.7%; atypical pain in 50.6%, 48.0% and 51.2%; and non-specific pain in 15.2%, 14.7% and 16.2% (p= ns for all groups). S-Echo was positive in 3.4% of women in group 1, 8.2% in group 2, and 9.9% in group 3 (p= $<$0.05 for group 1 compared to groups 2 and 3). **Conclusion:** The clinical characteristics of pain in subjects admitted to a CPU with a negative EKG and normal biological markers are significantly associated with ischemia on pre-discharge S-Echo in men but not in women. The clinical manifestations of pain in women do not differ significantly between the different age groups, but in younger women the incidence of a positive S-Echo is significantly lower. These findings are consistent with the current concept that coronary heart disease in women presents more frequently with atypical or non-specific pain.

S-ECHO RESULTS IN MEN AND WOMEN

	Typical pain men	Typical pain women	Atypical pain men	Atypical pain women	Non-specific pain men	Non-specific pain women
Negative (1752 p)	29.5%	35.8%	55.3%	50.9%	15.2%	13.3%
Positive (206 p)	44.1%(*)	42.4%(#)	45.0%(#)	42.4%(#)	10.9%(#)	15.2%(#)

(*) p= $<$0.05 ; (#) p= ns.

P876

EFFICACY AND SAFETY OF DRUG ELUTING STENTS FOR THE TREATMENT OF DIFFUSE IN-STENT RESTENOSIS. INFLUENCE OF DIABETES ON LONG-TERM OUTCOME.

G. Schipani[1,6], F. Azzari[1,6], D. Chambre[3,6], A. Fernandez[2,6], E. Torresani[4,6], S. Brieva[1,6], R, Nauwerk[5,6], H. Pomes Iparraguirre[3], C. Barrero[1], J. Leguizamon[1,6]. *[1]BAZTERRICA CLINIC [2]SANTA ISABEL CLINIC [3]FRANCHIN SANATORY [4]MODELO DE QUILMES SANATORY [5]LA FLORIDA SANATORY [6]ARTERY GROUP*

Introduction Diffuse in-stent restenosis (ISR) have a very high recurrence rate (~35–80%) when treated with balloon angioplasty, bare-metal stent implantation or atherectomy. Nowadays, drug eluting stents (DES) are the prefered therapy for the treatment of ISR. However, there is scarce information regarding its performance in diffuse ISR and its relative efficacy in diabetic patients. **Objectives** The aim of this study was to evaluate the efficacy of DES for the treatment of diffuse ISR and to assess the influence of diabetes on long-term outcome. **Material and Methods** From January 2002 to December 2006 we have consecutively evaluated 70 patients (52.9%, n=37 non diabetics and 47.1%, n=33 diabetics) whom underwent elective DES implantation for the treatment of 42 and 38 diffuse ISR lesions respectively. We have evaluated long-term clinical efficacy and safety in each group. **Results** There were no differences in baseline clinical and angiographic characteristics between the two groups (see table), except for a higher incidence of LAD target vessel dilatation in the diabetic group (p=0.03). Procedural success was 100%. At 1 month, the composite incidence of death, AMI or target lesion revascularization was 2.9%, with no differences between groups. The mean follow-up was 12.6 months. Need for target lesion revascularization was 12.7% for the global population, 13.5% for non-diabetics and 6.1% for diabetics (p=ns). At follow-up the composite incidence of death, AMI or target lesion revascularization was 14.3%, 13.5% and 9.1% respectively (log rank p=0.47 for comparison between non-diabetics and diabetics). **Conclusion** Our results suggest DES are safe and effective for the treatment of diffuse ISR. In this \setting, diabetes status do not influence long-term outcome.

BASELINE CLINICAL AND ANGIOGRAPHIC CHARACTERISTICS

	No diabetes	Diabetes		No diabetes	Diabetes
Age (years)	61.8	63.4	Adjunctive atherectomy, % (n)	24.3 (9)	21.2 (7)
Dyslipidemia, % (n)	67.6 (25)	66.7 (22)	Paclitaxel DES, % (n)	57.1 (24)	52.6 (20)
Hypertension, % (n)	62.2 (23)	57.6 (19)	LAD, % (n)	64.3 (27)	39.5 (15)
Current smoker, % (n)	45.9 (17)	27.3 (9)	% stenosis	88.4	87.5
Insulin therapy, % (n)		27.3 (9)	Reference diameter (mm)	2.8	2.7
Renal disease, % (n)	13.5 (5)	27.3 (9)	Mehran type III/IV, % (n)	45.2 (19)	50.0 (19)
Previous CABG, % (n)	13.5 (5)	12.1 (4)	Stenosis length (mm)	20.0	19.1
LV dysfunction, % (n)	16.2 (6)	27.3 (9)	DES length (mm)	31.1	29.5
Multiple vessel PCI, % (n)	51.4 (19)	57.6 (19)	>=2 ISR lesions, % (n)	13.5 (5)	2.7 (1)
IIb-IIIa inhibitors, % (n)	62.2 (23)	81.8 (27)	>=2 DES per lesion, % (n)	11.9 (5)	10.5 (4)

P877

Energetics of ischemia-reperfusion in rat neonatal hearts: differences in Ca homeostasis

A.E. Consolini[1], P. Bonazzola[2]. [1]*Farmacología, Fac. Cs. Exactas-UNLP* [2]*ININCA, Fac. Med. UBA-CONICET*

Ca homeostasis of neonatal hearts and their performance under ischemia-reperfusion (I-R) is different from adults. For evaluating the protection of a high K-low Ca cardioplegic pretreatment (CPG, with 25 mM K-0.5 mM Ca), hearts from neonatal rats (10–12 days old) were perfused at 25°C with CPG or Krebs (C) and exposed to 15 min I-45 min R, while continuously measuring contractile force (F) and total heat release (Ht). After I, F recovered during R more in isometric (87.9±8.1% in C vs. 90±5% in CPG, NS) than in isotonic (62.2±9.2% in C vs. 61±10% in CPG, NS). Then, CPG did not give protection to neonatal rat hearts, contrarily to adults. Ht ($mW.g^{-1}$) was reduced from 11.5±0.8 to 1.1±0.3 by I and increased to 13.0±0.9 (n= 8) at 45 min R. As in adults, CPG reduced Ht to 4.97±0.41 and R recovered it until 12.2±1 (117.9±5.3% of pre-I, n=7). A raise in [Ca]o to 2 mM under CPG (CPG-Ca2) increased F recovery during R until 88.7±10.8% in isotonics and 78.4±6.8% in isometrics (* vs. CPG) and Ht to 13.0±0.4 (92.1±4.3% of prel), suggesting an increase in muscle economy. For studying the mechanisms involved, hearts were pretreated with CPG and: a) caffeine 10 mM: F recovered to 91±7% (NS) in CPG-hearts but to 47.3±15%(*) at the start of R in CPG-Ca2-muscles, while Ht remained in 116.9±1.8% and 93.9±3.3% of prel, respectively; b) 5μM KB-R7943 (KBR, inhibitor of reverse mode of SL-NCX and mitochondrial Ca uniporter, MtCaU): F recovered to 87±9%(*) and Ht to 12.3±0.8 (106.8±3.6%); c) 5 μM KBR + 10 μM clonazepam (Clzp, inhibitor of Mt-NCX): the (+) inotropism of KBR was not modified; d) Ca2+10 mM caffeine+20 μM KBR (NCX non-selective block): F recovery fell to 41.4±10%(*) at the start of R while Ht increased to 7.9±1.2 (*) in CPG and 6.5±1.7 in I (*). Since in adult rat hearts, CPG increased contractility recovery, while both caffeine and KBR strongly decreased it, these results suggest that neonatal hearts have a different Ca homeostasis during I-R. Results suggest that after CPG pretreatment in neonatal hearts: a)the SR store does not participate in F recovery during R, but it does at high [Ca]o (since caffeine reduced F in CPG-Ca2-hearts); b)fiber length increased SR Ca store; c)the MtCaU would uptake a cytosolic Ca fraction during R, which was blocked by KBR; d)the Mt-NCX does not play a role in the (+) effect of KBR; and e)the SL-NCX removes diastolic Ca during CPG-I-R, since 20 μM KBR induced diastolic contracture with increased Ht. (*:p<0.05). Grants X-408 UNLP-2005/08; UBACYT 0023, CONICET PIP-6024/05

P878

Professional Divers with History of Decompression Sickness Have Much More Higher Prevalence of Right to Left Shunt Than in Those without Such Event and Reaveal Favourable Outcome during Mid-term Follow-up after the Transcatheter Closure

J. Fiedler[1], T. Honik[1], K. Linhartová[1], J. Veselka[1]. [1]*Cardiovascular Centre, Department of Cardiology*

Purpose: Both patent foramen ovale (PFO) and atrial septal defect (ASD) have been associated with increased risk of decompression illness (DCS) among scuba divers. The transcatheter closure of PFO/ASD appears as a promising tool to prevent recurrence of DCS events. We sought to determine the prevalence of PFO or ASD in divers with or without history of reported decompression illness. The feasibility of transcatheter permanent closure of the PFO/ASD was assessed as well as frequency of major closure-related complications during mid-term follow up. **Methods:** A total of 27 consecutive professional divers with a history of at least one DCS event (group A) and 27 divers without history of DCS event (group B) were recruited to undergo transesophageal echocardiography with saline contrast injection. We investigated the incidence of right-to-left shunt via PFO and DSS during quiet breathing and after performing Valsalva maneuvre. In group A: Patients with presence of PFO or ASD II type were considered as candidates for percutaneous closure using the Amplatzer occluder. Recurrence of DCS, atrial fibrillation, infective endocarditis, trombotic events or bleeding complications was recorded at 1 and 6 month of follow up. **Results:** We detected PFO in 19 subjects (70.3%) and ASD II. type in 2 (7.4%) in group A (one coexistence of PFO and discrete DSS was observed). Rest right-to-left shunt was present in 4 divers, all among those with PFO. In group B in only 5 subjects (18.5%) PFO was found (one even in rest). 7 subjects underwent successfully percutaneous closure. At follow-up visit 1 and 6 month after intervention no recorded complications were observed. **Conclusions:** We observed significantly higher incidence of resting as well as provoked right-to-left shunt among divers suffering DCS in the past. Percutaneous closure of PFO/ASD appears to be safe, reliable and effective procedure, at least in terms of mid-term period.

P879

Sub-clinical miocarditis due to Dengue infection

J. Galeano[1], J Ortellado[1], M Paniagua[1], I Lovera[1], C Rodriguez[1]. [1]*Instituto Nacional de Prevención Cardiovascular (INPCARD)*

Introduction: In the last few years the number of Dengue infections cases has significantly increased in Paraguay, not only in number but also in severity. This year several fatal cases have been reported, mostly related to hemorrhagic manifestation, dengue shock and some cases ascribed to multiorganic failure. The cardiac involvement could play an important role in those events. However, little is known about the incidence of myocardial damage during dengue infections. **Objective:** The purpose of our study was to evaluate whether the myocardium is affected or not during Dengue infections. **Method:** We prospectively included all patients who came to our center (Instituto Nacional de Prevención Cardiovascular-INPCARD) with clinical manifestation of dengue infection (April to May 2007), and were between the 7th and 14th day of episode onset. Twenty six patients were enrolled and underwent clinical evaluation, blood testing including platelet counting and serology for dengue: IgG e IgM. Patients with positive IgM underwent further evaluation with 1) Quantitative Troponin I measurement, 2) Twelve leads basal electrocardiogram, 3) M mode and 2 dimensional echocardiography. The non invasive tests were performed by operators unaware of the results of laboratory testing. The results are expressed in total numbers, percentage, medium and standard deviation where correspond. The software EPI INFO was used for the statistical analysis. **Results:** Of the initially 26 included patients, 18 had IgM positive for dengue. Among them, 6 patients (33,3%) showed elevated (>=1.0 ng/dl) Troponin I values (3.1±1.7 ng/dl). None of them presented significant variation of the clinical parameters, heart rate: 76±11 BPM; systolic blood pressure (110±10mmHg), electrocardiogram (PR interval: 153±11mseg) or echocardiogram (FE: 65±3%). **Conclusion:** An important proportion of patients with acute dengue infection develop myocarditis, without significant clinical, electrocardiographic or echocardiographic manifestation, only evidenced by the increased levels of Troponin I. The clinical implications of these findings should be addressed in long term follow up studies.

P880

Procalcitonin is a marker of infection after surgery for valvular heart disease in a predominantly rheumatic population.

G. Spina[1], F. Tarasoutchi[1], L.F. Moreira[1], R>O. Sampaio[1], F. Bertanha[1], V.M. Jonke[1], C. Strunz[1], M. Grinberg[1]. [1]*Heart Institute (InCor), Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo*

Background- The systemic inflamatory response(SIRS) that ensues after cardiac surgery (CS) makes the diagnosis of post-operative infections (POI) difficult. In valvular heart disease (VHD) patients this diagnosis is even more critical becouse of the possibility of early endocarditis. We studied procalcitonin (PCT), a marker that is elevated in bacterial infections but not in SIRS in a population of VHD patisnts of predominant rheumatic etiology. **Methods-** Between 12/2004 and 06/2006, 202 consecutive patients submitted to CS due to VHD, mean age 47±21.6 years, 73% female, 72% of rheumatic etiology, 100% with heart falure functional III/IV.PCT dosages were made at the pre-operative period, 2nd post-operative (PO) day (2PO), 4th PO day (4PO) and 7th PO day (7PO)..C-reactive protein, alpha-1 glicoprotein and erythrocyte sedimentation rate were also measured in all patients, before and after surgery.End-point was the clinical and laboratorial diagnosis of post-operative infection until the 30th PO day (INF). The patients with a infection diagnosis were allocated in group 1, the remaining in group 2. **Results-** 34% of the patients had diagnosis of INF, and were therefore allocated to group 1. Procalcitonin levels were significatly higher in the group 1. Multivariate analysis identified the level of procalcitinin in the 2PO (p=0.006) and cardiopulmonary bypass time (p=0.01) as independent predictors of infection until the 30th PO. The other inflamatory markers had similar levels in both groups. Based on multivariate analysis we built a probability of infection vs procalcitonin level in the 2PO graphic (fig 1). **Conclusion-** Provalcitonin levels in the PO2 are independent predictors of infection in VHD patients.

P881

Gender differences of cardiovascular risk profile in Lithuania

S. Kutkiene[1], Z. Petrulioniene[1.2], J. Badariene[2], V. Dzenkeviciute[1.2]. [1]*Vilnius University Medical faculty* [2]*Vilnius University hospital Santariskiu Klinikos*

Epidemiology, symptoms, and progression of cardiovascular disease are different in women than in men. Typically, women are about 10 years older than men when they develop cardiovascular disease. There is not enough information about CV risk profile differences among men and women in Lithuania. The aim of this study was to assess gender risk profile differences in Lithuanian patients with first acute coronary syndrome (ACS). **Methods:** Data for this cross-sectional study were collected from Vilnius University Hospital Santariskiu Klinikos. The study included 201 subjects (men under 55- year and women under 65- year), with the first ACS. At baseline all conventional risk factors were analyzed. **Results:** The prevalence of CV disease is 2.5 times more often in men, than in women (71.6% vs. 28. 4% p=0.0001). Men with first ACS were younger (47.84 ± 5.74 vs. 56.54 ± 6.85; p=0.0001), were most current smokers (68.0% vs. 14%; p=0.0001). By contrast, women had more often visceral obesity (66.6% vs. 42.3%; p=0.002) and arterial hypertension (66.6% vs. 47.2%; p=0.013). For both genders were no statistically significant differences in distribution of dyslipidemia (82. 8% vs. 82.4%; p=0.12) and diabetes (12.5% vs. 14% p=0.77). **Conclusion:** Our data shows that marked gender differences also exist in Lithuania. Men are more likely to present with acute event and have traditionally been more likely to smoke than women. Key risk factors in women are hypertension, dyslipidemia and obesity.

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Misclassification of Ischaemic Heart Disease Mortality in Brazil

ARN Migowski Rocha Dos Santos[1], BERNARDO Rangel Tura[1], CARLOS Alberto Moreira Magalhães[1], MÁRCIA Cristina C. Macedo Pinheiro[1], MARIA Cristina Kuschnir[1], REGINA Maria Aquino Xavier[1], ROGÉRIO Brant Chaves[1], VITOR Manuel Pereira Azevedo[1]. [1]*National Institute of Cardiology, Rio de Janeiro, Brazil*

Background: There are a number of cardiovascular codes that are imprecise to classify cause of death, they are known as "cardiovascular garbage codes" (CGC). These include heart failure, ventricular dysrhythmias, generalized atherosclerosis and ill-defined descriptions and complications of heart disease. Researchers from World Health Organization (WHO), demonstrated the decrease of percent of deaths due ischaemic heart disease (IHD) in countries with higher percent of deaths due CGC (R-square of 0.92). According to WHO findings, part of the large variation in IHD rates across countries, is consequence of variation in coding practice and other related factors that could increase the IHD deaths miscoded to the CGC. **Objectives:** To confirm

the hypothesis of association between IHD mortality and CGC mortality in the 27 Brazilian states. **Method:** We used linear regression models to explain the variability of percent of cardiovascular deaths due IHD, excluding cerebrovascular diseases, using only the percent of cardiovascular deaths due CGC, also without cerebrovascular diseases. We used the data available on the National Mortality Information System, for the 27 Brazilian states, for both gender, for the 1979–1995 and 1996–2005 period. We constructed one model to each period, because of the use of different classification systems (ICD-9 and ICD-10). The group of CGC was formed by the following ICD-9 and ICD-10 codes: 427.1, 427.4, 427.5, 428, 429.0–429.2, 429.9, 440.9, I47.2, I49.0, I46, I50, I51.4-I51.6, I51.9 and I70.9. **Results:** The CGC deaths were more common in the states of North, Northeast and Central-West regions, the poorest ones. The Pearson product-moment correlation coefficient between the two variables were of −0.77 (ICD-9 data) and of -0.86 (ICD-10), demonstrating a strong negative linear association. The linear model coefficients of -0.76 and of -1.04 were statistically significants. The R-square was of 0.59 in the first model and 0.65 in the second. The residuals analysis did not reveal problems on the model specification, existence of heteroscedastic nor great violation of normality assumption. **Conclusion:** One strong linear negative association exists between the percentage of IHD and the percentage of deaths for CGC. Moreover, the percentage of CGC explains alone great part of the variability of the percentage of deaths due IHD between the Brazilian states. This findings indicate that the IHD burden is underestimated, especially in the poorer states. However, the results were not as expressive as in the WHO's models. The lower variability, of the percents between the Brazilian states and the Brazilian demographic profile, with younger population when compared with countries of the WHO's study, can explain these results, since the prevalence of idiopathic causes of ventricular dysrythmias and heart failure are higher in younger ages, while the prevalence of IHD is lower.

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Relation between patients baseline characteristic and pre-hospital treatment and the occurrence of no-reflow after primary percutaneous intervention in patients with pre-hospital diagnosis by means of ECG teletransmission

L. Malek[1], M Karcz[1], P Bekta[1], M Klopotowski[1], M Skwarek[1], M Dabrowski[1], K Kukula[1], A Witkowski[1], W Ruzyllo[1].

Introduction. The no-reflow phenomenon after primary percutaneous intervention (pPCI) influences patients outcomes. Determination of risk factors for no-reflow could improve a application of preventive strategies. Pre-hospital diagnosis by invasive cardiologist by means of teletransmission enables early administration of antiplatelet and antithrombotic drugs. **Material and methods.** The study population consisted of 129 consecutive patients (93 men; 63.8±11.1 years) with ST-elevation acute myocardial infarction treated with primary PCI between January and May 2005 in a single center. Angiographic no-reflow was diagnosed as a presence of Thrombolysis In Myocardial Infarction (TIMI) grade<3 flow without mechanical obstruction in cineangiograms obtained at completion of the PCI procedure (no-reflow group). Additional prospective data concerning type, timing and doses of antiplatelet and antithrombotic treatment in the pre-hospital phase were collected. **Results.** Angiographic no-reflow was present in 15 patients (11.6%). Univariate analysis of baseline characteristic disclosed that patients from the no-reflow group were older (69.5±10.4 vs. 63±11.0, p<.05), more frequently had a Killip class≥3 on admission (20% vs. 1.75%, p<.001), were more frequently diabetic (41.7% vs. 8.1%, p<.005) and less likely cigarette smokers (27.3% vs. 80.6%, p<.0001). Periprocedural parameters analysis revealed that patients with no-reflow had a significantly longer time from the first medical contact to balloon inflation (162.5±35.9 min vs. 132.3±44.4 min, p<.005). No-reflow group had longer time between aspirin and unfractionated heparin administration to balloon inflation (150.3±36.5 vs. 111.5±46.9, p<.002 and UFH 130.5±30.0 vs. 87.8±50.8, p<.001, respectively). Multivariate analysis showed that independent predictors of no-reflow were: diabetes (OR=9.8 95%CI 1.2–77.3, p<.02), Killip class≥3 on admission (OR=25.4 95%CI 1.2–518, p<.005) and no cigarette smoking (OR=32 95%CI 3.5–297, p<.0001) **Conclusions.** There are several demographic and clinical factors that can be easily collected on admission and that could help in identification of patients at high risk for no-reflow. Surprisingly, neither shorter time to balloon inflation, nor early administration of antiplatelet and antithrombotic agents independently influence the frequency of no-reflow in the studied population.

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A STUDY OF THE PERCEPTION OF THE HEART TRANSPLANTATION PATIENT THROUGH THE FAMILY CARETAKER.

S. Bordignon[1], P. Ruschel[1], L. Lima[1], A. Souza[1], C. Thomas[1], C. Seelig[1], E. Vigueras[1], P. Cordeiro[1], S. Fonseca[1], I. Nesralla[1]. [1]*Instituto de Cardiologia do Rio Grande do Sul/FUC*

A study of the perception of the heart transplantation patient through the family caretaker. According to the Brazilian Transplants Records (2005), the number of interventions/surgeries has increased in the last years, having as reference the amount of 196 transplants realized.. –This article has an objective to study the emotional situation of post transplant through the perception of the family caretaker. In the first stage, it was done a quantitative analysis with a current cohort study through a sample of 20 family caretakers, during a time varying from 3 to 14 years post-transplant (average 4,5), who responded to the questionnaires. The statistical analysis was done on an Excel table, and the SPSS software was used. In the second stage, the material from the interviews was analyzed and 5 of the subjects were selected and analyzed through the analysis content method (Bardin, 1991) The data collected indicate that the family caretaker remained the same since the moment prior to the transplant. (100%). However, it was observed a heavy emotional and affective burden upon only one member of the family (55%), who undertakes the responsibility. In most cases this responsibility is undertaken by the spouse (85%). It has been noted changes in the interpersonal relationship. The categories resulting from the quantitative analysis are: disease and transplant impact, confrontation with the intervention, fantasies and projections about the new organ and about the treatment, changes in the post-transplant (positive and negative), self-perception of the caretaker towards the transplant, impact and emotional demand, adaptability and perception of this person regarding the self-care of the transplanted/ tranplantation patient. Being the transplant surgery something complex, we conclude that it is of extreme importance the commitment of the family caretaker to the transplanted patient, principally, with regard to the post-transplant period.

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SPECT Myocardial Perfusion and Pulmonary Ventilation Perfusion Scintigraphy for Differential Diagnosis between Coronary Artery Disease vs. Pulmonary Embolism

P. Pujol[1], S. Valdivielso[1], G. De León[1], R. Falú[1], S. Aiguadé-Bruix[1], J. Castell-Conesa[1], J Candell-Riera[1]. [1]*HOSPITAL UNIVERSITARI VALL D'HEBRÓN*

Objective. To analyze SPECT Myocardial Perfusion (SPECT) and Pulmonary Scintigraphy (PS) results in patients (p) to whom their physician requests both tests facing a diagnostic doubt between Coronary Artery Disease (CAD) vs. Pulmonary Embolism (PE). **Method.** Both tests were requested in 199 p between 1992 and 2006; 72 p to whom both test were performed in the same hospitalization or within a one-month period were selected (34 males and 38 females). 13 (18,1%) had previous diagnosis of CAD, one (1,4%) had previous PE, and 1 p had both pathologies. **Results.** The motive for tests indication was chest pain in 58,3%, dyspnea in 36,1% and syncope in 5,6%. In 37 p (51,4%) the PS was requested first, in 19 (26,4%) the SPECT and in 16 (22,2%) both concurrently. PS was performed first in 49 p (68,1%) and the SPECT in 23 (31,9%). In 42 p (58,3%) both tests were negative. Final diagnosis after both tests was CAD in 25 p (34,7%) and PE in 5 p (7%). In 12 out of 39 p (31%) without previous CAD to whom PS was done first, the SPECT detected ischemia and/or necrosis. In 4 out of 23 (17,4%) to whom SPECT was carried out first (in 2 cases only rest was done), PE was diagnosed. **Conclusions.** More than half of the cases in which a PS and a SPECT are requested, both tests are negative. In one third of the p the SPECT confirms the diagnosis of CAD and in only 7% of the cases, PS is positive for PE. In front of a diagnostic doubt, PS should be performed first, since in 17,4% of the p with PE, a SPECT was performed inappropriately first, when the PS revealed the diagnosis of PE.

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Impact of insulin resistance and nonalcoholic fatty liver disease on left ventricular diastolic dysfunction in non-obese patients

G. Roytberg[1], O. Sharkhun[1], T. Ushakova[2], D. Sobolev[2], O. Platonova[2]. [1]*Russian State Medical University, Moscow* [2]*JSC Medicina*

Background: Pathophysiological factors that potential contribute to left ventricular diastolic dysfunction (LVDD) are strongly associated with insulin resistance (IR), dyslipidaemia, hyperglycaemia and other metabolic risk factors of CVD. Nonalcoholic fatty liver disease (NAFLD) is the hepatic manifestation of insulin resistance (IR). The aim of the study was to examine the impact of IR and NAFLD on LVDD in non-obese patients. **Materials:** LV function was evaluated by Doppler echocardiography in 111 non-obese patients (BMI<30.0 kg/m^2) aged 40–55 years without evidence of type 2 DM, hypertension, coronary heart disease. The following parameters were assessed by echo Doppler: peak velocities of early (E) and late (A) diastolic filling, E/A ratio, deceleration time (DT). Signs of fatty liver were evaluated by biochemical tests and ultrasound examination. Venous blood was sampled for fasting serum lipids, glucose and insulin. The compared groups (NAFLD, N=48 and controls, N=63) were age- and gender-matched. **Results:** The patients with NAFLD had a significantly higher glucose (5.72±0.07 vs. 5.19±0.08 mmol/L, P<0.001), triglyceride (1.65±0.12 vs. 1.04±0.09 mmol/L, P<0.001), insulin levels (9.93±0.73 vs. 7.51±0.56 μIU/ml, P<0.009) and insulin resistance marker HOMA-IR (2.60±0.21 vs. 1.76±0.15, P=0.002). LV systolic function was similar in both groups. The frequency of LVDD was 69.2% in NAFLD patients vs. 25.4% in controls (p<0.001). The impaired relaxation pattern was evaluated by E/A ratio in 93.8% and pseudonormal pattern - in 6.2% patients. Patients with NAFLD had a lower E (0.87±0.02 vs. 0.99±0.02 m/s, P<0.001), E/A ratio (0.91±0.04 vs. 1.18±0.03 P<0.001) and a higher DT (268.4±8.55 vs. 210.7±8.36 ms, P=0.001). **Conclusion:** Early features of LVDD are strongly associated with NAFLD. There was more than 3-hold higher frequency of LVDD in NAFLD group. NAFLD in the absence of morbid obesity, hypertension, and diabetes seems to be an additional risk factor for LVDD.

DEMOGRAPHIC AND METABOLIC CHARACTERISTICS OF NAFLD AND CONTROL SUBJECTS (MEAN±SEM)

VARIABLE	NAFLD GROUP (N=48)	CONTROLS (N=63)	P
Age (years)	46.2±0.25	45.6±0.56	0.387
Gender (M/F) %	62.5/ 37.5	66.7 / 33.3	0.842
BMI (kg/m^2)	27.8±0.57	26.4±0.53	0.073
Fasting glucose (mmol/L)	5.72±0.07	5.19±0.08	<0.001
Fasting insulin (μIU/mL)	9.93±0.73	7.51±0.56	0.009
HOMA-IR	2.60±0.21	1.76±0.15	0.002
Triglyceride (mmol/L)	1.65±0.12	1.04±0.09	<0.001
HDL-C (mmol/L)	1.32±0.03	1.39±0.04	0.151
E (m/s)	0.87±0.02	0.99±0.02	<0.001
E/A	0.91±0.04	1.18±0.03	<0.001
DT (ms)	268.4±8.55	210.7±8.36	0.001

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Multislice computed tomographic characteristics of coronary artery lesions and pathophysiology insights to Tako-tsubo like left ventricular dysfunction

P. Avellana[1], C. Tajer[1], D. Santos[1], P. Carrascosa[2], A. Deviggiano[2], C. Capuñay[2], A. Pocoví[1], M. De Abreu[1], O. Santaera[1], L. Antonietti[1]. [1]*Alexander Fleming* [2]*Disnóstico Maipú*

Reversible left ventricular dysfunction precipitated by emotional stress has been reported, but the mechanism remains unknown. Multislice computed tomography (MSCT) has recently been applied to patients with acute coronary syndromes, but there are no reports in Tako-tsubo like left ventricular dysfunction mimicking myocardial infarction. Recently Motoyama S (J Am Coll Cardiol 2007;50:319–26) reported the characteristics of plaques associated with ACS: positive vascular remodeling, low plaque density, and spotty calcification. **Objective:** to analyze MSCT of coronary arteries in patients with Tako-tsubo Syndrome. **Methods:**MSCT were performed using 64 row scan.The remodeling index on MSCT was calculated and reported as positive remodeling when the diameter at the plaque site was at least 10% larger than the reference segment. **Results:** Two female patients with typical presentation of Tako-tsubo syndrome were included: both referred long-lasting chest pain after a severe emotional distress (fierce argument in one case and home-fire in the other), typical ECG findings (wide and diffuse T wave evolutive inversion in DI, aVL and precordial leads), left ventricular abnormalities at the echocardiographic evaluation with apical and midventricular diskinesis with normal contractility of the base, small increments in troponin levels and normal CK levels. Apical ballooning reversed to normal ventricular function in less than 7 days in both patients. The first case, a 66 year old woman had many risk factors for (hypertension, dislipidemia and diabetes) and during the first 24 hours of evolution had a complicated course with clinical low output syndrome that required intravenous inotropics, and a moderately severe left ventricular dysfunction. Coronary angiography was normal. Multislice tomography evaluation: at the proximal left anterior descending artery (LAD) a mixed plaque, (small amount of calcium and soft components), with positive remodeling in proximal anterior descending artery, and a 50% calculated reduction in coronary lumen. The second case, a 48 year old woman, reported dislipidemia and was an active smoker. Coronary angiography showed a mild lesion at the LAD artery. Clinical curse was uneventful. Multislice tomography evaluation: Case 2. At proximal LAD artery a mixed calcium-soft plaque, with low density and an interruption compatible with plaque rupture, and positive remodeling. Plaque burden was 50% with a mild reduction in coronary lumen. **Conclusion.** In two typical cases of Tako-tsubo syndrome and nearly normal angiographic coronary arteries, at the MSCT had LAD plaques with findings closely similar to recently reports in acute coronary syndrome complicated lesions. Since this is the first report of MSCT in Tako tsubo Syndrome in a small amount of patients, the findings should be assessed in a greater number. These findings suggest that at least a subgroup of patients with Tako tsubo shared similar pathophysiology to ACS and evolved as an "aborted" extensive anterior myocardial infarction.

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Antihypertensive efficacy of the direct renin inhibitor aliskiren in patients with diabetes, metabolic syndrome or obesity: a pooled analysis of 10 randomized trials

M.R. Weir[1], M.F. Prescott[2], C. Bush[2], V. Arora[2], D.L. Keefe[2]. [1]*Division of Nephrology, University of Maryland School of Medicine, Baltimore, Maryland, USA.* [2]*Novartis Pharmaceuticals Corporation, East Hanover, New Jersey, USA.*

Background: Diabetes, metabolic syndrome and obesity convey excessive cardiovascular risk, but BP control is difficult to achieve in patients with these conditions. We evaluated the impact of diabetes, metabolic syndrome and obesity on the antihypertensive efficacy of the direct renin inhibitor, aliskiren. **Methods:** This pooled analysis of 10 controlled trials in 9503 patients with hypertension (baseline characteristics: mean sitting diastolic BP [msDBP] 98.8mmHg; 56% male; 21% ≥65 years; 81% Caucasian) assessed the effects of aliskiren monotherapy on msDBP and mean sitting systolic BP (msSBP) over 8–12 weeks' treatment in subgroups of patients with type 1 or 2 diabetes, metabolic syndrome (defined using NCEP ATP III criteria) or obesity (BMI ≥30kg/m^2). BP changes were analyzed (intent-to-treat population) by two-way ANCOVA with treatment as factor and baseline BP as covariate. Responder rates (msDBP <90mmHg and/or ≥10mmHg reduction) were analyzed using a logistic regression model with treatment as factor and baseline msDBP as covariate. Safety and tolerability were evaluated in the 5 placebo-controlled trials. **Results:** Aliskiren 150 and 300mg significantly lowered msSBP and msDBP vs placebo in the overall population; similar BP reductions were observed in subgroups of patients with diabetes, metabolic syndrome and obesity (Table). Responder rates were significantly higher than placebo in all patient subgroups for aliskiren 150 and 300mg. Aliskiren was generally well tolerated; overall rates of adverse events (AEs) with aliskiren 150mg (493/1193 patients, 41.3%) and 300mg (616/1617, 38.1%) were similar to placebo (314/781, 40.2%), as were rates of AE-related discontinuations (aliskiren 150mg, 2.6%; aliskiren 300mg, 3.1%; placebo, 3.5%). In the subgroup of patients with diabetes, aliskiren monotherapy was associated with a low rate of serum potassium elevations >5.5mmol/L (2.2%), and elevations in blood urea nitrogen >14.28mmol/L and serum creatinine >176.8μmol/L (both 0.7%); these did not lead to study discontinuations. **Conclusions:** Based on this analysis, aliskiren provides effective BP lowering, high responder rates and is generally well tolerated in patients with hypertension and diabetes, metabolic syndrome or obesity.

		All patients	Patients with diabetes	Patients with metabolic syndrome	Patients with obesity
Placebo	N	776	55	139	275
	SBP	−5.9±0.5	−6.9±1.8	−4.5±1.1	−4.9±0.8
	DBP	−6.2±0.3	−7.8±1.2	−5.5±0.7	−6.1±0.5
	Responder rate, %	40.5	43.6	38.8	38.5
Aliskiren 150mg	N	1180	98	315	434
	SBP	−12.5±0.4***	−13.2±1.4**	−13.9±0.7***	−12.8±0.6***
	DBP	−10.1±0.2***	−10.4±0.9	−10.5±0.5***	−10.0±0.4***
	Responder rate, %	58.9***	62.2*	63.2***	57.6***
Aliskiren 300mg	N	1603	393	357	630
	SBP	−15.2±0.3***	−14.8±0.7***	−15.0±0.7***	−13.9±0.5***
	DBP	−11.8±0.2***	−12.2±0.4**	−11.5±0.4***	−11.1±0.3***
	Responder rate, %	69.6***	74.0***	68.3***	65.9***

Changes from baseline are least-squares mean±SEM *p<0.05, **p<0.01, ***p<0.0001 vs placebo

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Rhythm control strategy is not different of rate control strategy: a long-term follow up cohort study

M. Falconi[1], P. Oberti[1], R. Pizarro[1], A. Arias[1], F. Achilli[1], D. Perez De Arenaza[1], G. Jaimovich[1], S. Quevedo[1], J. Krauss[1], A. Cagide[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction: although randomized controlled trials have shown no benefit of rhythm control (RhC) over rate control (RaC) strategy, we hypothesized that patient selection by the treating physician could result in better evolution of RhC strategy. **Methods:** between June 1999 and June 2001, patients who underwent transesophageal echocardiography and had atrial fibrillation were included in this study. Exclusion criteria were rheumatic valve disease or previous mitral valve surgery. RhC was defined as one or more intents of cardioversion after the inclusion, otherwise, RaC strategy was considered. Treatment strategy was decided by the treating physician. Clinical and echocardiographic variables were registered at inclusion. The final end point was the combination of death, ischemic stroke, severe bleeding or hospitalization for heart failure. All patients gave written informed consent. **Results:** 237 patients were included (RhC 146 patients, 62%; RaC 91 patients, 38%), mean age 72.6±10 years, 56% male. At entry, few patients in RhC strategy had history of previous embolic event (6% vs. 19%, p=0.003) or left atrial diameter (LAD) > 45 mm (61% vs. 74%, p=0.044); there were no other significant differences in basal clinical or echocardiographic variables between groups. Mean follow up was 4.24±2.68 years (range 0.30–8.26 years). Maintenance of sinus rhythm in RhC strategy was 55% at 1 year, 46% at 3 years and 18% at 5 years. In a Cox model analysis, RhC was not associated with better outcome (HR 0.83; CI95% 0.55–1.26; p=0.38). The following variables were independent predictors of the final end point:

Variable	HR	CI95%	p value
Age	1.05	1.02–1.08	<0.001
Female sex	1.94	1.25–3.00	0.003
Left atrial appendage longitude	1.27	1.10–1.47	0.001
Mitral valve prolapse	0.28	0.10–0.75	0.012
LAD>45mm	1.65	1.05–2.58	0.029

Conclusion: in this cohort study, although RhC strategy was decided by the treating physician, it was not associated with better outcome.

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Visceral fat in hypertensive and prehypertensive obese patients

G. Simonyi[1], JR. Bedros[1], M. Medvegy[2], L. Halmy[1]. [1]*5th Dept. of Internal Medicine, Hypertension and Lipid Centre, Kistarcsa, Hungary* [2]*National Health Center, Cardiology, Budapest, Hungary*

Introduction Obesity is risk factor for cardiovascular morbidity and mortality. Visceral adiposity is considered to play a key role in the metabolic syndrome, including hypertension. The central pattern of body fat distribution is considered to play an important role in obesity induced hypertension. The purpose of this study was to evaluate the difference between abdominal fat measured directly by CT in hypertensive and prehypertensive patients. The prehypertension may a precursor of clinical hypertension and consequently of the cardiovascular disease. **Methods and Results** We involved 242 obese patients. The term "prehypertension" was first introduced by the Joint National Committee 7 for systolic blood pressure levels between 120–139 mm Hg or diastolic blood pressure levels between 80–89 mm Hg. Hypertension was defined as having a systolic blood pressure 140 mm Hg, having a diastolic blood pressure 90 mm Hg. We found 180 hypertensive, 62 obese prehypertensive patients. We investigated the serum lipid parameters, we measured the body mass index, waist and hip circumferences, and the total area (TA), total fat area (TFA), visceral fat area (VFA), subcutaneous fat area (SFA) based on the analysis of fat distribution by computed tomography (CT) scans The results of Student-t probe shown in the table. The hypertensive was older, the BMI was higher, the cholesterol and triglyceride level was more elevated, and their CT parameters were higher than in the prehypertensive group. **Conclusion** In this study we found that in hypertensive group were more obese and had more fat accumulation and which were associated higher risk factors.

parameters	Prehypertension n=62			Hypertension n=180			p-value
age, years	35.76	±	12.31	44.80	±	10.63	<0.0001
BMI kg/m^2	33.17	±	4.77	36.65	±	5.93	<0.001
waist circumference (cm)	111.25	±	13.14	120.03	±	12.85	<0.0001
hip circumference (cm)	113.81	±	9.80	118.86	±	13.78	<0.05

parameters	Prehypertension n=62			Hypertension n=180			p-value
cholesterol (mmol/l)	5.18	±	1.39	5.69	±	1.32	<0.05
LDL-cholesterol (mmol/l)	2.39	±	1.12	3.31	±	1.18	N.S
HDL-cholesterol (mmol/l)	1.13	±	0.34	1.06	±	0.32	N.S.
triglicerides (mmol/l)	1.64	±	0.67	2.11	±	0.85	<0.001
blood glucose (mmol/l)	4.18	±	0.79	5.26	±	1.52	<0.0001
TA (cm^2)	860.05	±	210.10	1018.44	±	224.67	<0.0001
VTFA (cm^2)	585.304	±	202.62	715.54	±	193.49	<0.0001
VFA (cm^2)	157.94	±	89.74	234.22	±	102.77	<0.0001
SFA (cm^2)	442.79	±	163.56	478.37	±	234.22	<0.0001

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CARDIOVASCULAR REHABILITATION POST CARDIAC TRANSPLANTATION: FOLLOW UP AND DROP OUT

G. Brion[1], R. Peidro[1], A. Angelino[1], D. Motta[1], E. Navia[1], P. Diaz Uberti[1], M. Diez[1], L. Favaloro[1], R. Favaloro[1]. *[1]Favaloro Foundation*

Background: cardiac transplantation (CTx) is not yet widely available so there is poor information about follow up and drop out in cardiovascular rehabilitation program (CRP). Objectives: to investigate the drop out rate of CRP of patients post CTx. **Method:** observational study, 23 consecutive patients admitted to a CRP were included. The possibility of remaining in CRP was analyzed with Kaplan Meier curves. Drop out predictors were analyzed with Cox regression. **Results:** N = 23 p, aged 43.4 ± 18.5, 16 (69.5% male, hypertension 6 (26%) hypercholesterolemia 9 (39.1%), diabetes 4 (17.4%), smoking 10 (43.4%), sedentary 14 (60.8%), emergency CTx procedure 13 (56.5%), BMI 22.2 ± 3.5, time from CTx to start CRP (median) 251 (152.5–570). Kaplan Meier estimated probability of remaining in CRP was 86.9 ± 7 % at 30 days,: 26 ± 11 % at 180 days and 19.5 ± 10 %at 365 days. In univariate analysis the RCP drop out predictors was age (per each year of increase): OR: 1.038 (IC 95% 1.003–1.074) p = 0.03 and smoking: OR 4.0 (IC 95%: 1.1–14.6) p = 0.03). **Conclusion:** most of the patients leave a CRP without reaching as far as 24 weeks. The main predictor of drop out is the history of smoking, that is the same finding described in other populations.

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Maternal Heart Disease and Pregnancy Outcome: A Single-

V. Stangl[1], J. Schad[1], G. Gossing[2], A. Borges[1], G. Baumann[1], M. Laule[1], K. Stangl[1]. *[1]Med. Klinik Kardiologie, Charité Campus Mitte, Universitätsmedizin Berlin [2]Klinik für Geburtsmedizin, Charité Campus Mitte, Universitätsmedizin Berlin*

Background: With advanced therapeutic techniques in interventional cardiology and cardiac surgery, pregnancy becomes a realistic option for women with congenital and acquired heart disease. Nevertheless, hemodynamic changes during pregnancy may increase the risk for maternal and fetal/neonatal morbidity and mortality. **Methods and Results:** This study reports on pregnancy outcomes (128, 3 twin pregnancies) between 1996 and 2006 in 125 consecutive women with heart disease, monitored in a single-center cohort (Charité University Medical Centre, Campus Mitte, Berlin, Germany). Age, parity, type of cardiac lesion, NYHA functional class, treatment, pregnancy course, maternal events, and fetal/neonatal outcome were analyzed. Women were classified according to pre-defined risk predictors as high-risk (left ventricular [LV] ejection fraction < 50%, NYHA functional class > II or cyanosis, peak LV outflow tract gradient > 60 mmHg) or low-risk (i.e., not meeting these criteria) patients. **Results:** Mean age of the women was 28.1 ± 5.6 years. Of all patients, 45.6% suffered from congenital and 23.2% from acquired heart disease; 28.0% presented with preexistent rhythm disorders and 3.2% had primary myocardial diseases. Further, 18.4% (n = 23) were at high risk and 102 (81.6%), at low risk. Severe maternal complications developed in 12% of all women: 4.8% heart failure, 4.8% arrhythmias, and 1.6% thrombotic complications. Maternal mortality was 0.8%. Women at high risk had a 5-fold higher maternal complication rate (34.8% vs. 6.9% in the low-risk group, p<0.01): 21.7% suffered heart failure (vs. 1.0%), 8.7% had thrombotic complications (vs. 0 %), and mortality was 4.3% (vs. 0%). In high-risk women, the fetal/neonatal event rate (abortion and stillbirth) was, correspondingly, 6.8 times higher (26% vs. 3.8%). Moreover, 52.9% of the women at high risk delivered prematurely, before the 37th week, compared to 15.8% in the low-risk group. Birth weight was reduced to 2592 ± 721 g (low-risk: 3092 ± 591) in the high-risk patients. Use of β-blockers (n = 25), on the other hand, was not associated with reduced birth weight 2983 ± 503 g. **Conclusions:** Despite pronounced clinical variability of congenital and acquired heart diseases, a small number of risk conditions (i.e., reduced myocardial function, low functional capacity, and left ventricular obstruction) can effectively characterize women in whom pregnancy is associated with appreciably increased maternal and fetal risk.

P893

LONG TERM FOLLOW-UP AFTER SURGICAL TREATMENT FOR IDIOPATHIC DILATATION OF THE RIGHT ATRIUM

E Mesquita[1], **A.C. Rodrigues**[2], V Schubsky[3], H Korkes[4], M Barbero-Marcial[5], S.A. Oliveira[6], E Lira[7], C Fisher[8], M Vieira[9], S Morhy[10]. *[1]HOSPITAL ISRAELITA ALBERT EINSTEIN- HIAE [2]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [3]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [4]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [5]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [6]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [7]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [8]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [9]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE [10]HOSPITAL ISRAELITA ALBERT EINSTEIN - HIAE*

Idiopathic right atrial dilatation is a rare anomaly, with unclear etiology and a controversial treatment, consisting either of clinical follow-up or surgical management. **Objective:** To assess short and long-term follow-up after surgical resection of atrial myocardium in idiopathic dilatation of the right atrium. **Methods:** Two male individuals, aged nine months and 16 years old, were closely followed after surgical resection of the right atrium, for 15 and 2 years, respectively, with yearly clinical and echocardiographic examinations. **Results:** Prior to surgical treatment, the infant had presented with permanent atrial fibrillation and uncontrolled heart failure; though echocardiography findings suggested Ebstein's anomaly, angiography showed an extremely dilated right atrium with severe tricuspid regurgitation, suggesting idiopathic dilatation of the right atrium. Surgical resection of large areas of the right atrium was thus performed, disclosing thin areas of atrial muscle surrounded by dense collagenous tissue. A pericardial patch was used to connect the remaining normal atrial myocardium. Immediate post–operative course was uneventful, with sinus rhythm restored shortly after the procedure. On the other hand, the latter patient was asymptomatic; an echocardiogram undertaken when he was 12 months old, however, already displayed mild cardiac dilatation restricted to the right atrium. He was clinically followed up to the age of 16, when, due to marked progression of the disease, surgical treatment was proposed. Transthoracic echocardiogram showed a severely dilated right atrium, a mildly dilated right ventricle and trivial tricuspid regurgitation, while transesophageal echocardiography confirmed interatrial septum integrity and excluded the presence of intracavitary thrombus. Surgical resection of the right atrium was undertaken due to the potential risk of atrial arrhythmias, in an attempt to prevent embolic events. Surgical findings disclosed a paper-thin right atrium, with extensive areas of fibrosis, which were overall resected. The patient had an uneventful recovery, and was also discharged in sinus rhythm. After 15 and 2 years follow-up, respectively, both patients remained asymptomatic; subsequent transthoracic echocardiograms disclosed a slightly enlarged RA, with trivial tricuspid regurgitation, and no additional abnormalities. **Conclusion:** Idiopathic right atrial dilation can be safely treated with surgical resection of the right atrium, with excellent long-term outcome, even for asymptomatic patients.

P895

Prognostic importance of weight loss in patients with heart failure and different pre heart failure body mass

P. Rozentryt[1], J.U Nowak[1], S Von Heahling[2], J Sikora[1], A John[1], U Wilczek[1], L Polonski[1], S.D Anker[2]. *[1]SILESIAN CENTRE FOR HEART DISEASES, ZABRZE, POLAND [2]SILESIAN CENTRE FOR HEART DISEASES, ZABRZE, POLAND [3]APPLIED CACHEXIA RESEARCH, BERLIN GERMANY [4]SILESIAN CENTRE FOR HEART DISEASES, ZABRZE, POLAND [5]SILESIAN CENTRE FOR HEART DISEASES, ZABRZE, POLAND [6]SILESIAN CENTRE FOR HEART DISEASES, ZABRZE, POLAND [7]SILESIAN CENTRE FOR HEART DISEASES, ZABRZE, POLAND [8]APPLIED CACHEXIA RESEARCH, BERLIN GERMANY*

In heart failure (HF) patients higher body mass is associated with better prognosis. Weight loss in HF has been shown to carry poor outcome. It is unclear whether prognostic importance of the same level of weight loss differ depending on body mass at time before heart failure development. We intended to analyze prospectively prognostic value of weight loss in patients with various pre heart failure BMI. In 684 patients with heart failure referred as candidates for heart failure (age 52±10 years, male - 86%, NYHA – 2.5±0.9, LVEF - 25±8%, ischemic etiology in 72%) we analyzed dry body mass loss between the onset of heart failure and index date, excluding patients with duration of HF symptoms less then six months. Patients who underwent transplantation were not included. Patients were divided into three groups according to criteria shown below:

Group 0	(N=324)	Weight loss after the onset of HF	<6% irrespective of index date	BMI
Group 1	(N=194)	Weight loss after the onset of HF	≥6% AND BMI at index date	≤25kg/m2
Group 2	(N=156)	Weight loss after the onset of HF	≥6% AND BMI at index date	>25kg/m2

All patients were followed for median period of 610 days (8–1620 days) all all-cause mortality was recorded. During follow-up 168 (24.6%) patients have died. Clinical characteristics and mortality were shown in table 2.

Parameter	Group 0	Group 1	Group 2	0 vs 1	0 vs 2	1 vs 2
BMI at HF onset [kg/m2]	27.5±4	25.9±3	32.9±4	<0.0001	<0.0001	<0.0001
BMI at index date [kg/m2]	28.1±4	21.8±2	28.6±3	<0.0001	0.14	<0.0001
Mean weight loss [%]	-2±4	15±7	13±5	<0.0001	<0.0001	<0.0005
NYHA at index date	2.4±0.7	2.9±0.8	2.6±0.7	<0.0001	<0.0001	<0.002
NTproBNP [pg/ml]	1924	3437	2627	<0.0001	0.03	<0.07
Mortality at 18 month [%]	16.3	36.2	21.3	<0.0001	0.18	<0.003

Conclusions. Irrespective of pre HF BMI patients loosing body weight were more likely to die when whose without weight loss. In HF patients loosing weight pre HF obesity/overweight exerts protective impact on prognosis.

P896

ACE INHIBITION REVERTS CARDIAC DAMAGE IN EXPERIMENTAL DIABETES: ROLE OF AUTONOMIC MODULATION

C. Malfitano[1], RB Wichi[2], K Rosa[1], C Mostarda[1], K De Angelis[2], MC Irigoyen[1]. *[1]Hypertension Unit, Heart Institute (INCOR), University of São Paulo, Medical School [2]São Judas Tadeu University*

Background: The activation of renin angiotensin system has been linked to cardiovascular dysfunction in diabetes mellitus. Experiments were performed to investigate the influence of angiotensin converting enzyme inhibition (ACEI) on cardiovascular function in diabetic rats. **Methods:** Diabetes was induced in rats by an endovenous injection of STZ (50mg/Kg) and treated with ACEI during 30 days in drinking water (enalapril,1 mg/kg/day). After 30 days, blood pressure (BP) and heart rate (HR) were measured and processed by a date acquisition system. The blood pressure variability (BPV) and heart rate variability (HRV) were evaluated by spectral analysis. **Results:** The BP and HR decreased after 30 days of diabetes as compared to control (96 ± 6 vs 114 ± 4 mmHg and 309 ± 24 vs 371 ± 9 bpm) respectively, but treatment with ACEI didn't change these parameters. Diabetes induced decrease in LF component of BP as compared to control (0.73 ± 0.33 vs 3.93 ± 1.14mmHg2) and ACEI restaured this parameter (4.22 ± 0.97 mmHg2). In addition, the LF and HF components of HRV were augmented after ACE inhibition when compared to diabetes (3.4 ± 1.38 vs 1.67 ± 0.44 and 19.11± 5.36 vs

9.15 ± 2.07 ms2) respectively. The correlation obtained between LF band of HRV and cardiac structure indexes, indicated that higher sympathetic modulation greater the impairment of the cardiac morphometry. **Conclusion:** The results showed that the use of ACE inhibitors improved the autonomic control of circulation associated with a reduced cardiac damage. These data suggest that renin angiotensin system inhibition can modulate cardiac autonomic-related changes in diabetes.

P897

Successful Percutaneous Balloon Fenestration for Aortic Dissection Presenting as Claudication

B. Kim[1], B Lee[1], C Goh[1]. [1]*INJE UNIVERSITY, SANGGYE-PAIK HOSPITAL*

Introduction: Aortic replacement surgery is generally required for patients with ischemic organ malperfusion of aortic dissection even for type-B, but endovascular therapy may offer a lower-risk method of reperfusion. We report the use of balloon fenestration without stent-graft, in the limb ischemic complication of aortic dissection **Case and Results:** A 41-year-old man developed left buttock claudication that had been persisted for 2 months after experiencing acute back pain. His history included hypertension diagnosed 1 year earlier, but no medication. A dissection flap with entry site was noted just distal to the left subclavian artery and the true lumen supplied the celiac, SMA, left renal and IMA on the CT image. The flap was extended to both iliac arteries and the true lumen was compressed by the false lumen. The left ankle-brachial index (ABI) was 0.78. After replacement of 8-F introducer sheath through a left femoral artery, a 0.035 guide wire (Radifocus, Terumo) was inserted into the true lumen of left common iliac artery (CIA). Aortogram revealed a dissection of aorta that compressed true lumen to the left common iliac artery without retrograde flow from the true lumen of the left external iliac artery to the false lumen of left CIA. With use of fluoroscopic guidance, a 5-F JR catheter acts as a guiding for the stiff end of Radifocus guide wire M(0.035“ Terumo®) and advanced into the level to be punctured. The Terumo was removed after puncture and a stiff J-tip guide wire (0.035 Rosen) is advanced into the false lumen of left CIA. The mean transseptal pressure gradient, 10 mmHg between the false and true lumen was disappeared after 7 mm-sized balloon fenestration. On final angiography, there was a reentry tear created at the level of left CIA for restoring lower extremity perfusion. The patient's claudication has resolved, and the left ABI was increased to 0.95. Three-dimensional CT image showed relieving the compressed true lumen of left CIA at 5 months after the procedure. **Conclusions:** Although endovascular stent-graft offers a non-surgical method of reperfusion of compromised vascular branch in aortic dissection, our experience adds aortic balloon fenestration to the non-surgical restoration of limb ischemic complication of aortic dissection.

P900

The effect of living in the high plateau on cardiovascular system

G.A. Gamez Aldo[1], C.N. Cellino Natalia[2]. [1]*“Dr. Pablo Soria” Hospital, San Salvador de Jujuy, Argentina* [2]*“Dr. Pablo Soria” Hospital, San Salvador de Jujuy, Argentina*

The effect of living in the high plateau on cardiovascular system Authors: Dr. Gαmez Aldo; Dr. Cellino, Natalia Place: “Dr. Pablo Soria” Hospital, San Salvador de Jujuy, Argentina. Town of La Quiaca, Province of Jujuy, Argentina. **Purpose:** To determine hearth and lung hemodynamic changes seen in 12 years old children, in the town of La Quiaca, placed at 3,500 meters (about 10,000 feet) above sea level, as compared to normal standards. **Method and Materials:** A transversal descriptive study was performed. A school in La Quiaca was selected in which one hundred children, 12 years old, were chosen at random. The inclusion criteria were: Be a resident in that town for at least one year, be healthy at the moment of the research, to be 12 years old. The variables analyzed were: sex, weight, height, body mass index, pulse oxymmetry, systemic arterial tension, electrocardiogram, color Doppler echocardiogram. By means of the operationalization of variables it was attempted to determine some values to measure degrees of hypoxia and lung pressure. **Hypothesis:** At 3,500 meters above sea level there is a low pressure of oxygen (hypoxia). This is the case of the Puna high plateau, where the town of La Quiaca is located (Province of Jujuy, Argentina). This geographic condition generates important heart and lung hemodynamic changes as compared to children who live at sea level with normal standard measurements. **Results:** The study included 100 children of twelve years old; 53 boys and 47 girls. Their average weight was 30.34 Kg. Their average height was 134 cm. tall. Their average index of body mass was 18.9. Their average arterial tension was 96/63 mmHg. Among these values there were no important changes as compared to normal values. Pulse oxymmetry showed a saturation of 89,66%. The result of the electrocardiogram is the following: Only 5% was normal; 7% showed left pattern; and 87% showed an electric axis deviated to the right, being the mean of these children of +108°. By means of color Doppler echocardiography it was observed the following: 93% showed tricuspid insufficiency that helped to determine the pressure in the VD that was an average of 22 mmHg. The changes detected in the pulse oxymmetry, the electrocardiogram, and the VD pressure measured by color Doppler echocardiography, were statistically meaningful as compared to the normal standards. **Conclusions:** Children who live in the high plateau (3,500 meters above sea level) developed hemodynamic changes in order to adapt to that geographic condition. This is influenced by low oxygen pressure at that level, causing an answer of adaptation that modifies the values of normal control. Therefore, they develop some degree of “lung hypertension”.

P901

Primary Angioplasty in Patients Presenting Late After Onset of Chest Pain and ST elevation Myocardial Infarction – KAMI registry

B. Kim[1], C Goh[1], Y Byun[1], MH Jeong[2], B Lee[1]. [1]*INJE UNIVERSITY, SANGGYE-PAIK HOSPITAL* [2]*CHONNAM NATIONAL UNIVERSITY HOSPITAL*

Objectives: Primary angioplasty has been suggested as a possible treatment in the patients with acute ST-segment elevation myocardial infarction (STEMI) presenting more than 12 hours after symptom onset, but it remains unclear if an invasive strategy is beneficial to these patients. This study was designed to compare the early clinical outcome of patients presenting with >12h from onset of chest pain and acute ST elevation myocardial infarct who received either initial invasive or conservative therapy. **Methods:** We used Korean Acute Myocardial Infarction Registry (KAMIR) sponsored by The Korean Society of Circulation, to define a cohort of patients with STEMI. During the study period of November 2005 to January 2007, there were 8560 AMI admissions in KAMIR. The final cohort included 904 STEMI patients presenting between 12 and 48 hours after symptom onset at 41 hospitals participated in the KAMI registry. 320 STEMI patients were treated conservatively and 584 STEMI patients with primary PCI. In-hospital mortality and early outcomes were compared on the basis of the initial therapy received. Differences between the two groups were evaluated with the Student t test and chi-square test. **Results:** 1. Patients in invasive group were younger, more likely to be men without statistical significance, and more likely to have had a typical chest pain at arrival ($p < 0.01$). There were no differences between medical histories. 2. Although patients with invasive therapy were more likely to be in Killip class I ($p<0.05$), systolic BP and heart rate were similar between the two groups. 3. 72% of the conservative group eventually underwent coronary angiography, but the number (65.3%) of PTCA was lower than the invasive group (90.6%). 4. There was no significant difference in the incidence of procedure complications, but there was higher number of failed and suboptimal PTCA in the invasive group. 5. Echocardiography showed no significant difference of Ejection fraction between the two groups, but the regional wall motion score were lower in the invasive group. 6. Patients with invasive therapy showed lower tendency (6.3% vs 7.5%) of unadjusted hospital mortality without statistical significance. 7. There was no significant difference in the rates of recurrent MI and death between the two groups at 6 months clinical follow up, but the invasive group showed higher MACE ratio (4.3% vs 2.5%) and 6 cardiac deaths. **Conclusion:** Patients receiving early invasive therapy had lower risk features on presentation. Although the rate of in-hospital mortality remained lower in the invasive therapy group, there was no statistical difference in the early clinical outcome. The selection bias may play an important role in choosing treatment strategy and the outcome. It could be characterized in a randomized trial which patients presenting late may be beneficial through the primary PCI.

P902

CORRELATION BETWEEN PLASMA HOMOCYSTEINE, CARDIOVASCULAR RISK FACTORS AND CARDIOVASCULAR DISEASE IN AN ADULT POPULATION FROM BUENOS AIRES.

L. Gariglio[1], O Fridman[2], M Potenzoni[1], D Calcines[1], G Perez Baztarrica[1], I Bañes[1], L Ferrero[1], J Schnidt[1], A Botbol[1], R Porcile[1]. [1]*Universidad Abierta Interamericana* [2]*CONICET (Consejo Nacional de Investigaciones Científicas y Técnicas)*

Objective: to correlate plasma homocysteine levels (tHcy) with cardiovascular risk factors (CRF) and cardiovascular disease (CVD) in an adult population from Buenos Aires since high homocysteine levels have been associated with vascular disease and there is scarce information with regard to this in our country. **Methods:** transversal study, random sample from 3 health care centres located in poor quarters of Buenos Aires. There were no exclusion criteria beyond age to consent the study and vitamins intake. Data were collected using a question form and a venous blood sample for biochemical analysis and basal tHcy determination by means of chemoluminiscence was obtained. Different CRF and CVD were correlated with tHcy values grouped in quartiles. Levels ≥ 15 μmol/L were considered hyperhomocysteinemia. Statistical analysis was performed with SPSS verson 11.0.1 (2001) **Results:** we enrolled 379 individuals (87 men) aged between 18 and 87 years. The following variables were analysed: arterial hypertension, smoking, diabetes mellitus, dyslipidemia, coronary artery disease (CAD), stroke, dementia/cognitive impairment and peripheral vascular disease. Mean tHcy was 8.6 μmol/L ± 3.8. Quartile distribution was: 2.8–6.39, 6.4–7.8, 7.9–9.63 and 9.64–44.4 μmol/L. An increase in the frequency according to quartiles was noticed in sex, age, CAD and AC+stroke variables. In the case of arterial hypertension, there was a significant dependence between this variable and tHcy (Fisher's exact test, $p=0.024$). **Conclusions:** The results of this study showed an association between plasma homocysteine levels and arterial hypertension. Moreover, an increase in the frequencies according to quartiles was noticed in other variables of interest.

P903

QUICKOPT®: A NEW ALGORITHM FOR AUTOMATIC ATRIO-VENTRICULAR DELAY OPTIMIZATION IN PACEMAKERS. A SHORT-TIME FOLLOW-UP STUDY

J. García Guerrero[1], J. Fernández De La Concha[1], J. Olagüe[2], M.J. Sancho-Tello[2], J.G. Martínez[3], A. Ibáñez[3], C. Llorente[4], F. Crespo[4], O. Sanz[5]. [1]*Hospital Universitario Infanta Cristina, Badajoz, Spain* [2]*Hospital Universitari La Fe, Valencia, Spain* [3]*Hospital General Alacant, Alicante, Spain* [4]*Hospital Xeral Calde, Lugo, Spain* [5]*St. Jude Medical, Spain*

Introduction. A new pacemaker model, Zephyr DR 5820, St Jude Medical Inc, Sylmar, CA, was assessed. A function not available previously in pacemakers, named QuickOpt® (QO), was tested. This function provides a one-click automatic measurement of the optimal atrial-ventricular delay programming values (AVDPV), in order to enhance left ventricular (LV) filling and performance. **Methods.** Twelve patients were implanted. At least one month after the

implant date, 11 patients were studied: the first 6 patients were assessed by echocardiogram using VDD stimulation mode, and the later 5 using DDD mode, programming the atrial pacing rate 10 beats above the spontaneous rhythm of the patient, in order to avoid variability in the mitral and aortic doppler pulsed-waves due to sinus node rate instability. One patient was lost for follow up. We assessed the optimal AVDPV using two doppler-derived hemodynamic measurements: the length of the LV filling, using mitral inflow pulsed-wave doppler, and the aortic velocity time integral (VTI) using pulsed-wave doppler in the LV outflow tract. Atrial-ventricular delays, atrial-sensed (PV), from 100 ms to 180 ms using increasing steps of 20 ms in our 6 first patients, and atrial-paced (AV) from 150 ms to 225 ms in increasing steps of 20 ms in the later 5 patients, were programmed. The AVDPV were selected in random order being the echo operator blind for all of them. After the echo assessment, the QO function was performed. Finally, we compared the optimal AVDPV ascertained by the echo measurements with those obtained by the QO algorithm. **Results.** The optimal AVDPV, as assessed by the QO algorithm, were obtained in nine out of the eleven patients studied. One patient did not have sufficient intrinsic P wave, a feature required to allow the algorithm calculations, and the other had a short PR segment, precluding the possibility of managing the AVDPV. The mean PV obtained was 102 ms, range 100–130 ms, and could be obtained in 9 patients, 81,8% of the group (the algorithm sets a 50 ms difference between PV and AV values routinely). The waiting time from the button-click until the results were obtained was always less than one minute. Adequate echo measurements could be performed in 100% of patients in which the QO test was successful, so curves plotting AVDPV values against LV filling length and VTI values could be made in every patient. We calculated the Pearson correlation coefficient between the QO results and the echo findings, and they were excellent, 0,96 for both parameters, P=NS. **Conclusions:** 1) The QO test may be performed successfully in a majority of patients. 2) The QO test is easy an quick to be performed. 3) The comparison between the optimal AVDPV obtained from the QO test and from the echo measurements shows a very good correlation, so we might expect a hemodynamics optimization following the AVDPV recommendations made by the QO algorithm. 4) A larger study is needed to confirm this results.

P904

MRI in left ventricular non-compaction. Our experience in eleven patients.

C. A. Rivas[1], L. Dragonetti[1], F. Corbella[1], F. S. Deketele[1], M. A. Morales Lezica[1], L. Ahualli[1]. [1]*Hospital Aleman (Buenos Aires)*

Aims: To analyze the ratio between non-compaction and compaction left ventricle. **Background:** This pathology has a genetic etiology and begins between the 4th and 8th week of gestation. It has a familiar incidence and its evolution depends on the delay to make the diagnosis. The diagnosis is usually made by echocardiography but can often be missed. The MRI has better resolution and in the last years helped in the diagnosis and detection of this pathology. **Materials and Methods:** In the last two years we studied 11 patients (p.) with diagnosis of dilated cardiomyopathy and suspected left ventricular non-compaction. There were 8 men, mean age 45±8 years. 8 p. were in NYHA class III and 1 in class IV. Four p. were in list to transplant and 1 was transplanted. We analyzed the ratio between non-compaction and compaction (N/C) wall in the model of 9 segments: anterior, lateral, posterior, septal (both medial and apical segments in each case), and apical of the left ventricle. Unpaired Student's t-test was used for the statistical analysis of continuous data. **Results:** The major average N/C ratio was found in apex: 3.09, lateroapical: 2.44, lateromedial: 2.77, and posterior apical: 2.52. The apex had a signicant relationship with the following segments: anteromedial (N/C 1.75 *p 0.01*), anteroapical (N/C 1.97 *p 0.05*), septalmedial (N/C 0.57 *p 0.004*), septal apical (N/C 1.67 *p 0.017*), and non significant with posteromedial (N/C 1.96 *p 0.10*). The lateromedial segment showed a significant relationship with anteromedial (*p 0.03*), anteroapical (*p 0.06*), septalapical (*p 0.05*), septalmedial (*p 0.011*), and non significant when compared to posteromedial (*p 0.23*). The lateroapical segment had a significant relationship with anteromedial (*p 0.03*), anteroapical (*p 0.04*), septalmedial (*p 0.011*), and septalapical (*p 0.05*). No significant relationship was noted when compared to the posteromedial segment (*p 0.32*). Finally, the posteroapical segment showed a significant relationship with anteromedial (*p 0.009*) and septalmedial (*p 0.001*) segments, and non significant with the rest: apical (*p 0.27*), septal apical (*p 0.16*) and posteroapical (*p 0.5*). **Conclusions:** A N/C ratio > 2.4 is frequently observed in the apical, lateromedial, lateroapical and posterior apical segments, being its presence necessary for the diagnosis of left ventricular non-compaction.

P905

Permanent sinus rhythm is associated with less heart failure hospitalizations in patients with history of atrial fibrillation

M. Falconi[1], P. Oberti[1], R. Pizarro[1], F. Sosa[1], L. Lucas[1], G. Maid[1], D. Perez De Arenaza[1], G. Jaimovich[1], J. Krauss[1], A. Cagide[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction: rhythm control strategy has shown no benefit over rate control strategy in clinical trials, however, patients who remain in sinus rhythm (SR) may have a better outcome. **Methods:** between June 1999 and June 2001, patients who underwent transesophageal echocardiography and had atrial fibrillation were included in this prospective cohort study. Exclusion criteria were rheumatic valve disease or previous mitral valve surgery. We evaluated the risk of death, ischemic stroke and hospitalization for heart failure of patients who remained in SR in different multivariate models, with each of the events as dependent variables. All patients gave written informed consent. **Results:** 237 patients were included, mean age 72.6±10 years, 56% male, and 146 underwent elective electrical cardioversion (decided by the treating physician). SR maintenance was 55% at one year, 46% at 3 years and 18% at 5 years. Patients who remained in sinus SR were younger (70.9±9.9 vs. 73.6±9.4 years; p=0.04), had more prevalence of mitral valve prolapse (18% vs. 7%; p=0.01) and higher left atrial appendage velocities (0.34±0.21 vs. 0.26±0.14 m/s; p=0.009). Multivariate analysis showed that patients who remained in SR had no differences in mortality (HR 0.79, CI95% 0.41–1.53, p=0.5) or ischemic stroke (HR 1.00, CI95% 0.46–2.15; P=0.99), but had fewer hospitalizations for heart failure (HR 0.18, CI95% 0.05–0.59; p=0.004) **Conclusion:** in this cohort study, maintenance of SR was associated with fewer hospitalizations for heart failure in patients with history of atrial fibrillation.

P906

Incidence and characteristics of ischemic stroke in patients with atrial fibrillation

M. Falconi[1], P. Oberti[1], R. Pizarro[1], G. Maid[1], D. Perez De Arenaza[1], S. Quevedo[1], A. Arias[1], F. Achilli[1], J. Krauss[1], A. Cagide[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction: atrial fibrillation is associated with higher incidence of stroke. Clinical and echocardiographic variables associated with stroke in non selected populations are scarce in our population. **Methods:** between June 1999 and June 2001, patients who underwent transesophageal echocardiography and had atrial fibrillation were included in this prospective cohort study. Exclusion criteria were rheumatic valve disease or previous mitral valve surgery. In a multivariate Cox model, we evaluated clinical and echocardiographic variables associated with the risk of subsequent ischemic stroke. All patients gave written informed consent. **Results:** 237 patients were included, mean age 72.6±10 years, 56% male, 73% history of hypertension. After a mean follow up of 4.52±2.66 years, 34 patients (14%) had a stroke (incidence 3.17/100 patient-years). At the time of stroke, 65% of patients were not on anticoagulant therapy. Of those who were on anticoagulant therapy, 58% were below therapeutic range. Patients who developed a stroke had significantly higher mortality (HR 3.49, CI95%1.74–7.01; p<0.001). Independent predictors of stroke were female sex (HR 2.27, CI95% 1.05–4.91; p=0.036), history of prior stroke (HR 2.67, CI95% 1.20–5.92; p=0.016) and contraindication to anticoagulation therapy (HR 3.14, CI95% 1.54–6.38; p=0.002). **Conclusion:** In this cohort study, risk of stroke was relatively low, although it was associated with higher mortality. Simple clinical, but not echocardiographic variables, predicted the risk of subsequent ischemic stroke in patients presenting with atrial fibrillation.

P907

The Effect of Telmisartan on Left Ventricular Mass And Renal Function

T. Huang[1], H. Ezumi[1], Y. Kobayashi[2]. [1]*KOYAMA MEMORIAL HOSPITAL* [2]*SHOWA UNIVERSITY HOSPITAL*

Background: The hypothesis that left ventricular hypertrophy regression and the improvement of renal dysfunction in hypertension relates to blood pressure (BP) control and to non-antihypertensive activity of some drugs was tested by comparing the effects of telmisartan on BP and left ventricular mass (LVM) regression and renal function, measured using echocardiography and chest thorax rate (CTR) and Cystatin C. **Methods:** A total of 52 patients with hypertension and an optimal echocardiographic acoustic window and chest X-ray were performed. All patients were received once-daily telmisartan 40 mg for 52 weeks. We compared the BP, LVM, CTR, ejection fraction, Cystatin C before and after treatment. **Results:** Seven patients withdrew from the study because office diastolic BP remained >90 mm Hg. The systolic/diastolic BP were significantly reductions after 52 weeks with telmisartan (from 157.3 ± 10.1/ 96.6 ± 6.2 to 129.8 ± 8.3/79.4 ± 6.9 mm Hg; p<.0001). Using echocardiography, significantly reduced LVM index (from 210.1 ± 35.1 to 201.9 ± 34.5 g/m2; P<.0001), CTR (from 49.7 ± 4.0 to 46.5 ± 3.9%; p=.02) and LVDd (from 48.9 ± 6.7 to 46.9 ± 5.1; p<.0001) at week 24. There are significantly increased LVEF (from 64.7 ± 6.4 to 66.8 ± 5.9%; p<.0001). The Cystatin C was improved after 52 weeks (decreased from 1.18 ± 0.16 to 1.04 ± 0.21; P<.001). **Conclusions:** We conclude that the findings of our study support the hypothesis that the superior regression of LVM and improvement of renal function produced by telmisartan could be caused not only by the control of BP and superior control of BP at the end of the dosing interval. The superior LVM regression and improvement of renal function with telmisartan suggests telmisartan has a mechanism that may be beyond that of lowering BP in hypertensive patients.

P908

Homocysteine Levels and Methylentetrahydrofolate Reductase Gene Variant (C677T) are Associated with Increased Risk of Hypertension in a Population of the Buenos Aires City

R.P Porcile[1], L Gariglio[1], V Vanasco[2], M Junco[2], M Potenzoni[1], I Bañes[1], O Fridman[2–3]. [1]*Hospital Universitario UAI* [2]*Centro de Altos Estudio en Ciencias de la Salud UAI.* [3]*CONICET Argentina*

Introduction. The substitution of cytosine (C) by thymine (T) at nucleotide 677 of the MTHFR gene that converts an alanine to a valine residue, is a frequent polymorphism with reduced specific activity, associated with a moderate increase in plasma homocysteine levels (tHcy) and the risk of vascular diseases. **Objectives:** Evaluate tHcy and its relation with MTHFR C677T polymorphism in association with other vascular risk factors. **Methods:** Cross-sectional study on subjects affiliated to three health centers from the city of Buenos Aires, belonging to the UAI University Hospital. The diagnosis of hypertension was ascertained on the basis of a long-term antihypertensive treatment. Blood samples were collected after overnight fast. Blood glucose, cholesterol, triglycerides, high density lipoprotein, low density lipoprotein, urea and creatinine were measured. Plasma tHcy was determined by chemiluminescence. C677T MTHFR gene mutation was detected by PCR-RFLP analysis using Hinf I restriction analysis of a 198-bp polymerase chain reaction–amplified fragment (Frosst et al., 1995). **Statistical analysis.** Continuous variables: Student "t" test and ANOVA and Tukey test. Discrete variables: $\chi 2$ test. Odds ratios and 95% confidence intervals were calculated. P<0.05 was considered statistically significant. **Results.** Were included 138 subjects: 44 men and 94 women randomly selected. The prevalence of CC, CT and TT genotypes in the overall sample population was 41.3%, 48.6% and 10.1%, respectively. The frequencies of C and T allele were 0.66 and 0.34, respectively and this polymorphism was in Hardy-Weinberg equilibrium ($f\hat{O}2 = 0.32$, df = 1,

p = 0.45). The media total homocysteine level was significantly higher amongst hypertensives (HT) than normotensives (NT) (10.55±3.04 μmol/L vs. 9.09±3.5 μmol/L, p=0.009). The risk of hypertension was compared in the subjects with the CC genotype and the combined number of subjects with the T allele (CT/TT). There was no significant difference regarding the risk of hypertension between NT and HT groups in the overall sample, but whether in order to discard obesity as risk factor of hypertension, only hypertensive subjects (n=28) and normotensive subjects(n=69) with BMI less than 30 Kg/m2 were compared, CT/TT subjects presented a significant higher risk of hypertension than CC genotype (OR=2.393, 95% CI 1.323–4.329 p=0.002) and a significant higher concentration of tHcy (10.7±3,0 (28) vs 9.2±3.5 (71) μmol/L respectively (p=0.017). Also, this distribution of genotypes in HT with BMI<30 group deviated from Hardy-Weinberg equilibrium (p=0.003). **Conclusions.** Our results indicate an association of hyper tHcy and the MTHFR C677T mutation with HT, but do not prove a causal relationship. MTHFR C677T mutation may contribute to hypertension or affect the development of hypertension through hyperhomocysteinemia. Data have been obtained on a limited number of subjects so that they should be considered as preliminary

P909

Atherogenic Index of Plasma as a Determinant of Oxidized LDL in Slovak Non-CHD Subjects.

B. Vohnout[1], P. Blazicek[2], A. Dukat[1], G. Fodor, J. Lietava. *[1]2nd Dept. of Internal Medicine, School of Medicine, Comenius University, Bratislava, Slovakia [2]Dept. of Biochemistry, Military Hospital, Bratislava, Slovakia [3]2nd Dept. of Internal Medicine, School of Medicine, Comenius University, Bratislava, Slovakia [4]Ottawa Heart Institute, Ottawa, Canada [5]2nd Dept. of Internal Medicine, School of Medicine, Comenius University, Bratislava, Slovakia*

Identification of persons with increased oxidized LDL (oxLDL) can improve risk assessment of patients. Measurement of oxLDL levels is however not used as a standard method in clinical practice. Atherogenic Index of Plasma (AIP), a logarithmically transformed ratio of molar concentrations of triglycerides (TG) to HDL-C, reflects distribution of particle sizes in lipoprotein subclasses (HDL-C, LDL but also VLDL) and reflects the delicate metabolic interactions within the whole lipoprotein complex. AIP increases with increasing cardiovascular risk and can be easily calculated from standard lipid profile. As a marker it adds predictive value beyond that of the individual lipids, and/or TC/HDL-C ratio. We therefore evaluated utility of AIP in clinical practice as a determinant of oxLDL levels. **Methods:** We have examined 95 non-CHD subjects (18–75 years old) involved in a cross-sectional Homocystein Slovakia study. Fasting levels of lipids and oxLDL were measured using standard methods. AIP was calculated as a log(TG/HDL-C) in molar concentration. Pearson's correlation and linear regression analysis adjusted to age and sex were used to analyze the data. **Results:** Main characteristics of subjects is shown in the table. AIP strongly positively correlated with oxLDL, LDL and apoB (r=0.44, 0.42 and 0.59, respectively, p<0.001 for all) and negatively with apo AI (r= -0.45, p<0.0001). In simple regression analysis models using age and sex as covariates all AIP, apo B (p<0.001 both), LDL and apo AI (p<0.005 both) were significant determinants of oxLDL. However, when AIP was added to a model with LDL, apo B or apo AI, significance for the lipoproteins disappeared and AIP was the sole significant determinant of oxLDL. **Conclusions:** AIP seems to be suitable determinant of oxLDL in Slovak non-CHD subjects, superior to LDL, apo B and apo AI. Simple measurements of TG and HDL-C, expressed as a log transformed ratio, thus might help in evaluation of oxLDL status in everyday clinical practice.

Age	43.6±12.4
Chol (mmol/l)	5.97±1.2
LDL	3.96±1.05
TG	1.3±0.6
HDL-C	1.4±0.3
oxLDL	3.6±1.1
apo B (g/l)	1.0±0.2
apo AI	1.2±0.2
AIP - log(TG/HDL-C)	-0.06±0.23
Males/Females (%)	17.9/82.1

P910

Stem cells cardiac transplantation

F. Machado[1], E. Oliveira[1], **F. Machado**[1], V. Lisboa[1], B. Bessa[1], D. Gherardi[1], I. Pinto[1]. *[1]Faculdade de Ciências Médicas de Minas Gerais (FCMMG) [2]Faculdade de Ciências Médicas de Minas Gerais (FCMMG) [3]Faculdade de Ciências Médicas de Minas Gerais (FCMMG) [4]Faculdade de Ciências Médicas de Minas Gerais (FCMMG) [5]Faculdade de Ciências Médicas de Minas Gerais (FCMMG) [6]Faculdade de Ciências Médicas de Minas Gerais (FCMMG) [7]Escola Superior de Ciências da Santa Casa de Misericórdia de Vitória (EMESCAM)*

In Brazil and in the whole world millions of people suffer from heart failure, wich is a important health care problem mainly because its high morbimortality and low response to cirurgical or drug therapies. This pathology has many causes such as isquemic heart disease, Chagas disease, dilated cardiomyopathy and heart attack. To treat them, there are coming new treatment, specially the use of stem cells. These are undifferentiated cells and classified as embrionary or adult ones. The embrionaries stem cells cause ethic-religious discussions because the fetus dies. Actually, the biosecurity law aproved by the brazilian parlament organized the research with this cells. Beside it, the adult stem cells are already being used to treat heart failure. They are extracted from the osseous medulla and put inside the damaged area, creating new cardiomyocytes and vascularization. Many studies confirm the useful of this treatment, demonstrating decreased damaged area and cardiac output improved. The brazilian government stimulate a randomized multicentric study of celular therapy to improve this technique and bring back life quality to population.

P911

ATHEROSCLEROTIC CAROTID PLAQUE IN PATIENTS WITH ACUTE CORONARY SYNDROME (ACS).

G. Zampi[1], F. Fini[1], G. Illuminati[2], C. Torromeo[1], F. Barilla[1], V. Paravati[1]. *[1]Dipartimento Cuore e Grossi Vasi, Università degli Studi di Roma La Sapienza, Policlinico Umberto I, Roma [2]Dipartimento di Chirurgia F. Durante, Università degli Studi di Roma La Sapienza, Policlinico Umberto I, Roma*

Objectives: Stroke is the third cause of death in western countries. Patients (pts) with acute coronary syndrome (ACS) have a high incidence of cerebrovascular ischemia risk. The purpose of this study was to evaluate the correlation between instability of atherosclerotic carotid plaque and its morpho-functional pattern showed by ecocolordoppler, in patients with ASC. **Methods:** The study included 105 patients, 68 men and 37 women, average of 65±20 years. All patients selected, at the admission presented ACS, all underwent to ecocolordoppler of epiaortic vessels. The population was followed for 6 months to evaluate cerebrovascular events. The patients were divided into two groups: Group A, 48 pts with diabetes type 2; Group B, 57 pts without diabetes. **Results:** (see figure 1 and figure 2) During admission 4 pts of Group A and only 1 pts of Group B went encounter to a cerebrovascular accident and all these patients showed a soft plaque at the ecocolordoppler. During the follow up, exactly, in the 4th month of observation, only 1 patient of Group A had a transitory ischemia attack. This patient showed a fibrocalcific plaque associated with an carotid artery stenosis of 70%. **Conclusion:** In agreement with literature, our study shows that diabetic patients have an atherosclerotic disease more aggressive than non diabetic patients, therefore these patients have a high risk to develop cerebrovascular events. The study advises that to stratify cerebrovascular disease risk, the morphology of atherosclerotic plaque correlates with its instability better than its functional pattern.

P912

Relation between pulse pressure and in-hospital mortality, 30-day rehospitalization and combined events, in patients with decompensated heart failure

R Cantarelli[1–2], FL Cantarelli[2], FMF Oliveira[1], CA Medeiros[1], C Sarteschi[1], **S Martins Marinho**[1–2]. *[1]RealCor/Procárdio [2]PROCAPE-UPE*

Background: Various studies have shown that a high pulse pressure (PP) is linked to an increased risk of heart attack, stroke, and heart failure. Also, It has been reported that it is associated with increased mortality and morbidity in chronic heart failure. In contrast, a decreased PP was related to increased mortality in patients with acute decompensated heart failure. In this study we tried to demonstrate the relation between PP and in hospital mortality, 30-day rehospitalization and combined events, among decompensated heart failure patients. **Methods:** This retrospective study analyzed registries from 97 patients, from both genders, hospitalized with decompensated heart failure (systolic - EF<45% or dyastolic - EF >= 45%) from april to september of 2007. Admission blood pressure (BP) reading was used to estimate PP (PP = systolic BP-diastolic BP). Patients were stratified into two categories according to their PP: >= 45 mmHg (group 1) or < 45 mmHg (group 2) (n = 62 e 32, respectively). The comparison of the categorical variables in the two groups was made by a Chi Square Test. **Results:** The medium age was 73±12 years. 48(49,5%) were man and 49(50,5%) were woman. Both genders had no significant difference in PP levels. There was no difference in in-hospital mortality: 5(8,1%) in group 1and 5(15,6%) in group 2 (p=0,300). However, the combined event of mortality and rehospitalization showed significant results: 8(12,9%) patients from group 1 and 10(31,3%) from group 2 (p=0,032). **Conclusion:** In our study, we found that lower values (< 45mmHg) of PP are related to worse outcomes in patients with decompensated heart failure, although there was no significant effects in in-hospital mortality.

P913

LONG-TERM OUTCOME OF CAROTID ARTERY STENTING WITH DISTAL EMBOLIC PROTECTION

G. Andersen[4,5], F. Azzari[1,5], S. Ludueña, D. Chambre[4,5], G. Schipani[1,5], A. Fernandez[2,5], S. Brieva[1,5], E. Torresani[3,5], H. Bertoni[5], J. Leguizamon[1,5]. *[1]BAZTERRICA CLINIC [2]SANTA ISABEL CLINIC [3]MODELO DE QUILMES SANATORY [4]FRANCHIN SANATORY [5]ARTERY GROUP*

Background: Carotid stenting with distal embolic protection (CAS) has emerged as a less invasive alternative to endarterectomy for high surgical risk patients. However, some concern has been raised about the reproducibility of these results when performed in unselected patients at general hospitals. Furthermore, there are few reports on long-term outcome. **Objectives:** To evaluate acute and long-term outcome beyond two years of CAS performed by our group in an unselected population from four general hospitals at Buenos Aires, Argentine. **Methods:** We have retrospectively evaluated an unselected population of CAS. We have recorded the cumulative occurrence of death and stroke during the procedure and at follow-up. **Results:** From December 1999 to August 2005 we have performed carotid angioplasty in 175 patients. We report on 105 patients who were treated with embolic protection devices and who were followed for at least 24 months. Twenty six patients (24.7%) were asymptomatic while the others were treated for transient cerebral ischemia (39.0%, n=41), stroke (17.1%, n=18) or non-specific symptoms (19.0%, n=20). The clinical characteristics of the patients were:

Mean age, years (range)	71 (55 to 88)	Current smoker, % (n)	30.4 (32)
Female, % (n)	41.9 (44)	Coronary disease, % (n)	23.5 (31)
Diabetes, % (n)	25.7 (27)	Claudication, % (n)	6.5 (7)
Hypertension, % (n)	55.2 (58)		

We have exclusively used filter-based protection devices (Angioguard®, EPI Filter® & Spider®). Procedural success was 99%. One patient died one week after procedure due to mayor

ipsilateral stroke. Mean follow-up was 40.5 months. Nineteen patients have died and one has presented a non fatal ipsilateral stroke (cumulative incidence of death or stroke of 19.0%, CI 95% 12.4 – 27.4%). Nine deaths (47.3%) were related to cardiac disease, three to mayor stroke (15.7%) and the others to cancer or diabetes. **Conclusions:** Our results compare favorably to those reported by excellence centers and operators, suggesting that carotid artery stenting with distal embolic protection can be performed confidently in a general hospital population. Late mortality is frequently unrelated to recurrent cerebral vascular disease.

P915

Is stress and depression a prognostic risk factor in unstable angina patients?

N. Vita[1], A. Esquivel, D. Ostera, S. Bonetti, M. Gassmann, F. Diez. [1]*Instituto Universitario Italiano de Rosario* [2]*Hospital Italiano de Rosario*

Recently, depression and stress have been related to the prognosis of patients with Coronary Artery Disease (CAD). To establish the prognostic importance of stress and depression in unstable angina (UA), 46 patients (pts) were studied by both Hospital Anxiety and Depression Scale (HAD) and biochemical markers. The pts had been admitted to Coronary Care Unit (CCU) for UA with a TIMI score ≥ 4. Mean age was 65.9 + 9.6 years old. The control group was made up of twenty-two blood donors. Biochemical markers: blood samples for cortisol, platelets serotonin, and troponine were drawn at admission in the CCU. 4-hydroxy-3-methoxy-phenylglycol (MOPEG), phenylethylamine (PEA) and urinary noradrenaline (U.NA) required 24 hours urine collection. The patients were followed for 6 to 12 months. Thirty-one patients had cardiac events during follow-up. The statistical analysis was performed by SPSS (version 12) Epilnfo software. **Results:** Positive Predictive Value (PPV) of platelets serotonin, MOPEG, depression and anxiety are shown as follows:

Variables	Pts (n=46) Mean ± SD	Range	Control (n=22) Mean ± SD	Range	p
Platelets serotonin	2.7 ± 1.5	5.6 (0.4–6)	3.5 ± 1	4.08 (1.02–5.1)	0.007
PEA	189.5 ± 133.6	492 (48–540)	158.7 ± 85.3	368 (40–408)	0.678 (NS)
MOPEG	4.3 ± 2.9	10.85 (0.85–11.7)	1.9 ± 0.7	2.34 (0.76–3.1)	0.000
U.NA	63 ± 39	173 (18- 191)	42.7 ± 28.1	109 (13–122)	0.029
Cortisol	157.5 ± 89.3	453 (36–489)	161.8 ± 73.8	241 (56 -297)	0.638 (NS)

Pts showed diminished platelets serotonin, and elevated MOPEG and U.NA as compared to the control group. As regards psychometric variables, the only one which showed significant differences in pts vs. control group was HAD depression scale (p=0.045).

	Total pts	Events	PPV %	NPV %
Low platelets serotonin	32	23	72	38
elevated MOPEG	21	17	81	44
Depression HAD >7	19	14	73.68	50
Anxiety HAD >7	17	12	70.6	43.7

In the evaluation of the different biochemical markers combined with HAD, the combination which offered the best PPV (90%) was elevated MOPEG and anxiety HAD >7. **Conclusion:** Simultaneous evaluation of biochemical markers and HAD increased the PPV in high-risk UA patients.

P916

Consistency of the results with a new percutaneous treatment for mitral regurgitation and heart failure through the coronary sinus (CARILLON-CDI).

A. Ebner[1], S. Gallo[2], E. Alvarez[3], E. Silva[4], C. Oviedo[5]. [1]*French Hospital. Asuncion - Paraguay* [2]*French Hospital. Asuncion - Paraguay* [3]*French Hospital. Asuncion - Paraguay* [4]*French Hospital. Asuncion - Paraguay* [5]*French Hospital. Asuncion - Paraguay*

Objective: to show the consistency of the results obtained with a new percutaneous device implanted in the coronary sinus to reduce Mitral Regurgitation (MR) in patients with dilated myocardiopathy (DM) with moderate to severe MR with a nine month complete follow up. Mitral regurgitation is recognize as a bad prognosis for the outcome of the patients with heart failure and dilated myocardiopathy. **Materials and Methods:** prospective, analytical test, of consecutive cases from July 2006 to January 2007, with Carillon device from CDI. Implant through a central venous access with 9 french introducer. Inclusion Criteria: older than 18 years with diagnostic of DM and MR from 2+ to 4+ by Trans thoracic Echo(TTE). Exclusion Criteria: patients with organic damage of the leaflets or the mitral annulus; and renal insufficiency with creatinine greater than 2 mg/dl and lack of informed consent. All the patients were studied clinically with laboratory studies, radiology, previous cath and TTE procedure. The parameters used for the follow up were: walk test (WT) (6 minutes test), the NYHA functional class and variation on the MR degree by TTE, measured before and immediately after the procedure, at 1 month at 6 months and at 9 months after the implant of the device. **Results:** In 7 patients the Carillon-CDI device could be implanted successfully. Average age: 63.66 years. There was only one male patient (14.28%). The average result of the baseline WT was: 220.66±70,93mts; NYHA class: III in the 100%, and the degree of MR: 3+. In the one month follow up the average WT was: 348±89.55mts, NYHA class: II and the degree of MR: 2+. At the 6 months follow up, the average WT was: 476mts; the NYHA class: II or minor in 100% of the patients and the degree of MR: 2+. At the 9 months follow up the average WT was: 470.2±62.9mts and the MR: 3 cases (42.8%) 1+, 3 cases (42.8 %) 2+ and one patient with 4+. Mortality was of 0%. Morbidity: only one event of bradycardia during the implant procedure, a reversible transitory second degree A-V block type Mobitz II that required a temporary pacemaker during 2 hours, with total recovery. **Conclusions:** despite the small number of cases, we can affirm that the Carillon-CDI intra coronary sinus percutaneous device, is an interesting option for conservative treatment of the patients with heart failure and mitral regurgitation, considering the significant changes, in the NYHA functional class, 6 minutes walk test, and the degree of mitral regurgitation, with consistent results maintained during the 9 months follow up.

P917

Older patients with heart failure are at higher risk of hyperkalemia with spironolactone: results from a heart failure programme

C. Belziti[1], N. Vensentini[1], N. Vulcano[1], S. Fernandez[1], D. Perez De Arenaza[1]. [1]*Hospital Italiano Buenos Aires*

Introduction: Spironolactone (SPI) improves clinical outcomes in patients with severe heart failure. However, surveys in the "real world" showed a high rate of hyperkalemia. Objectives: to evaluate the use of SPI, the incidence of hyperkalemia and the clinical characteristics associated with hyperkalemia in patients treated with spironolactone in a heart failure programme (HFP). **Methods:** Data of 536 patients included in a HFP from 2001 to 2005 were analysed (mean follow up 13 +/- 12 months). Patients on SPI had weekly determinations of potassium (K) levels in the first month following therapy initiation and then K was determined monthly. Increased potassium was defined as any K >= 5.5 mEq/l and severe hyperkalemia >= 6.0 mEq/l. If increased potassium was detected the dose of diuretics, ACEI and SPI were adjusted. A Cox model was performed to assess variables associated with hyperkalemia in patients taking SPI. **Results:** In the HFP, 155 patients received SPI (28.9%). Patients receiving SPI were younger (64.2 vs. 73.6 years, p<0.001), they were predominantly males (71.6 vs. 56.7, p=0.001), had worse actual functional class (NYHA III-IV 34.2 vs. 19.5%, p<0.001) and ejection fraction (23.5 vs. 29.9%, p<0.001), lower creatinine levels (creatinine >2.5mg/dL 9.7 vs. 16.3%, p<+0.03) and had higher use of ACEI (72.3 vs. 55.6%, p<0.001) compared to patients without SPI. In patients receiving SPI, the rate of increased potassium was 33% (n=51). Older patients (age >75 years) were more likely to have hyperkalemia compared to younger patients (see figure). In Cox model including age, renal function, use of ACEI and diabetes, only age greater than 75 years was associated with hyperkalemia (HR 2.21, 95% CI 1.14–3.96, 0.017) in patients receiving SPI in a HFP. Severe hyperkalemia >= 6 mEq/l was only observed in 6.5% (n=9) of patients. **Conclusions:** Patients on SPI have worse EF and functional class but less comorbidities such as renal dysfunction and older age. In patients receiving SPI older age is associated with hyperkalemia and these patients may benefit by closer monitoring of potassium levels. Although elevated potassium levels were observed in 1 out of 3 patients treated with SPI, life-threatening hyperkalemia was only observed in 6.5% of the patients enrolled in a HFP. These data support guidelines recommendations about careful follow up of patients with HF treated with SPI and suggest that older patients may require closer monitoring.

P920

GLOBAL MORTALITY ON PATIENTS WITH A PREVIOUS CARDIOVASCULAR EVENT AND RELANTIOSHIP WITH CARDIOVASCULAR RISK FACTORS IN A COHORT OF PUBLIC EMPLOYEES MEDICAL SERVICE MENDOZA ARGENTINA. OSEP STUDY (Optimal Systematic Evaluation Program)

O. Arrieta[1], S. Mortaloni[1], S. Zizzias[1], A. Añó[1], J. Alvarez[1], S. Depine[1–2], L. Cammi[1], S. Gimenez[1]. [1]*OSEP Obra Social de Empleados Públicos Mendoza* [2]*Vida Saludable Fundation*

Objetives: To establish the global mortality in a cohort of public employees medical service of Mendoza, who had suffer a previous cardiovascular event and its relationship with cardiovascular risk factors in a 2.5 years of follow up period. **Methods:** We checked 16060 people between 01/12/2003 y 31/05/2006 in ages between 35 to 75 years for women and 45 to 75 years for men. We analyze patients with previous cardiovascular events: stroke or acute infarct of myocardial (AIM) (n=1137). We obtained height, weight, body mass index (BMI), abdominal circumference (AC), blood pressure (BP), blood fasting and random glucose and total cholesterol level. We asked for personal and familiar history. Statistical analysis is expressed in Mean (X) ± Standard Deviation (SD) or Relative Risk of death and Confidence Interval 95% when applicable. Significance obtained by T student test and chi squared test when applicable. We set as significant a p value under 0.01. **Results:** We evaluated 652 men and 485 women. 212 patients with stroke and 975 with AIM (50 people had both events). This means a prevalence rate of 1.32 and 6.08 per cent respectively. We registered 34 deaths in 2.23±0.78 years of follow up, 24 men and 10 women. The diagnosis of stroke presented a RR 8.58 (CI 5.02 to 14.67), meanwhile the patients who had a previous AIM showed a RR 3.15 (CI 2.02 to 4.91). We found significant association with risk of death: age for men (56.8±9.07 vs. 63.5±6.18 years old; p<0.0001); fasting glucose in mg/dL (101.92±40.64 vs. 145.94±82.68, p<0.0001). The diabetic patients had RR 2.92 CI 1.52–5.87; high fasting (≥110 mg/dl) or high random (≥200 mg/dl) glucose levels had RR 2.51 CI 1.16–5.42 **Conclusions:** This study shows, in a preliminary analysis, the high rate of death in this population and the strong associations of glucose level detected and the diagnosis of diabetes with global death in this cohort in a short time of follow up.

P921

Functional Capacity in Children with Congenital Heart Disease

C. Hossri[1], I Jatene[1], G Grecca[1], R Meneghelo[2], H Arakaki[1], A Alves[1], B Zaccara[1], S Buglia[1], M Tomazzi[2], J Beutel[2]. [1]*HOSPITAL DO CORAÉAO* [2]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA*

Objetctives: To investigate the functional capacity in children with congenital heart disease a long time after cirurgical corrections. To create parameters in these population. **Methods:** 380 children with congenital heart disease cianotic and not cianotic, were submited a exercise testing by Bruce protocol. We analize the reserve of heart rate (% of maximal predicted and heart rate recovery), blood pressure, arrhythmia and estimated metabolic equivalent. We

compare these children with 250 normal children (normal group). (Age 4 to 18 years). **Results:** The functional capacity was 14,9 mets in normal group versus 11,7 mets in children with congenital heart disease ($p < 0,001$). The normal children reach 92,6 % of predicted heart rate and only 69 % of the children with congenital heart disease reach the predicted heart rate. The systolic blood pressure levels were small in the children with congenital heart disease. The heart rate recovery was more fast in the control group and the incident of arrhythmia was small in the same group. **Conclusions:** These findings show lower functional capacity in the children with congenital heart disease, and others parameters may be to use how references to compare in the clinical evolution and the assessment these patients.

P922

CLINICAL AND METABOLIC CHARACTERIZATION OF METABOLIC SYNDROME IN CHILDREN AND ADOLESCENTS IN ARGENTINA

C. Mazza[1], P Evangelista[1], I Kovalskys[2], A Figueroa[3], P Digon[4], S Lopez[5], E Scaiola[6], N Perez[7], G Dieuzeide[8]. *[1]HTAL NACIONAL DE PEDIATRIA J P GARRAHAN BS AS [2]HTAL COSME ARGERICH CABA [3]HTAL MATERNO INFANTIL SAN ROQUE. PARANA [4]CENTRO NACIONAL DE INVESTIGACIONES NUTRICIONALES.SALTA [5]INTITUTO PRIVADO DE ESPECIALIDADES PEDIATRICAS. CORDOBA [6]HTAL REGIONAL DE USHUAIA [7]HTAL JOSE RAMON VIDAL DE CORRIENTES [8]HTAL MUNICIPAL NUESTRA SRA DEL CARMEN.CHACABUCO*

Obesity and metabolic syndrome (MS) constitute a major problem in public health, since they are considered risk factors of cardiovascular disease. The prevalence of MS in childhood and adolescence has been confirmed in different studies and it differs according to the characteristics of the population analyzed and the diagnostic criteria used. Most of the data reported involves children and adolescents with obesity, but studies of healthy populations are scarce. **Objective:** To compare the prevalence and distribution of MS in a group of adolescents with different degrees of overweight and in a sample population of the same age but with normal weight (NW) and to analyze the demographic and biological characteristics that imply a greater risk for insulin resistance (IR) and MS. **Methods:** Cross sectional study, case control in adolescents between 10 and 19 years of age from 7 provinces of Argentina. A socio-demographic survey was conducted to obtain data about adolescents and their families. Eating habits were evaluated using 2 surveys (frequency of eating based on ADA nutrition recommendations and KIDMED Test). Physical activity was studied by means of a validated questionnaire and subjects underwent complete physical examination and blood pressure (BP).Anthropometric evaluation included weight, height and waist circumference(WC). Plasma glucose (FPG), insulin, total and HDL cholesterol, triglycerides, GOAT and PGT were measured. Obesity was defined with BMI following CDC 2000, and MS, with adapted WHO diagnostic criteria. Chi Square and Student's t test were used to measure quantitative or continuous variables; ANOVA to compare 3 or more groups and Bonferroni to compare mean values. Pearson correlation coefficient was applied. Level of significance: 95 and 99%. **Results:** The study included 1009 adolescents, 398 male(39.4%) and 611 female(60.6%), of which 601 (59.6%) were controls with normal weight (NW) and 408 (40.4%) were overweight or obese (OW/O). The prevalence of MS in the OW/O group was 40.3% and there was no MS in the control group. The OW/O group presented a significantly higher frequency of family history of obesity, higher birth weight, lower age at menarche and higher frequency of acanthosis nigricans. Concerning biochemical variables, the obesity group showed higher frequency of altered fasting glucose (3.7 % vs 2.5), hyperinsulinemia (27.9% vs 6%), HOMA > 2.5 (3.2% vs 16.3%), dyslipemia (59.5% vs 33.1%) and elevated BP (13.5% vs 4.5%). There was a positive correlation between WC and BP, altered FPG, levels of insulin, HOMA indexes and BMI, and a negative correlation with HDL. We found that adolescents with MS did less time of physical activity. There were no differences regarding eating habits, since both groups had rather unhealthy eating habits. **Conclusions:** We can confirm that obesity is the main factor that leads to MS (40%) and that central body fat distribution is independently associated with the different variables. We focus on the need to carry out preventive programs based on obesity, healthy eating habits and physical activity for adolescents

P923

PROGNOSIS AND PREDICTORS OF LIFE THREATENING ARRHYTHMIAS IN PATIENTS WITH ACUTE CORONARY SINDROMES

G. Maid[1], **R. Perez Etchepare** , F. Rolandi, J. Navarro Estrada, D. Perez De Arenaza, G. Elizalde, C. Moreno, A. Cagide, *[1]HOSPITAL ITALIANO BUENOS AIRES [2]HOSPITAL ITALIANO BUENOS AIRES [3]HOSPITAL ITALIANO BUENOS AIRES [4]HOSPITAL ITALIANO BUENOS AIRES [5]HOSPITAL ITALIANO BUENOS AIRES [6]HOSPITAL ITALIANO BUENOS AIRES [7]HOSPITAL ITALIANO BUENOS AIRES [10]HOSPITAL ITALIANO BUENOS AIRES*

Introduction: the incidence and prognosis of life threatening arrhythmias (LTA) such as ventricular tachycardia (VT) and ventricular fibrillation (VF) in patients with acute coronary syndromes (ACS) is not well known. The aim of this analysis is to assess the incidence and prognosis patients with ACS with LTA. **Methods:** We analysed data of 1405 patients included in our prospective registry of patients with ACS between July 2004 to January 2007. A logistic regression model was performed to identify variables related with death in those patients who had a LTA. All patients were followed up for 12 months after admission for ACS. **Results:** Of all patients, 29% ($n=278$) had ST elevation ACS. The rate of LTA was 2.56% ($n=36$). Patients with LTA were older (mean age was 63"b13 years vs. 68"b12, $p=0.010$) and similar sex, diabetes and hypertension compared to patients who did not had the LTA. At 12 months, the mortality rate was 7.8% for patient without LTA and 41.8% for patients with LTA ($p<0.001$). In a logistic regression model, age over 65 years (RR 1,68 $p=0,049$) and revascularization (RR 0,20 $p=0,001$) were associated with death in patients who had and ACS and LTA. **Conclusions:** Patients with ACS and LTA were older and had a higher mortality compared to patients with ACS without LTA. In patients with ACS who had LTA the lack of revascularization and older age are associated with an adverse clinical outcome.

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Left Main Coronary Artery angioplasty for stable angina and for acute coronary syndromes. Acute results and long – term clinical outcome of 73 patients.

P. Tyczynski[1], A. Debski[1], Z. Chmielak[1], A. Witkowski[1], K. Cedro[1], J. Pregowski[1], W. Ruzyllo[1]. *[1]Institute of Cardiology in Warsaw*

Background: Left main coronary artery (LMCA) stenoses represent the most challenging lesion subsets for percutaneous coronary intervention (PCI). Tight stenosis of LMCA may lead to myocardial infarction with disastrous outcome. Also long-term outcome remains unclear. **Aim:** The aim of our study was to assess the efficacy of both elective (ePCI) and primary angioplasty (pPCI) of LMCA lesions. **Methods:** The study population included 73 consecutive patients, who underwent both a drug-eluting stent (DES) or bare metal stent (BMS) implantation in LMCA. The study population was divided into 2 groups: patients treated with elective PCI (group 1) or with primary PCI (group 2). Group 1 consisted of 50 patients (38 males, age 63,09±11,60 yrs). In 38 (76,0%) patients DES were implanted. There were no periprocedural complications. Group 2 consisted of 23 patients (19 males, age 69,74±7,95 yrs) in whom pPCI for acute coronary syndromes (ACS) was performed. Preinterventional angiography revealed 10 total occlusions of LMCA (TIMI 0 or 1) complicated by cardiogenic shock. Despite restoration of normal blood flow in LMCA (TIMI 3) 3 periprocedural deaths occurred. For follow-up analysis remaining 20 patients were included. DES were implanted in 5 patients of this group (25%). **Results:** During 21,63±12,66 months of follow-up 11 deaths from total study group (70 patients) occured. ePCI group: 8 deaths (1 non-cardiac death due to cancer), 2 myocardial infarctions, 1 in-stent (BMS) restenosis. pPCI group: 6 deaths, 1 myocardial infarction and 1 in-stent (BMS) restenosis requiring rePCI of LMCA. **Conclusions:** Elective stenting for LMCA is a safe procedure. When culprit lesion for myocardial infarction is located in LMCA the only rescue treatment is quick restoration of blood flow. The incidence of deaths during follow-up in both groups remains high. The optimal length of dual anti-platelet treatment remains unclear.

	Elective PCI (n=50)	PCI for ACS (n=23)	
Age (yrs)	63,09±11,60	69,74±7,95	0,9
Male n (%)	38 (76)	16 (69,56)	0,56
Total cholesterol (mmol/L)	4,32±1,29	4,92±1,17	0,92
LDL (mmol/L)	2,70±1,15	3,31±1,26	0,083
WBC (1000/μl)	6,57±1,68	12,56±6,71	**0,000**
Creatinine (mg/dL)	95±25,92	139,09±127,93	**0.026**
hsCRP (mg/dL)	1,11±2,95	2,39±2,57	0,157
EF (%)	47,68±14,68	39,19±17,04	0,076
Diabetes Mellitus, n	27	16	0,14
Arterial Hypertension, n	28	15	0,56
Family history of CAD, n	6	2	1
Cigarettes, n	6	5	0,24
Previous myocardial infarction, n	18	4	0,36
Previous CABG, n	12	3	0,52

CLINICAL FOLLOW-UP

	Elective PCI	PCI for ACS	p
Follow-up (months)	19,94±11,65	27,19±14,69	**0,047**
Interval: PCI to death (months)	14,63±9,78	19,67±18,90	NS
In-stent restenosis in LMCA	1 (2,0%)	1 (5%)	NS
Myocardial infarction	2 (4,0%)	1 (5)	NS
Death	8 (16,0%)	6 (26,08%)	NS

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Blood pressure level, Lipids profile and cardiovascular risk factors in adults Rwandan health volunteers.

Twagirumukiza Marc[1–3], Karagirwa Alphonse[2], Umutesi Hassina[3], Seminega Benoit[3], Musafiri Sanctus[3], Nkeramihigo Emmanuel[3], Luc Van Bortel[1]. *[1]MD, Ghent Univeristy, Heymans Institute of Pharmacology, Ghent, Belgium [2]MD, Hematologyst, Bio-Medical Center, Kigali, Rwanda [3]Msc, CHU Butare, Butare, Rwanda [4]MD, CHU Butare, Butare, Rwanda [5]MD, CHU Butare, Butare, Rwanda [6]MD, CHU Butare, Butare, Rwanda [7]Professor of Pharmacology and Therapeutics, Ghent Univeristy, Heymans Institute of Pharmacology, Ghent, Belgium*

Introduction: The role of behavioural variables and fat patterning in explaining ethnic differences in serum lipids and lipoproteins has been largely discussed. It is thought that serum cholesterol levels are lower in blacks in sub-Saharan Africa, and coronary heart disease has been scarcely documented in that region than in western societies. The purpose of this study was to assess the prevalence of dyslipidaemia and the correlates of serum lipids and lipoproteins among healthy adults volunteers in sub-Saharan African settings. **Methods:** A prospective analytical population survey was carried out among healthy adults residing in university community in Butare, southern province of Rwanda. A total of two hundred and eight adults (133 males and 75 females) were screened after obtaining informed consent. Socio-demographic and dietetic data were recorded. Their blood pressure (BP), heart rate (HR), body mass index (BMI), waist-to-hip ratio (WHR), serum total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), triglycerides (TG), plasma fibrinogen (only in patients) and fasting glucose, serum uric acid, creatinine and creatinine clearance (CrCl) were measured. Standard EKG was performed after 15 minutes of rest, and results were interpreted using Minnesota codes. All the subjects who participated in this study were non-smokers. The hypertension was defined as systolic blood pressure greater or equal to 140 mmHg and/or diastolic blood pressure greater or equal to 90 mmHg; or being on antihypertensive treatment. **Results:** The age range of subjects was 24–59 years with mean of 45.8 +/- 10.2 years. The Waist-to-hip ratio (WHR) 0.88 +/- 0.08 (ranging from 0.63 to 1.41) and it was significantly higher males (0.89+/-0.5 versus 0.86+/-0.11). The WHR were correlated with the LDL and HDL level of Cholesterol as well as with blood pressure level. The mean fasting blood sugar, mean total cholesterol and mean LDL cholesterol were 119.64 +/- 0. 9mg/dl, 1.84+/- 0.31g/l, and 0.80+/- 0.36 g/l. The mean total triglyceride was 1.22 +/- 0.33 g/l while the mean HDL was 0.85 +/- 0.16 g/l. The high level of LDL Cholesterol and the

WHR were linked to the sequels of silent myocardial infarction on EKG. **Conclusion:** The study showed a high mean total and LDL cholesterol values among adults Rwandan healthy volunteers. All those dyslipidemia were linked to EKG signs of silent episodes of myocardial infarction. There is a need for a large population survey and public health action to address these findings and to assess the coronary heart disease.

P928

Cardiovascular Risk Reduction With Single-Pill Amlodipine/Atorvastatin in Diverse Populations

R Blank[1], S Erdine[2], R Feldman[3], P Marques Da Silva[4], P Chopra[5], H Shi[5], RA Moller[5], M Schou[6]. [1]*Southern Piedmont Primary Care, Presbyterian Hospital, Charlotte, NC, USA* [2]*Istanbul University, Istanbul, Turkey* [3]*University of Ontario, London, ON, Canada* [4]*Arterial Investigation Unit, Hospital de Santa Marta, Lisbon, Portugal* [5]*Pfizer Inc, New York, NY, USA* [6]*Pfizer Australia, Australia*

Background: Many patients with hypertension (HTN) have additional cardiovascular (CV) risk factors and their overall CV risk is poorly controlled. This analysis assessed if single-pill amlodipine/atorvastatin therapy reduces overall CV risk across ethnically diverse populations. **Methods:** GEMINI, GEMINI AALA, JEWEL 1, and JEWEL 2 were open-label trials investigating the efficacy/safety of single-pill amlodipine/atorvastatin in patients with both HTN (uncontrolled) and dyslipidemia (controlled/uncontrolled). Eight dosages of single-pill amlodipine/atorvastatin (5/10, 5/20, 5/40, 5/80, 10/10, 10/20, 10/40, 10/80 mg) were electively titrated to improve blood pressure (BP) and low-density lipoprotein cholesterol (LDL-C) control. The primary efficacy assessment was the attainment of both BP and LDL-C goals (by country-specific goals and JNC 6 or 7/NCEP ATP III in GEMINI US and GEMINI AALA). **Results:** At endpoint, the percentage of patients reaching BP and LDL-C goals were similar in all 4 trials (Table). For patients without coronary heart disease (CHD) or a risk equivalent, mean 10-year Framingham CHD risk was reduced from baseline by about 50% in all 4 trials (Table).

Country	GEMINI USA	GEMINI AALA 27 countries (Middle East, Asia Pacific, Africa, and Latin America)	JEWEL 1 UK and Canada	JEWEL 2 11 countries (Europe)
Number of patients, n	1220	1649	1138	1107
Caucasian (%)	83.1	32.9	92.7	99.3
Age, mean (years)	60.9	59.0	61.9	60.3
Patients with diabetes mellitus (%)	26.6	36.9	35.2	27.4
BP at baseline, mean (mmHg)	146.6/87.9	146.6/88.3	152.3/89.0	152.3/91.4
LDL-C at baseline, mean (mmol/L [mg/dL])	4.0 [152.9]	3.4 [130.2]	2.99 [115.4]	3.49 [134.7]
10-year Framingham CHD risk at baseline/at endpoint, mean (%)	12.7/7.4	13.4/6.2	15.3/7.8	12.9/6.8
Patients reaching BP/LDL-C goals at endpoint (%)	65.5/82.1	61.3/87.1	66.8/92.0	65.7/73.7
Patients reaching BP and LDL-C goals at endpoint (%)	57.7	55.2	62.9	50.6
Mean dose amlo/atorva at endpoint (mg)	7.1/26.2	7.1/19.7	7.3/26.8	6.7/24.1

Conclusions: Single-pill amlodipine/atorvastatin reduces CV risk by about 50%, with no major difference in BP and LDL-C control or in mean drug dose administered among different ethnic groups. Differences in country-specific goals may have contributed to the small variation in goal attainment observed in these studies.

P929

COMPLEX CATHETERISM PROCEDURES IN A PUBLIC HOSPITAL IN ARGENTINA. FEASIBILITY AND RESULTS

G. Feltes[1], M De La Vega[1], A Ittig[1], C Leonardi[1], M Giraudo[1], G Pessah[1], L Guzmán[1]. [1]*CARDIOLOGY DEPARTMENT –CORDOBA HOSPITAL – CORDOBA – ARGENTINA*

Background: The budget of health, it is insufficient in numerous regions of the world, more obvious in developing countries. The complex prostheses for treatment by catheterism have a high cost, and must be indicated rationally and its laying carried out by trained professionals. **Objectives:** Describe the results of the complex interventional procedures realized in the Hemodynamics Area (HA) of a public hospital (PH) in a developing country. **Methods:** The process of indication and assignment of the complex prostheses is regulated by the Department of Health of the province. Analyzing the database of HA of the Cordoba Hospital, Argentina, from August, 2005 until August, 2007, there was carried out a retrospective, descriptive, consecutive study, being 25 complex interventional procedures, defined as: mitral (MV) and aortic valvuloplasty (AV), closure of congenital shunts, treatment of aortic coarctation (AC), coronary embolizations (CE) and placement of aortic endoprostheses. **Results:** there were realized 12 percutaneous MV with Inoue balloon in 10 women and 2 men (median age: 50 years), score of Wilkins 8.6, previous area 0.96 cm2 and average gradient 12.8 mmHg; post valvuloplasty area: 2 cm2 and average gradient 3.6 mmHg, by which they were considered to be successful. There were no complications; a patient died 30 days later for refractory pulmonary hypertension. They were realized 2 AV, one as bridge for an extracardiac surgery, and other one for valvular surgery in a patient with acute pulmonary edema. Both procedures were successful. Two AC were treated with use of CP stent: a 40-year-old patient with anomalous right subclavian artery, with a not covered stent, to avoid the commitment of the same one, and a 16-year-old patient with, moreover, persistent ductus arteriosus, who received a covered stent, successful both. They were realized 5 CE: 3 alcoholics, in hypertrophic obstructive cardiomyopathy, successful clinically and hemodinamically; 2 with microcoils: 1 in a high debit coronary-pulmonary fistula and 1 in intercostal branch with theft of flow to left internal mammary artery graft, successful both. Two Amplatzer devices were placed: the first one in a patient with ostium secundum type interatrial communication with left to right shunt, and the second case in a patient with foramen ovale that presented two transient ischemic attacks, both successfully. They were placed 2 aortic endoprostheses, one in hybrid procedure in a 58-year-old patient, with aneurysm of aortic arch and aortic dissection type B, with great vessels transposition and laying of endoprosthesis in ascending and descending aorta; and the other in a 38-year-old patient with pseudoaneurysm post surgery of aortic coarctation, successful both. **Conclusions:** Despite the limitations of a PH in a developing country, this small series would demonstrate that very complex practices can be carried out if indications are established, taking the world guidelines as a reference and managing an appropriate previous training of the interventionalist team. This would help to achieve a suitable relation cost-risk/benefit and obtain results comparable to those of countries with major availability of resources.

P931

Higher aortic valve resistance at rest and in response stress in patients with aortic valve sclerosis

M. Falconi[1], P. Oberti[1], R. Pizarro[1], A. Arias[1], L. Lucas[1], F. Sosa[1], M. Fernandez[1], D. Perez De Arenaza[1], J. Krauss[1], A. Cagide[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction: although patients with aortic valve sclerosis (AVS) have no valve obstruction, there prognosis is worse at long term follow up. The basal and response to stress conditions of the valve could be different in this patients. We compared the response to dobutamine stress in these patients compared to those with normal aortic valves (control group), in special aortic valve resistance response. **Methods:** patients derived to dobutamine stress echocardiography with normal left ventricular function (ejection fraction –EF- $>$ 55%) were prospectively included. Exclusion criteria were basal aortic valve velocity $>$ 2m/s, dynamic left ventricular outflow tract obstruction (DLVO) at rest or during stress echocardiography, ischemic response to stress test with drop of EF$<$55%. DLVO at rest or during stress was defined as intraventricular flow acceleration of $>$ 1.5 m/sec or $>$ 3 m/sec, respectively. Patients were divided according to the presence or absence of AVS. All patients gave written informed consent. **Results:** 49 patients were included. After stress test, 9 patients were excluded because of DLVO during stress (6 patients) or ischemic response with EF$<$55% (3 patients). Forty patients were finally included for analysis (20 AVS group, 20 normal aortic valve group); mean age 66$\pm$9 years, 45% male. There were significant differences in aortic valve resistance between groups at rest and during stress, although increment (delta) was similar between groups:

Variable	AVS (x$\pm$SD)	Control (x$\pm$SD)	p value
Basal mean aortic valve gradient	4.60$\pm$1.52	3.47$\pm$0.78	0.005
Basal aortic valve area	2.25$\pm$0.52	2.58$\pm$0.58	0.06
Basal aortic valve resistance	27.94$\pm$9.53	20.81$\pm$6.63	0.009
Stress mean aortic valve gradient	8.99$\pm$3.69	7.57$\pm$2.72	0.17
Stress aortic valve area	2.97$\pm$0.95	3.41$\pm$0.81	0.11
Stress aortic valve resistance	30.74$\pm$7.74	22.97$\pm$7.82	0.003
Delta aortic valve resistance	2.80$\pm$10.01	2.16$\pm$8.83	0.83

Conclusion: patients with AVS have significantly higher aortic valve resistance at rest and in response to stress. This could have prognostic implications in the long term follow up.

P932

Short Term Results of Repeat Valve Replacement - Predictive Factors Analysis

S. Beurtheret[1], H. Feier[1], V. Gariboldi[1], D. Grisoli[1], A. Riberi[1], A. Mouly-Bandini[1], D. Metras[1], F. Collart[1]. [1]*Department of Cardiac Surgery, Timone University Hospital, Marseille, France*

Background: The new generation bioprostheses are associated with a longer lifespan and are therefore now implanted in younger patients. With the increase in life expectancy we are now confronted with a higher rate of repeat valve replacement; the aim of this study was to evaluate the present mortality and risk factors for repeat valvular surgery. **Patients and Methods:** We reviewed 183 consecutive patients who underwent repeat valve replacement in our institution between 2001 and 2004. Their average age was 62 years (range 28−88), 87(48%) were male and 96(52%) female. 50% of the patients were reoperated because of (structural) degeneration of their bioprosthesis, 20.2% for paravalvular leak, 14.7% for prosthetic endocarditis, 9.3% for valve thrombosis and (9.3%) for plasty failure. One hundred and five patients (57.4%) had received at least one bioprosthesis during the previous operation, 58(31.7%) had a mechanical valve, 15 (8.2%) had isolated mitral plasty and 5 (2.8%) hybrid procedures. All preoperative and operative risk factors were studied. **Results:** The overall operative mortality was 6.56% (12 patients) but the rate was only 3.9 % (4 patients) for bioprosthesis reoperation. Risk factors of mortality were pulmonary hypertension ($>$60 mmHg)(p=0.03), renal insufficiency (p=0.02), more than one repeat valve replacement (p=0.004), previous mechanical prosthesis (p=0.02), previous mitral surgery (p=0.019) and associated tricuspid surgery (p=0.03). **Conclusions:** These data tend to show that valve repeat valve replacement can now be carried out with low operative risk even when performed in an emergency setting or in case of endocarditis. The mortality rate for repeat surgery on bioprosthesis is very low (less than 4%) and speaks for bioprosthesis implantation in younger patients even if they have to be reoperated later.

P934

The Prognostic Value of Dypiridamol Stress Echocardiography in Women

B. Markman-Filho[1], M.C. Almeida[2], M. Markman[3], M. Moreno[4], C. Barros[5], A. Chaves[6], I. Labanca[7], M.F. Lobo[8], W. Souza[9], S. Montenegro[10]. *[1]FEDERAL UNIVERSITY OF PERNAMBUCO [2]FEDERAL UNIVERSITY OF PERNAMBUCO [3]FEDERAL UNIVERSITY OF PERNAMBUCO [4]FEDERAL UNIVERSITY OF PERNAMBUCO [5]FEDERAL UNIVERSITY OF PERNAMBUCO [6]FEDERAL UNIVERSITY OF PERNAMBUCO [7]FEDERAL UNIVERSITY OF PERNAMBUCO*

Introduction: Pharmacological stress echocardiography has been increasingly used to evaluate myocardial ischemia in patients with suspicion for coronary artery disease. The prognostic value of dypiridamol stress echocardiography in women is poorly studied. **Objective:** We sought to evaluate the ability of dypiridamol stress echocardiography to predict the composite end point of cardiovascular death, non fatal myocardial infarction, unstable angina, and revascularization procedures in a follow-up period from the day of the test. **Methods:** Prospective study. The dypiridamol stress echocardiography was performed in an ambulatory basis from May 2005 to May 2007. The dypiridamol dosage was 0.84 mg/kg intravenously, divided in 2 steps (0.56 mg/kg in 4 minutes, 4 minutes of observation, then, 0.28 mg/kg in 2 minutes, 2 minutes of observation and atropine 1.0 mg intravenously after that). The mean follow-up was 16 months. It was calculated the sensibility, specificity, accuracy, positive and negative predictive values of the test related to the composite end point. **Results:** 142 women were evaluated by dypiridamole stress echocardiography. Positive results for myocardial ischemia occurred in 14 patients (10%) and negative results in 128 patients (90%). There was a composite end point in 8 patients and a negative one in 134. When the positive and negative composite end points were compared with the test results, the sensibility, specificity, accuracy, positive and negative predict values were: 87%, 96%, 94%, 50% and 99%, respectively.In multivariate analysis (Cox Regression Model), the 2 independent predictors of cardiac events were the abnormal rest eletrocardiogram and the stress echocardiography result. **Conclusion:** The dypiridamol stress echocardiography is a useful diagnostic test to acess prognosis in women with symptom and/or risk factors for coronary artery disease.

P935

Role of adenosine testing in syncope of unknown origin

M. Sammartino[1], G Albina[1], R Laiño[1], A Giniger[1]. *[1]INSTITUTO CARDIOVASCULAR DE BUENOS AIRES*

The adenosine test has been proposed to identify patients susceptible to present syncope due to paroxystic AV block over the AV node. Results are still controversial. Between January of 1996 to March of 2007, we studied 29 patients, 14 men and 15 women presenting with severe syncope of unknown origin, without structural heart disease, normal EKG, holter monitoring, tilt test and complete electrophysiologic study. With the intravenous infusion of 18 mg of adenosine, we were able to identify 2 groups. Those with a ventricular pause over 6 seconds were considered as positive test (group I) and those presenting a ventricular pause less than 6 seconds, as negative test (group II). The median age was 64 years old (+/-11.4). 85% of the cases did not have preceding symptoms. The median number of episodes were 3.6 (+/-2.3). Patients were followed for 2.8 years (+/- 2.2). Group I included 17 patients. A pacemaker programmed as VVI mode at 40 beats per minute was implanted to 10 patients. At follow up none of them had been paced when the pacemaker was interrogated. Four patients recurred with syncope: 2 had pacemaker on and 2 did not. Group II included 12 patients of which 2 recieved pacemaker therapy. At follow up, 2 patients recurred with syncope. One of them had pacemaker implanted. The other presented with symptomatic infrahisian AV block after 3 years. **Conclusion:** syncope ok unknown origin in patients without conduction system or structural heart disease represents a condition with low recurrence at long term follow up. The adenosine test followed by pacemaker therapy did not influence the outcome.

P936

Ventriculoarterial Coupling in Severe Aortic Stenosis With Heart Failure

R. Migliore[1], M Adaniya[1], **M Bruzzece**[1], M Barranco[1], G Miramont[1], F Guerrero[1], H Tamagusuku[1], A Sinisi[1]. *[1]Hospital Eva Perón*

Background: LV function is determined by the couple of LV end-systolic elastance (Emax) and effective arterial elastance (Ea). In patients with aortic stenosis (AS) the characteristics of arterial vasculature can impact LV function specially in patients with heart failure. **Objective:** To evaluate the ventriculoarterial coupling in severe AS with heart failure. **Methods:** We studied 67 patients, age average 70 $\pm$ 11 years, 37 men, with severe AS (AVA $<$ 1 cm^2) with Doppler echocardiography. Emax was estimated by the method of Senzaki et al.. Ea was calculated as end-systolic pressure divided by stroke volume. End-systolic pressure was obtained from calibrated carotid pulse. Emax/ Ea ratio was used to assess ventriculoarterial coupling. EF was estimated by biplane method. Patients were divided into two groups: group 1, AS with heart failure (NYHA III-IV) (n = 22) and group 2, AS without heart failure (n = 45). **Results:** mean $\pm$ standard deviation **Conclusions:** Emax / Ea ratio is reduced in patients with severe AS and heart failure due to a increase in Ea. The pathophysiology of heart failure in AS appear related to the characteristics of arterial vasculature.

	Group 1	Group 2	P
Emax (mmHg/ml)	1.47 $\pm$ 0.88	1.87 $\pm$ 0.67	N.S.
Ea (mmHg/ml)	2.22 $\pm$ 0.74*	1.70 $\pm$ 0.64	*$<$0.01
Emax/ Ea ratio	0.79 $\pm$ 0.51*	1.45 $\pm$ 0.68	*$<$0.01

P937

Study of the depressive load on the cardiologic patient

J. Tripolone[1], G Santiago[2], J Gimenez[3], JM Tripolone. *[1]UNIVERSIDAD CATOLICA DE CUYO [2]UNIVERSIDAD CATOLICA DE CUYO [3]UNIVERSIDAD CATOLICA DE CUYO [4]UNIVERSIDAD CATOLICA DE CUYO*

The sub-umbrae depressive symptoms are common in the general population and at the primary care clinic. The presence of depressive symptoms in cardiological patients is a risk factor for future cardiovascular events and mortality, independent of classic markers like FEY, Killip index, arrhythmia, and so on. It is an independent risk factor for the development and expression of cardiovascular disease. The purpose of this research was to implement a simple test for the identification and quantification of depressive symptoms. **Material and method:** We studied 325 patients attended in a Cardiology room, spontaneously and they were divided into four groups: group 1, 39 normal patients and without risk factors, group 2, 197 patients with cardiovascular risk factors, group 3 with 54 patients with ischemic heart disease with or without previous infarction, and finally, the fourth group of 30 patients with dilated cardiomyopathy. To all patients we give the BDI test (Beck Depression Inventory), to identify patients with depressive symptoms, even subclinical, and its intensity. The test have 21 questions with four answers each item with an internal consistency of 81 on non-psychiatric patients. (Beck et al., 1988). They are divided into four categories, following the work of Frasure-Smith (Circulation 2002, 105:1049–53); 0–4, 5–9, 10–18, over 19. Analysis: Binomial parameter hypothesis test for the. Significant difference at p $<$0.05. **Results:** there are Statistical diference between al groups (p$<$0.026). The hight BDI was in the G2 (G2$>$G4$>$G3$>$G1) **PERCENTAGE ACCORD CATEGORY** 0–4 category: 27% 5–9: 22% 10–18: 36% $>$19: 15%. 51% of the population showed a BDI $>$ 10. Gender classification: BDI 0–4: 51% male and 49% female. BDI 5–9: 26% male and 74% female. BDI 10–18: 29% male and 71% female. BDI $>$19: 19% males and 81% females. The majority of the population in the four categories corresponded to the G2 (risk factors). **Conclusions:** 1- We proved in this paper the importance of screening both depressive symptoms as conventional risk factors. 2- We saw that 73% of patients had BDI $>$ 5. 3- a 51% of the patients presented BDI$>$10 coinciding with the international bibliography. 4- It was noted the growth of the female population in categories with higher BDI. 5- We found BDI simple to implement at the clinic.

P938

Pulse wave velocity in normotensive adolescents

M. Bracho[1], E Silva[1], G Bermudez[1], J Villasmil[1], S Briceño[1], C Esis[1], J Chacon[1]. *[1]INSTITUTO REGIONAL DE INVESTIGACION Y ESTUDIO DE LAS ENFERMEDADES CARDIOVASCULARES.FACULTAD DE MEDICINA.UNIVERSIDAD DEL ZULIA*

Aim: To determinate the pulse wave velocity (PWV) reference values in normotensive adolescents and their association with gender and age-groups. **Design and Method:** The study was carried out in 100 adolescents, aged 13–18 years, (47 males and 53 females), normotensive, non-obese without dyslipidemia, dysglycemia and familiar history hypertension in first degree. All subjects were measured the carotid-femoral PWV in m/sec with the Complior ©. Date are presented as mean $\pm$ standard deviation, Kolmogorov-Smirnov z-test was applied to analyze the Gaussian distribution of the PWV values, statistics analysis including multivarable analisis was used to determine the effects of the age-group [13–15 (n=44) and 16–18 (n=56) years] and gender. Mean (95% confidence interval) was utilized to express the reference values of PWV. The alpha level was set at 0.05. **Results:** The PWV values were 7.10 $\pm$ 0.53 in all the subjects and 7.17 $\pm$ 0.59 and 7.04 $\pm$ 0.48 in male and females respectively (P: $>$0.05). Age-groups showed the following values: 6.97 $\pm$ 0.62 for 13–15 and 7.21 $\pm$ 0.44 for 16–18, (P$<$ 0.05). The PWV reference values established in this study were: 6.78 – 7.16 m/sec for the 13–15 age-group and 7.09 – 7.33 m/sec for the 16–18 age-groups. **Conclusions:** The PWV reference values in adolescents normotensive did not differ between the gender but the PWV increased significantly with the increasing age. The PWV increasing has shown to be a good predictor of the cardiovascular morbidity and mortality.

P939

Histopathological Features of the Resected Left Atrial Appendage in Paroxysmal Atrial Fibrillation in patients without Valvular Heart Disease

L. Antonietti[1], D. Santos[1], C. Tajer[1], M. Amat[2], A. Zapolanski[3], F. Mastrogiacomo[1], W. Astorino[2], E. Domenicchini[2], J. Lax[1]. *[1]Department of Cardiology, Alexander Fleming Institute, Bs. As., Argentina [2]Department of Pathology, Alexander Fleming Institute, Bs. As., Argentina [3]Cardiothoracic Surgery, Valley Columbia Heart Center, Ridgewood, N.J., USA*

Background: In patients with valvular surgery, the histopathology has shown many pathologic findings in the left atrial appendage (LAA), but there is a lack of information about histopathological characteristics in patients with atrial fibrillation (paroxysmal or recently persistent) without valvular or other cardiac diseases. **Objective:** to perform a histopathological assessment of left atrial appendages (LAA) resected during surgical treatment for long-standing paroxysmal atrial fibrillation (AF) in the absence of valvular or other cardiac disease. **Methods:** This study involved 12 surgical cases of isolated intermittent AF with the minimally invasive technique Wolf Mini Maze. In summary, the ablation clamps are inserted into the chest through two small incisions, one on each side of the chest. The clamps used radio frequency energy to isolate the area of the left atrial near the pulmonary veins. During the procedure, the left atrial appendage was removed. We compared the findings with published references for histopathological aspects of normal sinus rhythm autopsy findings (NORMAL) and patients with LAA resected during valvular heart disease surgery (VALV). Saito, T. Circ J Circ J 2007; 71: 70–78. The degree of histopathological change was divided into 4 grades and scored as follows: none (score 0); mild (score +1); moderate (score +2); severe (score +3). The scoring was carried out by 2 of the authors, blinded to the clinical presentation. Data was analyzed with the Goodness of fit method and the Chi square value calculated (Chi). **Results:** 11 p were

males, mean age 52 ± 12 years. Ten with paroxysmal AF and two with persistent AF. Time from the beginning of the clinical episodes: 4.4 (1–13) years. None of them have another valvular or any cardiac disease. Normal mean Left atrial area at Echocardiography: 20.52 cm2. Ten out of 12 patients were in sinus rhythm at the time of surgery. **Conclusions:** The histopathological study of the LA appendage in patients with Paroxysmal atrial fibrillation without valvular disease showed frequent abnormalities that resembled the findings reported in the LAA of valvular heart disease patients. These unexpected findings suggest that there is a chronic damage of the left atrium in some way related to paroxysmal atrial fibrillation.

GRADING OF THE HISTOPATHOLOGICAL FEATURES

Score	Nuclear enlargement	Bizarre nuclei	Fatty infiltration	Intercellular fibrosis	Smooth muscle cells
0	0	0	1	0	1
+1	2	2	6	9	1
+2	9	9	4	3	9
+3	1	1	1	0	1

Goodness of fit statistical analysis Nuclear enlargement: NS vs. VALV. Chi 690 vs. NORMAL $p < 0.00001$ Bizarre Nuclei: NS vs.VALV. Chi 686 vs. NORMAL $p< 0.00001$ Fatty infiltration: NS vs. VALV. NS vs. NORMAL. Volume of smooth muscle cells in the endocardium: NS vs. VALV. Chi 23 vs. NORMAL. $P<0.01$ Fibrosis: Chi 149 vs. VALV. Chi 232 vs. NORMAL. Both $p < 0.001$.

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Analysis of Clinical Characteristics and Head-up Tilt Test Responses in Patients Suffering from Unexplained Syncope.

K. Alonso[1–2], J Escobar Calderon[1–2], R Sansalone[1], J Armentano[1], L Ferrer[1], R Aguero[1], M Leonardi[1], H Pomes Iparraguirre[1]. [1]*SANATORIO FRANCHIN* [2]*INSTITUTO INVESTIGACIONES MEDICAS*

Objective: To analyze the clinical characteristics and heap-up tilt test responses in patients suffering from unexplained syncope and no apparent structural heart disease. **Methods:** We included prospectively 606 consecutive (pts) referred to our service with unexplained syncope who underwent basal head-up tilt testing (HUT) from May 2004 to August 2007. The clinical characteristics and the HUT responses were compared between pts with positive and negative HUT. They were grouped according to age: Group I: Younger than 30, Group II: 30 to 60 and Group III: Older than 60. **Resuts:** Of 606 pts with HUT, 370 (61%) were women. The median age was 54 years old, 27 % had hypertension and 3,6 % had diabetes mellitus. The median of the syncopal spells was2 and the time from the last spell to the HUT was a mean of 42 ± 86 days. There were 155 pts (26%) with positive HUT: Type I: 33 (21%), Type II 13 (8%), Type III 72 (47%) and Orthostatic Hypotension 37 (24%). There was no significant difference in the proportion of positive HUT in pts with and without previous symptoms, with hypertension and between sex. It was positive in 30%, 15% and 25% of Group I, II and III respectively (p 0.003). Pts with more than 2 spells had more positive HUT (28% vs 19%, p 0.01). Analysis of the types of positive responses to the HUT showed different responses among the three groups (Table 1) (p Fisher 0.000) and in hypertensive pts (p Fisher 0.0014), with less Type I response (9 vs 25%, p 0.01). **Conclusions:** Age and number of syncopal spells had more positive HUT. Age and hypertension were associated with different types of responses to the HUT.

TABLE 1

	Type I	Type II	Type III	Orthostatic Hypotension
Group I	38%	12%	44%	6%
Group II	22%	15%	41%	22%
Group III	10%	4%	50%	36%

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EPITHELIOID HAEMANGIOENDOTHELIOMA OF THE AORTA

G. Feltes[1], M Losano[1], N Bustamante[1], G Ghirardi[1], A Uribe[1], L Guzmán[1]. [1]*CARDIOLOGY DEPARTMENT –CORDOBA HOSPITAL – CORDOBA – ARGENTINA*

Background: The epithelioid haemangioendothelioma (EHE) it is a rare tumor that has been described in different organs, but rarely in the aorta. The clinical behavior of this type of tumors is controversial. The EHE is included in a group of neoplasms in which the epithelioid haemangioma represents the benign end of the range, whereas the epithelioid angiosarcoma represents its malignant equivalent. The EHE is an intermediate variant that initially was considered to be a vascular tumor of low grade malignancy, but the occurrence of systemic metastases in 21 % of the cases, led to the conclusion of which it is considered to be malignant. **Case Report:** 53-year-old masculine patient with history of arterial hypertension and severe aortic valve regurgitation who enters to our center for aortic replacement. In preoperative evaluation, laboratory data were normal except for eritrosedimentation rate (103 mm/1 hour); he complained of loss of weight of 10 Kg, tiredness and night sweats in the last 6 months. At physical examination, a grade 3/6 decrescendo diastolic murmur was heard best in the third left intercostal space. It was made a thorough search for malignancy with negative results. In the surgery of aortic valve replacement there was an thickened aortic adventicia that was spreading to the anterior wall of the ascending aorta, with firm adhesions towards the nameless vein and thymic fatty tissue. Because its thickness and stiffness, it was sent to Pathological Anatomy Department, receiving later the report of the study by immunohisto-chemical method of pseudo-mesotheliomatous EHE. The patient evolved favorably receiving then chemiotherapic treatment with good evolution after a year. **Comments:** we present this case given his rarenes and to emphasize that in spite of the exhaustive but negative clinical search for a neoplasia, the find of a subtle anomaly as the aortic thickness and fibrosis, carried to the ethiologic diagnosis and allowed the opportune treatment of a malignant pathology with metastasic potencial.

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Particularities of the Cardiovascular Risk in Old Women in an Urban Romanian Community

D. Pop[1], D. Zdrenghea[1], A. Sitar-Tautu[1], M. Cebanu[1], D. Colcear[1], B. Borz[1]. [1]*REHABILITATION HOSPITAL*

Background: It is known that, even if the cardiovascular risk factors are the same, the evolution of cardiovascular disease in postmenopausal women is worse than in men, this being especially true for old people. This aspect was not studied until now, in Romania, where the life expectancy is decreased in both men and women, in comparison with the developed countries. **Methods:** A representative sample of 516 old people was studied, 264 women and 251 men, in the urban community of Cluj-Napoca Romania. The classical cardiovascular risk factors were assessed. The prevalence and type of cardiovascular disease was registered using General Practitioner files, including the clinical and ECG examination of the subjects. Lipid profile and fasting glycemia were determined in all subjects. **Results:** Dyslipidaemia (TC > 200mg/dl and/or TG>150mg/dl) was more prevalent in women (48%) than in men (32%), $p<0.05$. Diabetes mellitus was also more prevalent in women (21.2%), than in men (15.9%) $p<0.05$. Hypertension was registered in the great majority of the subjects, without significant difference between women (91.3%)and men (86.5%). Smoking habit was registered in a small percentage, double in men (18.1%) in comparison to women (7.9%) $p<0.05$. Overweight and obesity were registered in 48% and 39% of the women, and 39%, respectively 19% of the men, the difference being significant for obesity $p <0.05$. 62% of the women and 57.8 % of the men presented a cardiovascular disease, the differences between the 2 groups being non-significant. Coronary artery disease was more prevalent in women (55.7%) than in men (47.4%) $p<0.05$, but old myocardial infarction was more prevalent in men, 12% vs. 5.7% of the women, $p< 0.05$. The rates were inversed for stable angina pectoris, 21.2% in women and 12.7% in men. Heart failure was surprinsingly registered in only in 98% women and 11.2% men; arrhythmias were also equally registered in men and women, 23.5%, respectively 22.7%. The prevalence of stroke was similar in both women 16.2%, and men 19.9%, $p>0.05$. In turn, peripheral arterial disease was double in men 10%, vs 4.8% women, $p<0.01$. **Conclusion:** Cardiovascular risk is similar in both old women and men, but there are some paritcularities, important in primary and secondary prevention. Cardiovascular risk factors are more prevalent in women, except smoking. The prevalence of cardiovascular disease is the same, but myocardial infarction and peripheral arterial disease are more prevalent in men, and stable angina pectoris in women.

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Histopathologic Evaluation of Prophylactic Effects of Zofenopril, Enalapril and Valsartan against Doxorubicin Cardiotoxicity in Rats

E. Bozcali[1], V. Karpuz[2], D.B. Dedeoglu[3], O. Suzer[3], H. Karpuz[1]. [1]*Istanbul University Cerrahpasa Medical School, Department of Cardiology* [2]*Istanbul Bilim University Medical School, Department of Pathology* [3]*Istanbul University Cerrahpasa Medical School, Department of Pharmacology and Clinical Pharmacology*

Background Doxorubicin (DOXO), is widely using chemotherapeutic agent, nevertheless its cardiotoxic adverse effect evokes concern in clinical practice. Current study designed to compare potential protective effects of zofenopril, enalapril and valsartan against DOXO cardiotoxicity. **Methods** The rats were divided into 8 groups of 8 each. Group 1, 2, 3 and 4, respectively, received 0.5 ml distilled water (dw), 15mg/kg/day zofenopril which dissolved in dw, 2mg/kg/day enalapril which dissolved in dw and 30mg/kg/day valsartan, which dissolved in dw by intragastric gavage for 7 days. Groups 5, 6, 7, and 8 underwent same procedures, respectively as groups 1, 2, 3, and 4. On the 7th day, groups 1- 4 and groups 5- 8, respectively, were injected intraperitoneally with serum saline and 20mg/kg DOXO. On the 9th day, isolated rat hearts were perfused in Langendorff perfusion system with a stabilization period for 30 minutes, global ischemia for 15 minutes and 45 minutes for reperfusion. Subsequently, rats were sacrificed and hearts were immediately taken and fixed in a buffered 10% formalin solution and they were embedded in paraffin blocks for histopathological examination. Light microscopic evaluation of hematoxylin- and eosin- stained sections and immunohistochemical study were performed. The degree of histological cardiac damage was quantitatively assessed in five categories which included interstitial edema, polymorphonuclear neutrophils (PMNs) infiltration, vacuolization, myonecrosis and disorganization. We scored each histopathologic slide for each category as follows: 0 = absent, 1 = less than 50% of each slide, 2 = equal and more than 50% of each slide. Afterward each heart had a score of 0–10 for histopathological evaluation. The Kruskal-Wallis nonparametric ANOVA test was used, along with post hoc Dunn's multiple comparisons test for numerical scores in eight groups. **Results** Light microscopic evaluation showed that markedly cardiac damage was induced by DOXO. The highest mean scores were observed in DOXO-treated groups except zofenopril and DOXO-treated groups. Histopathological examination mean score values of the groups showed that zofenopril successfully prohibited DOXO induced cardiac damage (Group 1: 4.625 versus group 5: 7.125 $p< 0.001$, group 1: 4.625 versus group 7: 7.125 $p< 0.001$, group 1: 4.625 versus group 8: 6.625 $p< 0.001$, group 6: 5.5 versus group 7: 7.125 $p< 0.001$). Valsartan-treated hearts markedly revealed enhancement in interstitial PMNs infiltration in comparison to other groups, therefore they had higher scores. Particularly, marked hyalinization and thickening of arteriolar walls were observed in DOXO-treated groups. Additionally, several cells which were located in arteriolar walls of DOXO-treated hearts showed intracytoplasmic vacuolization. Immunohistochemistry study demonstrated that cells with intracytoplasmic vacuolization were positive for smooth muscle actin, therefore they defined as smooth muscle cells. **Conclusion** In respect of scores of histopathological changes zofenopril exhibited more significant prophylactic effect against DOXO cardiotoxicity than enalapril and valsartan. Moreover, zofenopril overwhelmed DOXO induced cardiac damage. Ischemia and DOXO both together induced pronounced vacuolization in cardiomyocytes. Interestingly, increased interstitial PMNs infiltration was observed in valsartan-treated hearts.

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Frequency of Incomplete Stent Apposition Assessed by StentBoost: a Novel Angiographic Technique

A. Candiello[1], M Albertal, F Cura, L Padilla, P Perez Baliño, S Jozami, J Thierer, J Belardi. [1]*Instituto Cardiovascular de Buenos Aires*

Background: the presence of incomplete stent apposition (ISA) is associated with an increased risk of stent thrombosis. StentBoost (SB) allows accurate evaluation of stent dimension following stent deployment. **Methods:** A total of 46 patients underwent coronary stenting. SB and quantitative coronary angiography (QCA) diameter measurements were performed at the mid-portion and at the most proximal and distal site of the stent. ISA was defined as SB $<$ 90% of QCA values. **Results:** stent diameters by SB and QCA as well as the percentage of ISA at each portion are depicted in the Table.

	Proximal	Mid-Portion	DISTAL
SB	3.29±0.51	3.16±0.65	3.19±0.5
QCA	2.90±0.65	2.79±0.65	2.89±0.59
ISA (%)	8.9	8.9	8.9

Conclusion: ISA by SB assessment is a frequent phenomenon, with similar frequency in all stented segments. The presence of ISA may indicate a need for further stent expansion.

P945

Acute aortic regurgitation due to spontaneous rupture of a fenestrated cusp: report in six cases.

J. Goral[1], **D. Avayu**[1], J. Mitelman[1], D. Morisse[1], C. Froimovich[1], L. Rodas[1]. [1]*HOSPITAL DE AGUDOS DR TEODORO ALVAREZ. BUENOS AIRES. ARGENTINA*

Background: The regurgitation to Aortic valvular (RAV) has diverse mechanisms, forms of presentation and etiologic. The cause like spontaneous rupture is very rare and literature is limited isolated reports of cases. **Objective:** To evaluate the clinical correlation - pathological of the rupture or fenestrations or aversion to aortic valvular spontaneous as form presentation (RAV) **Materials:** Observational study, in the Service of Cardiology of a Municipal Hospital, 6 patients with new diastolic murmur, 4 men: 28, 42,36 and 58 years and 2 women: 66 and 75 years; with severe aortic regurgitation and one ample fenestrations to valvular or fibrous cord rupture that they replace to the Aortic valve in all cases: 1) data of familiar antecedents could not be obtained. 2) Doppler echocardiography colour showed: a) light to moderate mixomatosa degeneration of aortic valve, trivalve in five cases, bicuspid one. b) The right coronary aortic cusp was flail, due to rupture of the residual cord above two large fenestrations. c) Light expansion of Aortic ring. d) Ample aversion or rupture of right coronariana valve d) one valve thickened protruded or prolapsed in exit of Tract Left Ventricle. e) The Mitral Valve showed to minim mixomatosa degeneration without prolapsed. 4) Severe or moderate deterioration of Systole function Left Ventricle, the functional class could not discern acute or chronic evolution. 5) This was an Echocardiography finding after the entrance by disnea and palpitations to the guard of the Hospital. 6) No valvular vegetations were identified and blood cultures were negative, there was no acute or healed endocarditis in all patients. The youngest patient presented initial fever that motivated to discard acute endocarditic infections.7) the rupture of these cusps was interpreted, of no traumatic cause, developing a severe aortic insufficiency. 8) Surgical intervention was recommended, only one trivalve patient died. **Conclusions:** 1) A fenestrated cusp in extensive form with an expanded aortic ring of degenerative cause can cause chronic insufficiency or sudden deterioration after the rupture of a one cusp valvular. 2) The Pathogenesis of this one affection would be the mixomatosis of cusp and the ring to valvular aortic. 3) Literature reports few cases, of masculine sex, with familiar antecedents of RAV and mixomatosis, average of age of 50 years and with 40% of hypertension. 4) No infective and no traumatic rupture of cord-like aortic valve structures may result in severe acute aortic regurgitation. Particularly in men with chronic hypertension.5) Poor functional class occurred in younger patients with longer flail cusp.

P946

Application of Health Informatics for Global Efforts: The Care of Adult Congenital Heart Defects' Surveillance

A. Krishnaswamy[1], G Mensah[1], W Book[2], M McConnell[2], T Lyle[2], A Correa[1]. [1]*Centers for Disease Control* [2]*Emory Healthcare*

Background: Congenital heart defects (CHD) occur in 8 out of every 1000 live births, and 60% of CHD are severe enough to need surgery. Due to advances in surgical and medical care, 85% of CHD cases now survive into adulthood, and the prevalence of CHD now approaches an estimated 3700 per million people. These estimates are, however, imprecise due to the lack of population-based data on prevalence and outcomes for adult-CHD; thus, limiting the assessment of needs and health services for the estimated 22 million adults with CHD living globally. The challenge in addressing these data gaps is the lack of population-based information systems and means to facilitate information exchange. Informatics may solve this problem by supporting linkages of population-based registries, surveillance and other information systems. We examine issues of public health relevance to CHD (eg. tracking, surveillance, education, outcomes; psychological, educational, and behavioral challenges; and quality of life), and propose a conceptual framework, based on informatics' methods and techniques, for creating a network for global surveillance efforts for addressing adult-CHD population health issues. **Study Question:** Can health informatics offer solutions for global information interchange and research related to public health aspects of adult CHD? If so, how might a CHD surveillance informatics system look like? **Methods:** We propose a combination of approaches: (a) Interviews with public health and clinical experts from various countries to describe the current health status of the adult CHD population; (b) Examination of global evidence-based information; (c) Ongoing consultation with Informatics professionals on potential research areas; and (d) Assessment of the adaptability of information systems in biomedical and public health fields for CHD. An inventory of knowledge sources and informatics in various countries will be assembled to form information nodes. **Results:** Key elements of CHD public health are identified: transition of care, pregnancy and peri-partum care; information, education, and communication needs; population-based registries, linkage to electronic health records, and tracking; health care utilization, costs, and needs; healthcare workforce and manpower issues; and non-medical costs. Components of informatics (eg., knowledge management, decision support, communities of practice, interconnected data and knowledge bases) can be interwoven to develop systems that support a framework for CHD surveillance. A pilot framework for the US is proposed, and can inform the development of a robust global CHD informatics system. **Conclusions:** A conceptual pilot framework for a public health strategy for adult CHD is proposed to address an important current surveillance gap in the US. This can be extended to interconnect adult CHD centers globally for designing and developing informatics solutions to facilitate international knowledge-sharing and decision-making for adult CHD. **Public Health Implications:** A substantial proportion of adult-CHD population requires continuous specialist follow-up and advice. This requires sound evidence-based research which to date has been limited. An informatics supported, globally interconnected network of adult-CHD centers can facilitate the development of comprehensive research, policy; and serve as a resource to professionals and patients across the globe.

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Bisoprolol favorably alters diastolic function and reduces NT-pro-BNP levels in diastolic heart failure with restrictive transmitral flow pattern.

K.G. Adamyan[1], A.L. Chilingarian[1], A.V. Astvacatryan[1]. [1]*Institute of cardiology*

β-blockers are beneficial in diastolic heart failure (DHF) treatment by LV filling time prolongation and myocardial oxygen demand reduction, regression of left ventricular hypertrophy, and direct inhibition of renin release. We conducted this study based on assumption that β-blockers might alter LV remodeling, contractility, diastolic function and cardiac peptides release in severe DHF with restrictive.transmitral flow pattern. **Metods:** 125 pts (56 women) with DHF (E/A $>$ 2, IVRT $<$ 130 msec) NYHA IV and EF $>$ 45% aged 62 $\pm$ 15 years on standard therapy (ST) ACEI/ARB and (if necessary) diuretics were randomized to two groups to receive bisoprolol (B) titrated to 10 mg/day (n = 62) or ST (n = 63). Total ischemic burden (TIB) as total time of ST segment depressions $\geq$ 1 mm and $\geq$1 min duration was measured by 24 hour monitoring. NT-pro-BNP and EchoCG measurements of midwall fractional shortening (MFS), E/Em of LV lateral mitral annulus, transmitral E wave deceleration time (EDT), E/A, tissue Doppler myocardial performance index (MPI) as IVCTm + IVRTm/ETm were done in 30, 90, 180 day and 1 year follow up by experts unaware of the study aims. **Results:** In 30 day TIB was less in B compared to ST and difference did not change throughout follow up (35 $\pm$ 8 min vs 44 $\pm$ 7 min, $p < 0.02$). In 90 day MFS, E/A, EDT were better in B (MFS: 10 $\pm$ 3% vs 7 $\pm$ 2%, $p < 0.05$; E/A: 2.2 $\pm$ 0.3 vs 2.5 $\pm$ 0.4, $p < 0.05$; EDT: 135 $\pm$ 6 msec vs 122 $\pm$ 7 msec, $p < 0.05$). In 180 day in addition to same differences of TIB, MFS, E/A, EDT in B also observed improvement of E/Em, MPI and NT-pro-BMP level. (E/Em: 12.8 $\pm$ 3.4 vs 16.2 $\pm$ 2.8, $p < 0.03$; MPI: 0.61 $\pm$ 0.25 vs 0.91 $\pm$ 0.12, $p < 0.02$; NT-pro-BMP: 105.2 $\pm$ 7.3 pg/ml vs 131.4 $\pm$ 8.6 pg/ml, $p < 0.003$) After 1 year follow up differences of parameters between groups remain unchanged. Fewer hospitalizations was observed in B (10 pts vs 23 pts, $p < 0.01$) Thus B improves diastolic function, MPI, reduces ischemia, NT-pro-BNP levels and hospitalization rate in pts with severe DHF with restrictive transmitral flow pattern.

P948

EFFECTS OF SUPPLEMENTATION WITH SATURATED, MONOUNSATURATED OR POLYUNSATURATED RICH-OILS ON FUNCTIONAL ASPECTS OF HIGH-DENSITY LIPOPROTEIN (HDL) IN HAMSTERS.

F. Maniero[1], A.F. Padoveze[1], T.V. Oliveira[1], M.H.H. Santos[1–3], T.M. Seydell[1], M.L. Guzzo[2], C.H. Azevedo[3], R.C. Maranhão[1–3]. [1]*Lipid Metabolism Laboratory, the Heart Institute (InCor) of the Medical School Hospital* [2]*Bioterism Center, School of Medicine, University of São Paulo* [3]*Faculty of Pharmaceutical Sciences, University of São Paulo*

Background: It is well known that the content of saturated (SFA), monounsaturated (MUFA) and polyunsaturated (PUFA) fatty acids in the diet substantially changes the concentration of LDL-cholesterol (C), but the effects on HDL-C are less marked. HDL–C negatively correlates with cardiovascular events, but other aspects of HDL metabolism should be sought to evaluate the antiatherogneic action of this lipoprotein. Here, the effects of the dietary supplementation with SFA, MUFA or PUFA rich-oils upon the ability of HDL to simultaneously receive the major lipid classes, the size of HDL particles and the activity of HDL-associated paraxonase 1 (PON 1) were tested in hamsters. **Methods:** Twenty male hamsters were fed a regular chow during 4 weeks. Group 1, 2 and 3 received respectively, daily supplementation of 0.75 ml coconut (SFA), soybean (PUFA), or olive oil (MUFA), through gavage. Then the animals were sacrificed and blood samples collected for determination of plasma lipids, PON1 activity, HDL diameter. Simultaneous transfer of free cholesterol (FC), cholesteryl esters (CE), triglycerides (TG), and phospholipids (PL) from an artificial lipidic nanoemulsion to HDL was performed in an in vitro assay in which the nanoemulsion doubled labeled with PL and CE or FC and TG was incubated with plasma during 1 h and the radioactivity was counted in the HDL fraction after chemical precipitation. **Results:** Plasma total, HDL and non-HDL-C and triglyceride levels were similar between the three groups. Also, HDL diameter, PON1 activity and the transfer rates of FC, TG and PL did not differ among the groups. The transfer rate of CE was smaller in the MUFA group than in SFA and in the PUFA groups. **Conclusion:** In the hamster, greater capacity of HDL to receive CE in the MUFA group was the only parameter in which a change in the HDL status was observed by supplementing the diet with different fatty acids. Whether this finding corresponds to increased antiatherogenic action of the lipoprotein by MUFA ingestion should be tested in future studies

TABLE. PLASMA LIPIDS, PARAOXONASE 1 ACTIVITY, HDL DIAMETER AND ABILITY TO RECEIVE LIPIDS OF HDL, FROM NANOEMULSION, EXPRESSED BY LIPID TRANSFER %, IN HAMSTERS SUPPLEMENTED WITH COCONUT, SOYBEAN OR OLIVE OIL.

	Coconut oil group (n=9)	Soybean oil group (n=7)	Olive oil group (n=4)
Cholesterol (mg/dL)			
Total	124±63	94±11	101±21
Non-HDL	96±63	69±9	77±21
HDL	28±5	25±5	23±6
Triglycerides (mg/dL)	125±49	87±13	129±34
Paraoxonase (nmol.mL-1.min-1)	67,3±15,3	69,7±8,1	72,0±18,6
HDL diameter (nm)	7 ± 0.2	6.6 ± 1	8 ± 2.2

Abbreviations used in the table: HDL: high-density lipoprotein. Results expressed as mean ± SD. *p<0.05 compared to olive oil group, Dunn's multiple comparison test, Kruskal-Wallis non-parametric ANOVA test.

P949

RELATIONS OF QT INTERVALS WITH DIFFERENT DEFINITIONS AND COMPONENTS OF METABOLIC SYNDROME IN

B. Longo-Mbenza[1], JB Kasiam On'kin[1], JC Manzala Kumbi[1], A Nge Okwe[2], B Buassa-Bu-Tsumbu[1], N Kangola[2], D Vangu Ngoma[2], S Mbungu Fuele[2], I Longo Phemba[2]. *[1]University of Kinshasa [2]Biostatistics Unit, LOMO MEDICAL Center*

Background Increased QT intervals have been associated with an increased risk for uncomplicated metabolic syndrome in developed societies. Data on these issues are lacking in developing sub-Saharan Africa (SSA) with low lipid profile. Therefore, we investigated the relations of QT corrected (QTc) and non corrected for heart rate (QT) with different components and definitions of metabolic syndrome (MetSyn) in black and Central African patients. **Design** This observational and clinical research was retrospectively carried out among 2950 consecutive patients and a case (n= 400) – control (n=1400) study aged 30–60 years at the Heart of Africa Cardiovascular Center of LOMO Medical, Kinshasa, DR CONGO. **Methods** - QT and QTc intervals were measured on resting electrocardiograms with use of a computer program. Sex, age, smoking, alcohol intake, body mass index (BMI), waist circumference, systolic blood pressure (SBP), diastolic blood pressure (DBP), pulse pressure (SBP-DBP), blood glucose, uric acid, total cholesterol, HDL-cholesterol, triglycerides, LDL-cholesterol and MetSyn defined according to NCEPPATP III, IDF, and locally (MetSyn SSA) were considered. **Results** - There was significant association between age (r=0.360), SBP(r=0.225), pulse pressure (r=0.269), alcohol intake (0.386?0.027 vs 0.371?0.038), MetSyn SSA and QT. QTc was significantly correlated with age (r=0.172), BMI (r =-0.222), triglycerides (r= -0.563), HDL-C (r=-0.456), smoking (0.452?0.019 vs 0.426?0.011), and alcohol intake (0.449?0.017 vs 0.428?0.012). The rates of NCEP ATPIII MetSyn, IDF MetSyn and MetSyn SSA were 0%, 0.3% and 13.6%, respectively. THere was a positive and significant association between age, BMI, triglycerides, uric acid, QT and MetSyn SSA. However, only QT (OR=2.7 95%CI 1.8–3.4; P=0.039), and uric acid (OR=1.248 95%CI 1.04–1.5; P=0.021) were identified as independent predictors of MetSyn SSA using logistic regression analysis. Sex was indifferent on QT intervals and MetSyn SSA. **Conclusions** – We found positive and negative associations between QT intervals and different components of the metabolic syndrome. QT and uric acid were the independent predictors of MetSyn SSA after adjusting for sex, age, BMI and lipids. QT intervals may therefore serve as valuable markers for metabolic syndrome definition and management in sub-Saharan Africa. **Keywords:** QT; electrocardiography, metabolic syndrome; sub-Saharan Africa; risk factors.

P950

The Effect of Homocysteine-lowering B-vitamin Intervention on Angiographic Coronary Artery Disease May Be Adverse - A WENBIT Sub-Study

K. H. Løland[1], A. J. Blix[1], Ø. Bleie[2], E. Strand[2], P. M. Ueland[1], H. Refsum[3], M. Ebbing[1], J. E. Nordrehaug[1–2], O. K. Nygård[1–2]. *[1]Institute of Medicine, University of Bergen [2]Department of Heart Disease, Haukeland University Hospital [3]Institute of Basic Medical Science, Department of Nutrition, University of Oslo*

Background Total plasma homocysteine (tHcy) is an independent risk factor for Coronary Artery Disease (CAD). We tested the effect of tHcy-lowering therapy on the angiographic progression of CAD in a sub-study of the Western Norway B-vitamin Intervention Trial (WENBIT). **Methods** A total of 348 (288 male, mean age 60 ± 10.2 years) undergoing percutaneous coronary intervention at Haukeland University Hospital in 2001 through 2004 were screened for recruitment into this sub-study. Patients were randomized to daily oral treatment with a combination of 0.8 mg folic acid/0.4 mg vitamin B-12 or placebo, and with 40 mg vitamin B-6 or placebo, in a 2x2 factorial design. Coronary angiography was evaluated at baseline and at either scheduled follow-up or clinically indicated hospitalization >90 days from baseline (mean follow-up was 10.1 ± 2.6 months). 183 patients with a total of 309 untreated lesions with a reference diameter > 2.0 mm and a diameter stenosis ≥ 30 % at either baseline or follow-up were included. Quantitative Coronary Angiography (QCA) was performed by two independent observers. Angiographic end-points were Minimum Lumen Diameter (MLD), Diameter Reduction (DR) and estimates of lesion plaque volume. All included segments were analyzed by both observers (Inter-observer Correlation Coefficient 0.90). **Results** At baseline mean (SD) plasma tHcy was 10.5 (7.0) μmol/L, serum folate 14.0 (24.7) nmol/L, cobalamin 467.6 (1333.5) pmol/L, creatinine 73.7 (12.0) μmol/L and cholesterol 5.1 (1.7) mmol/L. Median (25th – 75th percentile) serum CRP was 2.0 (1.0 – 5.8) mg/L. Reference Diameter (RD) of lesions was mean (SD) 3.08 (0.8) mm, MLD 1.92 (0.6) mm and DR 37.6 (9.7) %. At follow-up we found a significant decrease in MLD from baseline (-0.17 (0.4) mm, p<0.001) and a more severe DR (42 % vs. 37.6 %, p<0.001). Treatment with folate/B-12 reduced tHcy by 2.71 μmol/L (p<0.001), but had no effect (repeated measure ANOVA) on change in DR (p=0.16) or MLD (p=0.66), nor did treatment with vitamin B-6 (p=0.26 and p=0.07, respectively). A post-hoc analysis of lesions with diameter reduction >1 SD (defined as rapid progression) from baseline showed a significant relationship with the administration of folic acid. After adjustment for age, gender, BMI and baseline folate levels, lesions in patients treated with folic acid was associated with a more rapid CAD progression (odds ratio (95 % confidence interval) 1.87 (1.10 – 3.18, p=0,020)). **Conclusion** Among patients with established CAD, treatment with folic acid/B-12 or with vitamin B-6 has no beneficial effect on the progression of atherosclerosis measured with QCA. Our findings do however suggest that folic acid supplementation may promote a more rapid atherosclerotic progression observed in a small sub-group of patients.

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Single and delayed defibrillation testing the day after first implantation of cardioverter defibrillator: a reliable and safe strategy

H. Bader[1], N Delarche[1], R Lasserre[1], G Flory[1], **G Estrade**[1].

Introduction : Defibrillation testing (DT) is usually performed during implantation of devices in order to ensure acceptable therapy function, and exposes patient to a longer and risky procedure under general anaesthetic. We have assessed another approach that consists in performing the transvenous implantation under local anaesthetic and a single DT the day after under short general anaesthetic. **Methods :** we have conducted a single-center, prospective study including all patients indicated for first ICD implantation from October 2005 to June 2007. The testing protocol of the defibrillation lead during the procedure included measurements of R wave amplitude, pacing threshold sensing and lead impedance. No instruction was given concerning right ventricle lead position. The day after, chest X-ray and devices interrogation were performed before ventricular fibrillation induction attempt. ICDs were set to provide a first biphasic chock energy ≤ 20 joules and a second one with maximum output. No high energy device were implanted. All data concerning ICDs, DTs, and post-operative follow-up were collected. **Results :**one hundred patients were included with a mean age of 66 years. Most of them were suffering from severe heart failure (mean NYHA class= 2.7±0.6; Left ventricle ejection fraction = 0.27 % ±0.6) from ischemic origin (n=68) and were equipped with CRT-ICD (n=56) with a dual coil system (n=100). Right ventricle lead was predominantly located in septal(n=75) or apical position (n=22) with pacing threshold = 0.8V± 0.4, R wave amplitude =13.9mV±6.5, impedance=823 ohms ±300. Concerning DT, all patient had FV or TV inducible, either by shock on T-wave or high frequency burst.Ventricular arrhythmias were always properly detected by the ICDs. Internal defibrillation failed in two patients ; the problem was solved with shock polarity reversal in one patient, and can repositioning from right to left pectoral placement in the other one.Mean hospitalization time was 3,3 days. A short term follow-up revealed three atrial leads and one left ventricle lead dislodgements, but no defibrillation lead dysfunction. **Conclusion :** Delayed DT the day after implantation seems to be an interesting alternative to conventional approach.

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A Novel Coronary Heart Disease Risk Evaluation and Communication Program Improves Modifiable Risk Factors and Understanding in Patients With Hypertension: The Risk Evaluation And Communication Health Outcomes And Utilization Trial (REACH OUT)

L. Erhardt[1], J.S. Benner[2], R.A. Moller[3], N. Rajicic[3], S.B. Cherry[2], Z. Gaciong[4], E.S. Johnson[5], M.C.J.M. Sturkenboom[6], J. Garcia-Puig[7], X. Girerd[8]. *[1]Lund University, Malmö, Sweden [2]ValueMedics Research, a Unit of IMS Health, Falls Church, VA, USA [3]Pfizer Inc, New York, NY, USA [4]The Medical University of Warsaw, Warsaw, Poland [5]Graunt & Co., LLC, Seattle, WA, USA [6]Erasmus University Medical Center, Rotterdam, The Netherlands [7]Division of Internal Medicine, Hospital La Paz, Madrid, Spain [8]Hôpital Pitié Salpêtrière, Paris, France*

Background: Few studies have investigated the potential benefits of communicating patients' predicted CHD risk to them in clinical practice. **Methods:** REACH OUT assessed whether a non-drug intervention program (INT) to evaluate and communicate predicted CHD risk could lower patients' Framingham 10-year CHD risk versus usual care (UC). REACH OUT was a 6-month, prospective, controlled, cluster-randomized, multinational study among hypertensive patients (45–64 years) with no cardiovascular disease or diabetes, and Framingham 10-year CHD risk ≥10%. Patients received INT or UC and changes in modifiable risk factors, predicted CHD risk, and treatment goal attainment were measured from baseline to Month 6. Patients receiving INT also completed a Knowledge, Attitudes, and Behavior Questionnaire (KAB) at baseline and Month 6. This analysis focused on changes in modifiable CHD risk (relative % risk in excess of that for a non-smoker of the same age and sex, not receiving antihypertensive treatment, with "normal" blood pressure [BP] and cholesterol) and patients' understanding of the importance of CHD risk reduction (based on responses to the KAB). **Results:** Mean modifiable risk was reduced by 55% with INT (192% to 87%, n = 524), and 47% with UC (221% to 117%, n = 461; P=0.034 for INT versus UC at Month 6, after adjusting for baseline values). Overall, INT patients reported an increase in their understanding of the importance of exercise, a healthy diet, medication compliance, and reducing BP/cholesterol. Changes in modifiable risk factors contributing to reductions in predicted modifiable risk were generally greater among INT than UC patients: systolic BP was reduced by –20.3 versus –15.4 mmHg (P=0.001; baseline systolic BP 157 mmHg INT; 159 mmHg UC), and total cholesterol by –6.3 versus –4.4% (P=0.073; baseline total cholesterol 228 mg/dL in both groups), for INT versus UC, respectively. At screening approximately 50% of patients in each group smoked; among these patients smoking cessation was higher with INT (29%) than UC (21%; P<0.05). Among INT patients, 48% met BP goal (<140/90 mmHg), 52% low-density lipoprotein cholesterol goal (<130 mg/dL), and 25% both goals, versus 32%, 43%, and 14% of UC patients (P=0.003, P=0.005, P=0.002, respectively, INT versus UC). Although weight was not considered in the

Framingham calculation, weight was reduced significantly more with UC, with a between group difference of 0.8 kg (–1.1 versus –0.4 kg; P=0.015). Improvements observed with INT versus UC do not appear to be related to increases in medication use, which were similar in both groups. **Conclusions:** Reductions in modifiable risk factors were larger in patients receiving INT than UC. This benefit may be due to the reported increase in understanding of the importance of risk factor modification, and adherence to lifestyle recommendations and drug therapy. However, residual modifiable risk remained in both groups; additional therapeutic intervention to further lower CHD risk in patients with multiple modifiable risk factors is therefore required.

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TOBACCO CONSUMPTION AND PREVALENCY IN THE PERSONNEL OF A HOSPITAL

D. Morisse[1], D. Avayu[1], G. Lewy[1], J. Mitelman[1], J. Goral[1], C. Martorano[1], J. Gallo[1], C. Froimovich[1]. [1]*HOSPITAL DE AGUDOS DR TEODORO ALVAREZ. BUENOS AIRES, ARGENTINA*

Background: The consumption of 20 daily cigarettes causes diminution of 6–23 years of life expectancy, increases labour absenteeism in a 20% and produces a 33% more of consultations **Objective:** To observe the prevalence of tobacco consumption in the medical staff and non doctor (nurses, aids, decrees, administrative etc.) in a hospital **Materials:** Study of cross section. 359 reports with 22 questions, anonymous, made randomly on year 2005, in medical personnel or not of the Hospital, in Services and dependencies of the same one. Definition of smoker according to Centre Disease Control (CDC) of the U.S.A.: "that smoked at least 100 cigarettes in all its life" or "the person who smoked at least a cigarette in the last 30 days" by World Health Organization **Results:**1,080 surveys: 38.3% smokers, 60% women; 36,4% doctors; Starting age: 27.2% less than 15 years; 63.2% of 16–20 years; 8.8% of 20–25; 0.8% more than 25 years; initial Age: 27.2% of 0–5 daily cigarettes; 14.4% of 6–10; 16% of 11–15; 31.2% of 16–20; 7.2% between 21–40; 4% more than 40 per day; Time of consumption: 12.6% less than 5 years; 25.2% of 6–10 years; 10.8% of 11–15 years; 21.6% of 16–20 years; 7.2% of 21–25 years; 11.7% of 26–30 years; 4.5% of 31–35 years, 6,3% more than 35 years; Time between wake up and first cigarette consumption : 10,2% less than 5 minutes, 64% after one hour Causes: 37,2% to please, 26,8% the surroundings smoke; Cease: 59.2% left a year more or; 47.2% left in next 5 years; Of the personnel: 78,4% exhibition to the active or passive tobacco is detrimental; 77.6% would have to be prohibited to smoke in closed places, 74,8% would have to be prohibited to smoke in the hospital; Place: 39.2% do not smoke within the hospital; Predisposition: 74.4% to collaborate with the project "free of smoke hospital", "24% would have to be able to smoke in attention to patient's areas. From non-smokers (47.7%) the 52,7% tried a cigarette at least once; 86% considers that smoking should be forbidden indoors and 8,7% that it should be allowed in some places; 98% believes that smoking should be forbidden in all hospital areas; 93.9% are willing to cooperate with the "free of smoke hospital" project. **Conclusions:** 1) High Tobacco consumption and prevalence in Hospital.2) High incidence of diseases related to consumption, with the corresponding increase of the absenteeism and consequent diminution of the attention quality. 3) The great majority of reports, (96%) think that smoking should be forbidden in all Hospital areas. 4) More than 10% does not wait nor five minutes after waking up to ignite a cigarette. 5) High prevalence of Medical smokers with greater women percentage.

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Obesity and Hypertension

Z. Brankovic[1]. [1]*Medicinski centar Sveti Luka Smederevo*

Obesity is a chronic metabolic disorder occuring when energy intake is higher than energy consumption. Hypertension is closely linked to obesity, as a 10% increase of body mass cause an increase of arterial pressure of 6,6 mmHg. Hypertension is caused by factors such as genetic predisposition, life style/nutrition, physical non-activity, stress, smoking. Unappropriate nutrition causes obesity which then causes hypertension. The objective of work is to ascertain that body mass increase leads to increase of blood pressure. Test was performed on 750 persons out of which 385 were female and 365 were male aged 30–65. Height, body mass and pressure were measured for each of them. Based on BMI, obese persons with hypertension and persons with hypertension were singled out and compared to non-obese and persons with normal tension. **Results** of the test show: out of the total number of male 150 were obese (41,09%) and 72 had obesity and hypertension (48%). 215 males had a normal body weight (58,9%) while 40 (18,6%) had normal body weight and hypertension. Out of the total number of females 184 were obese (48 %) and 93 had obesity and hypertension (50,5%). 201 females had a normal body weight (52%) while 48 (23,8%) had normal body weight and hypertension. Analysis of data show a greater participation of hypertension in obese than in persons with normal body weight. **Conclusion:** obesity is a risk factor for the development of hypertension

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HEALTH CAMPAIGN: A METHOD OF SCREENING AND EDUCATION IN CARDIOVASCULAR HEALTH.

A.C. Santomauro Jr[1], M.R. Ugolini[1], L.Z.P. Oliveira[1], I.A.B. Bincoleto[1], F.M.B. Rossi[1], B.S. Santoro[1], E.R. Suarez[1], C. Nagaoka[1], A.C. Santomauro[1], C. Ferreira[1]. [1]*FACULDADE DE MEDICINA DO ABC*

Introduction: The knowledgement of the prevalence of systemic arterial hypertension and its risk factors can be of great value to health policy and planning activities. Therefore, in Brazil are carried out "campaigns of health" with a purpose (view) to educate and guide patients to specialized medical care. The intensive control of blood pressure (BP) demonstrated to be effective in reducing complications of heart, kidney, brain and peripheral vascular. **Objectives:** Appraise the homogeneity of the population that attends campaigns for health in Santo André, Sγo Paulo, Brazil. **Methods:** During the III and IV Health Fairs of the Faculty of Medicine ABC, the League for Prevention of Coronary Diseases collected data about habits and risk factors for coronary disease, and arterial pressure was measured via a sphygmomanometer. **Results:** The results were statistically similar with the exception of sex and ethylism, which obtained p $<$0.05. 143 patients (96 female, 47 male) were examined in 2006 (age 47.6 years) and 211 patients (119 female, 92 male) in 2007 (age 54.19 years). Respectively, 2006 and 2007: smokers 18.2% and 14.2%; sedentarism 51.0% and 58.8%; presence of family history for artery disease 54.5% and 52.6%; systemic arterial hypertension early- diagnosticated 37.8% and 45,0%; diabetes mellitus 15.4% and 15.2%; demonstrated knowledge of possible dyslipidemia 25.9% and 34.6%; diet with less sodium intake and hypercholesterolemic diet 22.9% in both. Of these, 49% in 2006 and 59.7% in 2007 were using antihypertensive drugs, anti-diabetes drugs and drugs that lower cholesterol. Finally, 22.4% (2006) and 11.8% (2007) declared as drinkers. **Conclusion:** Campaigns of health shown to be effective as a method of screening of the population diagnosed with systemic arterial hypertension to prevent increase in morbidity and mortality.

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PROGNOSIS INFLUENCE OF LEISURE-TIME PHYSICAL ACTIVITY PRACTICE PRIOR TO CORONARY ARTERY BYPASS GRAFT SURGERY

R. Nery[1], I. Mahmud[1], J. Barbisan[1], L. Smidt[1]. [1]*Instituto de Cardiologia do RS / FUC*

Background: Practice of physical activities is an important factor in prevention and treatment of several cardiovascular diseases. The impact of physical activity in the prognosis of the coronary artery bypass graft surgery (CABGS) has not been defined yet. **Aim:** To assess the impact of preoperative leisure-time physical activities in the prognosis of patients submitted to CABGS. **Method:** Cohort with 202 patients submitted to CABGS between January 2006 and Mach 2007. The patients were classified as active and sedentary, in relation to preoperative physical activities practice. The groups were followed up in relation to the occurrence of major cardiac events (MACE). **Results:** The patients were 62±10 years old and 134 (66%) were male. The group that was used to practicing leisure-time physical activities until two weeks before surgery presented 78% less chance (OR 0,22; CI 95%: 0,09 to 0,51;p$<$0,01) of having MACE in relation to the group of sedentary patients. Hospitalization was shorter in the active group in relation to the sedentary one, 8 (8–9) and 9 (8–13) days (p$<$0,001), respectively. **Conclusion:** Physical activities are an important outcome predictor, favorably influencing the prognosis of CABGS.

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CORRELATION BETWEEN EPIDMIOLOGICS FACTORS AND DIABETES MELLITUS IN PATIENTS SUBMITTED TO MYOCARDIAL REVASCULARIZATION SURGERY

A.C. Santomauro Jr[1], L.Z.P. Oliveira[1], M.R. Ugolini[1], I.A.B. Bincoleto[1], C. Nagaoka[2], W.A. Amorim[3], J. Albuquerque[4], A.C. Santomauro[1], A.T. Santomauro[1–4], F. Fraige Filho[1–4]. [1]*FACULDADE DE MEDICINA DO ABC* [2]*UNIVERSIDADE FEDERAL DE SÃO PAULO* [3]*UNIVERSIDADE DE TAUBATÉ* [4]*HOSPITAL BENEFICÊNCIA PORTUGUESA DE SÃO PAULO*

Introduction: Individuals with diabetes mellitus (DM) have cardiovascular morbity and mortality increased. In USA, approximately 25% of the procedures for revascularization myocardial are done in diabetics patients. These have higher mortality perioperative, besides increased need for re-revascularisation at great risk which must reestenose. **Objective:** Correlate epidemiological factors in a sample of patients undergoing myocardial revascularization in relation to the DM. **Methods:** Analysis of the records of 158 patients who were referred to surgery for myocardial revascularization, since February until October of 2004 in Beneficência Portuguesa Hospital, Sγo Paulo, Brazil. **Results:** According to the records, 50(31,6%) patients were diabetics and 108(65,3) were nondiabetics or do not known the diagnostic. Women were 46(29%), being 16(34%) diabetics and 30(65%) nondiabetics. Men were 112(71%), being 34(30%) diabetics and 78(70%) nondiabetics. The mean age was 61,28±10,3 years. The mean of body mass index (BMI) were 26,5±4,2; 27,4±4,2 for diabetics and 26,1±4,1 for nondiabetics. The epidemiological factors: BMI, gender, type of therapy, and the presence or absence of DM associated with the cause of myocardial revascularization, did not show statistical significance (p$>$ 0.05), except the correlation between smoking and DM associated with revascularization (p $<$0.05). **Conclusion:** Diabetic smokers are the ones that realize more myocardial revascularization surgery. They have more risk to myocardial revascularization than the no smokers, what suggests that tabagism is a strong risk factor to myocardial ischemia, independently if diabetes is present or no.

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Secondary Prevention of Cardiac Sudden Death with Implantable Cardioverter-Defibrillator in Patients with Chronic Chagasic Cardiomiopathy and Preserved Left Ventricular Function

PR. Salvador[1], DD Nascimento[1], SA Fakhouri[3], AS Fakhouri[1], AC Silva[1], ES Resende[1], CS Melo[2], FR De Fazzio[1], FH Silva[1], EE Kanaan[1]. [1]*Federal University of Uberlandia* [2]*Federal University of Triangulo Mineiro, Uberaba* [3]*University of São Paulo Medical School, Ribeirão Preto*

Background: The incidence of Cardiac Sudden Death (CSD) among general population is high, with almost 300.000 episodes per year. It represents 50% of mortality in subgroups of patients with heart failure and episodes of Sustained Ventricular Tachycardia (SVT) with instability. In Chagas Disease there are no well established criteria for high-risk patients for CSD. The high prevalence of Chronic Chagasic Cardiomiopathy (CCC) in our country and the incidence of ventricular arrythmias even in patients with preserved left ventricular function in this particular population is an object of study and concern. **Methods:** Implantable Cardioverter-Defibrillator (ICD) devices were used in eight patients carriers of CCC, with preserved left ventricular function and aborted CSD in the presence of

Ventricular Fibrillation (VF) after external defibrillation in the Emergency Room. After clinical evaluation, Echocardiogram (ECHO) and Coronariography with Ventriculography were performed and proved to be normal. This series of cases was conducted by Department of Electrophysiology at Federal University of Uberlandia in Brazil. After 1 year in use of amiodarone (400 mg/d) and carvedilol (12,5 mg/d), we collected the data displaced in the following table:

PATIENTS	GENDER	AGE(YEARS)	EJECTION FRACTION (%)	FUNCTIONAL CLASS	APPROPRIATE THERAPIES (SHOCK)
1	M	48	71	I	0
2	M	61	58	I	2
3	F	55	59	I	1
4	M	65	49	I/II	3
5	M	60	61	I	0
6	F	69	50	I	2
7	M	49	51	I/II	3
8	M	56	58	I	1

M=Male F=Female

Conclusions: Patients with lower Ejection Fractions and worst Functional Class, had a greater number of appropriate therapy. Among patients with Chronic Chagasic Cardiomiopathy and preserved left ventricular function that had survived an episode of cardiac sudden death, the number of appropriate therapies in the course of the disease, suggest the use of ICD as Secondary Prophylaxis.

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Precise filtered-QRS limits tracking in signal-averaged electrocardiography: Comparison between classical ESC vs. new derivative-based method

O. Nasario-Junior[1], P. R. Benchimol-Barbosa[2], J. Nadal[1], **C. Miranda[2]**, G. N. Gobbi[2], F. P. Vilela[2], J. Barbosa-Filho[2], I. Cordovil[2]. *[1]Federal University of Rio de Janeiro, Rio de Janeiro, Brazil [2]Gama Filho Univ./National Inst. of Cardiology, Rio de Janeiro, Brazil*

Purpose: QRS complex limits are subject to variation due to residual noise in signal-averaged electrocardiogram (SAECG). This study compared a technique for improving the accuracy of QRS complex limits tracking, based on successive signal derivation (DER), with classical statistical method. **Methods:** Study population: Group 1– 18 healthy volunteers ([mean ± SD] 52.1 ± 10.2 y.o) with no cardiac disease; Group 2– 18 subjects with spontaneous sustained monomorphic ventricular tachycardia (58.7 ± 12.9 y.o.) confirmed by electrophysiological study. No had complete bundle branch block. Study protocol was ethically approved. SAECGs were digitally processed and analyzed according to European Society of Cardiology (ESC) guidelines in vector magnitude (VM) high-pass filtered at 40 Hz. In DER, SAECG signal was successively derived toward the end of the ventricular activation seeking for next higher derivative inflection point, in which absolute amplitude was equal to RMS baseline noise (Fig. A). QRS duration was assessed by classical ESC (threshold-based) and DER methods and compared by Student-t test. Sensitivity, specificity and predictive values were assessed. Alpha level was 0.05. **Results:** According to ESC and DER methods, respectively, QRS duration was, in Group 1, 105.0±17.9ms and 96.3±12.5ms ($p<0.05$) and, in Group 2, 136.5±21.0ms and 121.9±15.9ms ($p<0.05$) (Table 01). ESC and DER methods showed, respectively, 64.3% and 85.7% positive predictive value ($p<0.05$), 58.6% and 59.1% negative predictive value (p=NS) (Table 02), 50.0% and 33.3% sensitivity (p=NS), and 72.2% and 94.4% specificity ($p<0.05$) (Table 03). **Conclusion:** DER methods precisely tracks QRS limits in controls and in subjects with ventricular tachycardia, increasing positive predictive value and specificity as compared to classical method.

TABLE 01: MEAN AND STAND-SESVIATION OF QRS DURATION IN EACH GROUP:

	Group 1	Group 2
ESC	105.7 ± 17.9 *	136.5 ± 21.0 *
DER	96.3 ± 12.5 *	121.9 ± 15.9

* $p<0,05$ ESC vs DER.

TABLE 02: POSITIVE (PPV) AND NEGATIVE (NPV) PREDICTIVE VALUE IN EACH GROUP (%):

	Group 1	Group 2
ESC	64.3 *	58.6
DER	85.7 *	59.1

TABLE 03: SENSITIVITY AND SPECIFICITY VALUE FOR EACH GROUP (%):

	Group 1	Group 2
ESC	50.0	72.2 *
DER	33.3	94.4 *

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ELECTROCARDIOGRAPHIC ALTERATIONS OF PREVALENCE IN YOUNG SPORTMEN SOCCER AMATEUR CATEGORY, CORRELATION WITH DOPPLER CARDIAC

I. Diaz[1], D. Avayu[1], D. Morisse[1], C. Seidler[1], J. Fuse[1], J. Goral[1], L. Rodas[1], A. Cardozo[1], A. Cler Pereyra[1], C. Froimovich[1]. *[1]CLINICA SPARTA SYGNUS, BUENOS AIRES. ARGENTINA*

Background: The 12-lead ECG may be used in the diagnosis of cardiovascular disease in young athletes and is a practical and cost-effective for population-based preparticipation screening. **Objective:** To evaluate if the findings of electrocardiography alterations in the 12-lead ECG, are correlated with the structural changes and hemodynamic of the Doppler cardiac, in young sportmen (YS) and if the electrocardiographic finding of Left Ventricle Hypertrophy or growth of Left Ventricle (Sokolow of Index) is correlated with Echo Cardiac. **Materials:** Retrospective analysis of Clinical Histories, evaluated the Echo Cardiac Doppler of 491 federated YS to clubs of Argentina Football Association, all men, evaluated in 20 clubs between 2000–2006 with regular, average weekly training of 6 hs. Excluding official match. Measurements: Right Ventricle, Diameter Diastole Left Ventricle, Systole Diameter Left Ventricle, Interventricular Septum, wall Posterior, Aortic, Left Atrial, shortening Fraction, Ejection Fraction, Mass Left Ventricle, Mass Index Left Ventricle, wave E y A, relation E/A, deceleration time (D/T), measurements flow by Mitral valve,12-lead ECG, Arterial Tension, Height, Corporal Weight, Body Mass Index. Groups. (years): 7/8/9/10/11/12/13/ 14/15/ 16/17. **Results:** Findings of 12-lead ECG: Rate Sinusal (82%) BCRD (3.4%) BIRD (18.9%) Left Atrial Rate (3.2%) low atrial rate (LAR) (12%) Nodal Rate (0.2%) A/V Block 1st G (11.2%) Wenckebach Block A/V 2nd (0.6%) HBP (0.6%) HBAI (2.6%) Extra systoles: SV (8.9%) V (7%) WPW Syndrome (2.2%) short P/R (7.2%) Brugada Syndrome (0.2%) Clear Infantile (1.5%) alteration of repolarization ventricular inferior (ARV) (9.1%) Q deep (2%) Precocious Repolarization (PR) (5.3%) LAR + ARP inferior (3.6%) PR+ ARV Inferior (1.8%) MAR (0.8%) Sinusal Bradycardia (49.8) marked Sinusal Bradycardia (5.5%). Congenital Cardiopathies (CC) Findings of the Doppler cardiac: Permeable Oval Foramen (12%), Atrial Septal Defect (18%), Pulmonary Stenosis: (5.5%) Bicuspid Aorta (22%) Subaortica Membrane (2.8%) Mitral Valve redundant plus prolapsed Mitral valve (5.5%) Coarctation of the Aorta (2.8%), Ventricular Septal Defect (8%), persistent Ductus Arteriosus (59.8%), Dilatation Pulmonary Artery (1.4%) Hypertrophy SIV (11%), other findings: Congenital anomaly of artery coronary (1) Epstein Disease (1), Dextrocardia (2), Myocardiopathic Hypertrophy (MCH) (3) (YS) respectively **Conclusions:**1) There was no correlation between the alterations of the 12-leads ECG and the Doppler Cardiac. 2) The ECG is a good method to evaluate physical aptitude along to clinical examination but we think that it's insufficient for the diagnosis of (MCH). 3) The (CC) (Ductus or small CIA, or FOP) diagnosed by Cardiac Doppler did not have relation with the 12-leads ECG alterations. 4) These electrocardiograph findings motivate that a tendency exists, independently of the consensuses to over determine the proportions the demand of echocardiography.

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Exercise induced elevation of NT-pro-BNP is associated with subsequent coronary events in men with negative stress-test.

K.G. Adamyan[1], A.L. Chilingarian[1], A.V. Astvatsatryan[1]. *[1]Institute of Cardiology*

NT-pro-BNP is a reliable diagnostic and prognostic marker of heart failure and recently also has been shown the relationship between NT-pro-BNP and ischemia. We assumed that NT-pro-BNP might be elevated at the peak exercise stress-test (EST) in persons with negative EKG and EchoCG EST who are at risk of subsequent coronary events. **Methods:** 256 men without known history of CAD aged 47±15 yrs with negative EKG and EchoCG sub maximal EST and with age matched normal NT-pro-BNP levels at rest (median 30.4 pg/ml, interquartile range 19.7 – 47.8 pg/ml) were selected for 3 year follow up. EST recordings were analyzed by two experts unaware of the study aims. NT-Pro-BNP was measured before EST and after 5 min walk at the peak of submaximal EST and ΔNT-pro-BNP was calculated. **Results:** 72 men develop NT-Pro-BNP elevation at the EST peak (ΔNT-pro-BNP 9.7±3.2 pg/ml). During follow up 28 (38.9%) of them and only 26 (14.1%) of the rest 184 men without NT-Pro-BNP elevation at the peak EST developed at least one coronary event ($p < 0.0001$). Cases were more frequently diabetics, smokers, had higher body mass index, systolic blood pressure and serum total cholesterol. Multivariable logistic regression analysis showed NT-pro-BNP was strongly associated with coronary events risk (third vs first tertile, odds ratio (95% CI) 3.27) independent of risk factors. Thus, NT-pro-BNP elevation after EST is powerful and independent predictor of subsequent coronary events in middle aged men without history of CAD, and negative EST.

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ARE CHANGES IN THE ARTERIAL WALL RESPONSIBLE FOR THE DECLINATION OF MENTAL ACTIVITY IN LONGEVOUS INDIVIDUALS ?

E. Izcovich[1], A Lescano[1], A Izcovich[1], V Daru[1], R Izcovich[1], R Ferreyra[1]. *[1]SANATORIO TRINIDAD MITRE*

Aims: To find out whether there is diagnostic criteria in the arterial wall that determines if changes in the intima-media thickness (IMT) as manifestation of arterial remodeling, allow to predict the preservation of cognitive activity in longevous patients, independently of age, ethnicity and cardiovascular risk factors as expression of atherosclerotic disease. **Methods:** 100 patients of more than 70 years old were included prospectively, all of which attended the echocardiography lab consecutively between September 2005 and January 2006. Population was classified in 2 groups through the evaluation of cognitive activity by minimental test (MMT). Those who had a score of >25/30(Group 1: adequate cognition) and <10/30(Group 2: cognitive deterioration). Patients with intermediate results of the test were not included. Age, ethnicity, sex and major cardiovascular risk factors such as smoking, hypertension, diabetes and dyslipemia were evaluated using Framingham criteria. The measurement of IMT was performed following the Pignoli and coll. method, with a Sonosite Micromax equipment with lineal 7/10 MHz transducer. Images were obtained by an only operator and the analysis was made off line with a Sonocalc 3.0 software package. The cutting value of IMT used was 0.83 mm, based on previously published data of equal sex and age. **Results:** 24 patients were excluded due to an intermediate value of MMT or the presence of plaque in the carotid, the remaining 76 patients were divided into two groups, Group 1: 55 people and Group 2: 22. The statistical analysis was made with Mann-Whitney Rank Sum test. Risk factors did not show significant differences between groups. Hypertension (p=0.35), Dyslipemia (p=0.71), Smoking (p=0.69) and Diabetes (p=0.22). A significant difference was observed in relation to age (Group 1: 83 years old ± 5 and Group 2: 80 ± 8) where p=0.03. IMT analysis showed a meaningful difference between the two groups: Group 1: 0.8±0.13mm and Group 2: 0.97±0.12mm, $p<0.001$. **Conclusion:** Age, sex, ethnicity and cardiovascular risk factors did not proved as fundamental elements in the preservation of intellectual activity among a group of elderly patients, however, the existence of "youthful" IMT values probably related to a genetic pre-conditioning did point out a strong association

P964

Hypertrophic cardiomyopathy: Case report

E. R. F. L Moraes[1], F. S. V. Jardim[1], G. T. Gama[1], F. L. Vieira[1], F. J. B. Silva Filho[1], **D. R. Almeida[1]**. [1]*UNIFESP - Universidade Federal de São Paulo*

Hypertrophic cardiomyopathy (HCM) is an inherited cardiac disease characterised by anatomic changes of the heart musculature and cardiac arrhythmias, predisposing to sudden cardiac death (SCD) at a relatively young age. We report a case of a 21 year old young adult male who presents assymptomatic hypertrophic cardiomyopathy (HCM) during cardiac murmur investigation. He works with toolmaking and practice sports regurlarly. At admission, he reported no cardiac problems at any time, no symptoms (eg. syncope, dizziness, palpitation, angina or dyspnea), no familiar premature sudden cardiac death, no previous hospitalization or surgery. No smoke, alcohol or drug addiction. At exam, we found isolated important meso-systolic cardiac murmur. Arterial blood pressure, heart rate, periferical pulses and jugular venous pressure without abnormalities. We conduct the patient considering the high risk sudden death stratification with ECG, echocardiography, 24-hour ambulatory (Holter) ECG recording, Magnetic resonance imaging (MRI), and an exercise test. ECG presenting sinusal rhythm, deepest S wave in lead V1 to V3 and tallest R wave in lead V5 or V6 suggesting left ventricular hypertrophy. QRS axis right deviation suggesting right ventricular hypertrophy. The echocardiography images demonstrates interventricular septum (IVS) with profound septal hypertrophy, with a measured thickness of 45mm. The left ventricular free wall had a measured thickness of 15mm, maximum left ventricular systolic gradient of 66mm, medium left ventricular systolic gradient of 27mm and maximum right ventricular systolic gradient of 26mm. The 24-hour ambulatory (Holter) ECG recording reports sinusal rhythm, $<$1% of premature atrial and ventricular contractions. Magnetic resonance imaging (MRI) presenting interventricular septum (IVS) thickness of 40mm with severe left outflow tract obstruction. The patient performes treadmill exercise test with Bruce protocol and the peak work rate achieved by the patient in METs is adequate for age. Any abnormal signs or symptoms occurred during or after the test. The ECG data noted no ocurrence of arrhythmias, nor ischemia was demonstrated by ECG changes. After sudden death risk stratification, the patient undergoes cardiological evaluation for ICD pacemaker, taking atenolol 25mg per day. Intense exercise at work or competitive sports were not indicated. After one month, he persist assymptomatic.

P965

Assessment of Stent Expansion By a Novel Angiographic Technique: Stentboost

M Albertal[1], A Candiello, F Cura, L Padilla, P Perez Baliño, S Jozami, J Thierer, J Belardi. [1]*Instituto Cardiovascular de Buenos Aires*

Background: Stent under-expansion is associated with stent thrombosis and restenosis. The use of stentboost (SB), a novel motion-corrected image angiographic technique, enables accurate evaluation of stent diameter following angioplasty. **Objective:** Compare the assessment of percentage of stent expansion (% SE) by two different methods: SB and conventional quantitative coronary angiography (QCA). **Methods:** Stent diameters were measured at the proximal, mid-portion and most distal portion by both techniques. QCA reference segments were used to assess percentage stent expansion by both techniques. In 45 stents implanted, a total of 135 segments were measured by both techniques. **Results:** SB had higher %SE, demonstrating a significant difference at the proximal 15.7%, mid-portion 10.2% and distal site of the stent 10% (all medians with $p<0.001$). SB and QCA correlation was weak at each stent segments (proximal $R2=0.24$, $p=0.001$; mid-portion $R2=0.15$, $p=0.007$; and distal $R2=0.16$, $p=0.005$). **Conclusions:** In comparison with SB, conventional QCA evaluation underestimates the percentage of stent expansion. The use of invasive imaging techniques may help understand this discrepancy.

P966

Clinical Features of Patients Undergoing CABG who had Prior Percutaneus Coronary Stenting.

A. Vizcarra Diaz[1], R. Marenchino[1], L. Diodato[1], V. Cesareo[1], A. Domenech[1], D. Bracco[1]. [1]*Division of Cardiovascular Surgery, Hospital Italiano, Buenos Aires, Argentina.*

Introduction: More often we have to operate on patients who had a percutaneous revascularization procedure performed before. Thus, we sought to assess the clinical features and early outcomes of patients undergoing coronary artery by pass grafting (CABG) surgery with previous percutaneous coronary interventions (PCI) with stent. **Methods:** Consecutive patients undergoing first time CABG with previous PCI with stent were included. We collected data on demographics, EUROSCORE (ES), previous myocardial infarction (MI), left ventricular systolic function (LVSF), time interval between procedures, extent of coronary artery disease (CAD), emergency condition, use of preoperative intra-aortic balloon pump (IABP), mayor post operative complications, and in hospital mortality. We excluded patients with balloon angioplasty alone, previous CABG and surgery different to CABG. **Results:** Between January 2005 and June 2007, 77 patients were included. Median age was 65 years, sixty six patients (85%) were male and the incidence of diabetes was 28%. Forty eight percent of the patients had low ES score. The median time interval between PCI and CABG was 10 months. The incidence of a new left mainstem disease was 26 % with 72% of intrastent lesions. There was moderate to severe LV dysfunction in 21% of the patients prior to PCI (16 patients), and 36% prior to CABG (28 patients). Forty one patients (53%) had previous MI at the moment of CABG, half of them had worse LVSF compared with those patients without MI. Seventy patients (91%) received an anterior descending artery grafting and 67.5% three or more by passes. One third of the patients were on emergency and used IABP preoperatively. All cause mortality in hospital was 7.8% with a rate of mayor postoperative complications of 24.6%; patients who suffered complications had worse LVSF, and higher ES. **Conclusions:** In this descriptive study of patients undergoing coronary artery by pass grafting (CABG) surgery with previous percutaneous coronary interventions (PCI) with stent, we found that eventhough half of the patients had low ES score, in hospital mortality was 7.8% with a high rate of mayor postoperative complications. The incidence of pre-operative moderate to severe LVSF deterioration was 36% with a significant deterioration after PCI and more previous MI. Both moderate to severe LVSF deterioration and high ES values were more frequent in complicated patients.

P968

Assessment of left ventricle sublinical dysfunction and surgical outcome in asymptomatic severe Mitral regurgitation. Study of Vector velocity Imaging

J. Moreno[1], MA. Garcia[1], V. Celorrio[1], E. Perez[1], R. Pereira[1]. [1]*HOSPITAL GENERAL UNIVERSITARIO " [4]GREGORIO MARAÑON"*

Background: Patients with severe Mitral Regurgitation remains asymptomatic with left ventricle subclinical disfunction for prolonged periods of time due to adaptative remodelling of left cavities, and patient adaptation to the disease. Irreversible damage of myocardial fibers and left ventricle dilatation is a very important predictor of post-surgical morbidity and mortality. Strain rate obtained from a relative new technology, Vector Velocity Imaging could help to evaluate sublinical left ventricle dysfunction. **Objective:** Evaluate post-surgical outcomes with strain rate, and ejection Fraction of left ventricle in patients with previous severe mitral insufficiency. **Methods:** We performed a study of 32 patients, with severe non-Ischaemic Mitral regurgitation of chronic evolution, all were asymptomatic NYHA class I, had ejection fraction $>$ 60%, and end-systolic diameter $>$ 45mm. We calculated peak S values of Strain Rate of left ventricle, divided in 6 segments in pre-surgical stage. we repeated complete Echocardiographic studies including strain rate data after 4 months of the surgical event. A total of 12 patients were excluded: 8 patients had low quality images, 2 patients with coronary artery disease, and 2 dead patients. We finally enrolled 20 patients (14 female and 6 male). These were divided in two groups after 4 months of surgical event Group 1) patients with EF of 60% or higher, and group 2) patients with EF of $<$ 60%. **Results:** (Group 1) We found 11 patients with normal EF and (Group 2) nine patients with EF $<$ 60% (mean decrease of 10% p 0.024), in group 2 there was less decrease in end-systolic diameter (p 0.001), and Lower peak S values of strain rate in lateral wall: basal, medium and apical segments with (p 0.004, 0.019, 0.029 respectably) and in Septal wall in apical segment (p 0.001). We also found that patients with decrease ejection fraction, in strain rate data obtained in presurgical stage already had lower peak S values with statistical significance in Septal wall (basal and medium segments p 0.015 and p 0.050 respectably) and lateral wall in medium segment p 0.028. **Conclusion:** We found that Strain rate could be a better tool than EF to evaluate left ventricle sublinical dysfunction.

P969

Baseline plasma levels of nitrites/nitrates in patients with vasovagal syncope

G.A Ruiz[1], **S Sinigaglia[1]**, R Hermes[1], R Chirife[1], M Capula[1], H Grancelli[2], M Nogues[2], MC Tentori[1]. [1]*HOSPITAL JUAN A fERNANDEZ* [2]*INSTITUTO FLENI*

Nitric oxide (NO) formed in the vascular endothelium produces, among other effects, a strong vasodilation. In order to evaluate the baseline values we measured the plasma levels of its metabolites, nitrites and nitrates (NOx) before a Head-up tilt test (HUT) was performed. Twelve patients with vasovagal syncope and HUT (+) (mean age: 23 $\pm$ 5 years) and 13 healthy volunteers with HUT (-) (mean age: 24 $\pm$ 5) were included. Blood samples were obtained during the baseline stage for NOx, creatinine, hematocrit, hemoglobin, glycemia and insulinemia measurements. **Results:** The baseline plasma NOx values were lower in patients with HUT(+) than in controls (5.7 $\pm$ 1.6 vs. 8.8 $\pm$ 4.7 ; p=.05). A baseline NOx value below 8.5 has a 100% sensitivity, a 50% specificity, a negative predictive value of 100% and a positive predictive value of 63% for a HUT(+). The baseline concentrations of NOx were similar for men and women (7.3 $\pm$ 5.3 vs 7.1 $\pm$ 3.4) and in patients with mixed and vasodepressor responses (5.3 $\pm$ 1.8 vs 6.2 $\pm$ 1.3). Baseline NOx values did not correlate with age, BMI, hematocrit count, glucose, blood pressure and heart rate, the number of syncope episodes or the time until the onset of an HUT(+). They did correlate with baseline insulin (rs Spearman= 0.53, $p=0.008$) and inversely with insulin sensitivity (1/HOMA) (rs Spearman= -0.49, $p=0.02$). **Conclusion:** The baseline plasma levels of NOx are significantly lower in young patients with vasovagal syncope than in controls. NOx levels correlate with baseline insulin levels. Hypothetically, these findings could be related to a better signal transduction NO-cGMP.

P970

STUDY OF THE HEART RATE VARIABILITY IN TYPE 2 DIABETES MELLITUS

A.C. Santomauro Jr[1], C. Nagaoka[2], M.R. Ugolini[1], L.Z.P. Oliveira[1], I.A.B. Bincoleto[1], F.M.B. Rossi[1], B.S. Santoro[1], W.A. Amorim[3], A.C. Santomauro[1], F. Fraige Filho[4]. [1]*FACULDADE DE MEDICINA DO ABC* [2]*UNIVERSIDADE FERDERAL DE SÃO PAULO* [3]*UNIVERSIDADE DE TAUBATE* [4]*HOSPITAL BENEFICÊNCIA PORTUGUESA DE SÃO PAULO*

Introduction: Autonomic reflexes are essencial for cardiac regulation. If they are altered, the emergence of serious arrhythmia and sudden death is facilitated. The diabetic autonomic neuropathy (DAN) is a frequent complication of the Type 2 Diabetes Mellitus. The cardiovascular autonomic dysfuction is the most important affection of the DAN and it is related with an increasing risk of cardiovascular mortality. The analysis of the autonomic cardiac profile represents an important element to stratify the risk of diabetic cardiopathy. **Objective:** Studying the heart rate variability, we want to detect cardiac autonomic neuropathy and stratify the risk of cardiac events. **Methods:** Twenty-eight patients (11 women and 17 men, age 45,3 $\pm$ 5,3 years) have done the 24 hours Holter monitoring. To evaluate the autonomic cardiac profile we used the the mean of all normal to normal RR-intervals (mean NN) and the standard deviation of all normal to normal RR-intervals (SDNN). Using SDNN we stratify patients in 3 groups: group

A or high SDNN (< 50 ms – high sympathetic predominance); group M or median SDNN (between 50 – 100 ms –sympathetic-parasympathetic balance); group B or low SDNN (> 100 ms – high parasympathetic predominance). If the SDNN is low, it means high sympathetic predominance in the heart, increasing the risk of cardiac events. **Results:** Group A: 3 men, 1 woman and SDNN 42 ± 6ms, Group M: 5 men, 4 women and SDNN 75 ± 11 ms, Group B: 5 men, 4 women and SDNN 138 ± 15 ms. **Conclusion:** As the 24 hour Holter monitoring easy to use for evaluating the cardiac risk, we could classify diabetics and stratify their cardiovascular risk. Patients in group A, in addition to increased risk, may have less symptoms during coronary ischemia, because the neuropathy parasympathetic lessen the pain. Therefore, complaints should be more valued.

P971

The combination of different imaging techniques seems to be recommendable in the quantification of pulmonary vein ostia sizes.

M. Christ[1], G. Plehn[2], M. Van Bracht[3], H.J. Trappe[4], A. Meissner[5]. [1]*Ruhr University Bochum* [2]*Ruhr University Bochum* [3]*Ruhr University Bochum* [4]*Ruhr University Bochum* [5]*Ruhr University Bochum*

Background: Pulmonary vein isolation as an interventional therapy of atrial fibrillation (AF) is one of the most challenging procedures in the invasive electrophysiology. Despite the diversity of individual ablation strategies, all of them have something in common: the ablation is performed either within or around the ostia of the pulmonary veins (PV). Multiple studies have shown that PV anatomy is highly variable, emphasising the need for imaging before or during the procedure. **Purpose:** The purpose of this prospective study was to compare three established methods of pulmonary vein illustration (angiography (ANGIO), magnetic resonance imaging (MRI), computer tomography (CT)) to find out whether one imaging method alone is sufficient in the imaging of the PVs. **Methods:** Prior to pulmonary vein isolation, 288 PVs (72 patients) were illustrated by three established methods: computer tomography, magnetic resonance imaging and PV angiography. CT images and cardiovascular magnetic resonance images were done in the transverse plane, pulmonary angiography was done by selective injection into the right and left pulmonary arteries in the coronal plane. PV diameters were taken at the point of the PV's confluence with the atrium. Patients with PV anomalies (e.g. common ostium) were excluded. **Results:** 72 patients, 49 male (68.1%) and 23 female (31.9%), age 60.5 ± 10.5 years were included in our study. The diameters of the left superior PV (LSPV) ostia ranged between 13.0 mm and 25.0 mm (MRI), 13.5 mm and 31.0 mm (ANGIO) and 14.0 mm and 27.0 mm (CT). The diameters of the left inferior PV (LIPV) ostia ranged between 11.0 mm and 25.0 mm (MRI), 10.0 mm and 31.0 mm (ANGIO) and 11.0 mm and 27.0 mm (CT). The diameters of the right superior PV (RSPV) ostia ranged between 11.0 mm and 26.0 mm (MRI), 11.0 mm and 21.0 mm (ANGIO) and 10.0 mm and 23.0 mm (CT). The diameters of the right inferior PV (RIPV) ostia ranged between 10.0 mm and 23.9 mm (MRI), 10.0 mm and 20.6 mm (ANGIO) and 12.0 mm and 25.0 mm (CT). (See table 1 for means of PV size.) **Conclusion:** PV ostia illustration seems to be essential prior to PV isolation as PV sizes are highly variable. In this study, PV means as well as PV diameter ranges demonstrate that one technique alone might not suffice to quantify PV sizes. In fact, the combination of different imaging techniques seems to be recommendable.

TABLE 1

	LSPV	LIPV	RSPV	RIPV
MRI	18.8 ± 3.4	15.8 ± 3.0	17.8 ± 3.1	17.1 ± 2.9
ANGIO	18.8 ± 3.9	16.3 ± 4.9	16.3 ± 2.5	14.4 ± 2.5
CT	19.2 ± 2.8	15.6 ± 3.3	16.9 ± 2.8	16.6 ± 2.6

P972

Cardiotoxic effects of pentavalent antimony in guinea-pig leading to arrhythmia and cardiomyopathy.

ACA Carvalho[1], LF Rodrigues-Jr[1], CC Lores[1], MO Masuda[1], ACC Carvalho[1], JHM Nascimento[1]. [1]*Universidade Federal do Rio de Janeiro*

Pentavalent antimony (PA) compounds are the mainstream agents of choice for the treatment of Leishmaniasis, a parasitic disease caused by different protozoa from the genus affecting 12 million people worldwide, there are three forms of the disease the symptomatic visceral, cutaneous and mucocutaneous. Meglumine antimonate (Glucantime, Sanofi-Aventis or Glaxo) has been used for the treatment of leishmaniasis for more than 50 years. In therapeutic doses the meglumine antimonite has cardiac side effects in their use is associated to patients that can be lethal. The most of deaths resulting from antimony therapy were due to cardiac intoxication. The toxic effects in humans caused by PA are the same described to treatment with trivalent antimony compounds, but in less scale. Nausea, hypotension, abdominal pain, pancreatitis, renal toxicity and modifications on the electrocardiograms that include QT segment prolongation, T wave flattening and/or inversion, inversion of ST segment, P, R and T waves amplitude reductions, torsade de pointes arrhythmias and sudden death by cardiac arrest. The objective of this study was to characterize the arrhythmogenic potential of pentavalent antimony in an experimental model. Analysing the in vitro acute effects of different PA concentrations on isolated heart and in vivo chronic effects of therapeutic dose of PA by electrocardiographic (ECG), ecocardiographic (ECO) and survival rate analysis. The acute effects of 15, 30 and 60 mg/L PA were tested in 25 guinea-pig isolated hearts, using modified Langendorff technique. The ECG parameters analyzed were cardiac rhythm and frequency, P and T waves, PR and QT intervals and incidence of arrhythmic events. In the chronic study 26 guinea pigs received daily injections of either saline (control group) or 20mg/kg/day of PA (PA group) for 15 days. The parameters analyzed were ECG (as the same form of acute study), unidimensional ECO,m body and organs weights, and survival rate. In acute study 15mg/L PA induced T wave flattening or inversion and ventricular extra-systoles. The 30 and 60mg/L PA doses prolonged QT interval and induced ventricular extra-systoles, T wave flattening or inversion, and ventricular tachycardias such as torsade de pointes. On chronic study, the PA group had increase of QRS complex duration, QTc interval duration and QT dispersion. The echocardiographic analysis showed decreased left ventricular wall thickness and increased LV diameter, suggesting LV dilatation, low ejection and shortening fractions, and decreased isovolumetric relaxing time. The biometric analysis showed an increase of relative weights of heart, liver and lungs. The mortality rate in PA group was 30% on contrast with control group that had no mortality. We conclude that pentavalent antimony is a proarrhythmic drug that upon chronic use can lead to sudden death possibly by disturbances in the ventricular repolarization process, to prove by arrhythmic incidence, alterations on T wave, QTc complex and QTc dispersion increased. It is a cardiopathy with electric abnormalities, hypertrophy, suggested by increased of heart weights and dilation with systolic dysfunction, observed on ECO.

P973

NT-proBNP is not useful in early follow-up of heart transplant patients

D. Milicic[1], **J. Ljubas**[1], B. Pezo-Nikolic[1], B. Skoric[1]. [1]*Department of Cardiovascular Medicine, School of Medicine, University Hospital Centre Zagreb, Croatia*

Background: NT-proBNP is a useful marker in detecting left ventricle systolic dysfunction and correlates with the severity of heart failure. The aim of this study was to find a correlation between NT-proBNP levels and grade of rejection in endomyocardial biopsies in heart transplant patients and to demonstrate the average NT-proBNP trend in early and late posttransplant period. **Methods:** 148 biopsies were performed in 17 heart transplant patients during the early and late posttransplant period, ranging from one to twenty months after HTx. Blood samples were taken at the time of endomyocardial biopsy and NT-proBNP values measured. **Results:** in all of the performed biopsies the highest grade of rejection was grade 2, higher grades of EMB and acute rejection were not observed. In 148 biopsies grade 0 was documented in 93 samples (average NT-proBNP value: 3077,9 pg/ml, ranging 388–35000 pg/ml), grade 1A in 39 biopsies (average NT-proBNP value: 5041,3 pg/ml, ranging 307–35000 pg/ml), grade 1B was observed in 11 biopsies (average NT-proBNP value: 3374,5 pg/ml, ranging 442–12692 pg/ml) and only 5 samples presented as grade 2 (NT-proBNP average value: 2547,1 pg/ml, ranging 600–5241 pg/ml). NT-proBNP levels were significantly higher during the first 6 months after HTx, when de novo and chronic heart transplants were compared (6095 versus 1450 pg/ml), with a descending curve over time in majority of patients. NT-proBNP trend tends to reach almost normal values 13 months after HTx, with average NT-proBNP value of 535 pg/ml (ranging 297–803 pg/ml). **Conclusions:** NT-proBNP values showed no correlation with patohistological grade of rejection in endomyocardial biopsies in early and late posttransplant period, although rejection in our patients ranged from grade 0 – grade 2. Within the first 6 months post HTx NT-proBNP was reaching high levels despite the absence of serious rejection episodes and a preserved systolic function in all transplanted hearts. During the next 6 months post-HTx, NT-proBNP gradually normalized. Therefore we concluded that in early post-HTx period NT-proBNP was not useful in clinical follow up of post-HTx patients.

P974

Evaluation of the cardiopulmonary resuscitation teaching-learning by the nursing team

L. A.B.N. Sampaio[1], A.M.K. Miyadahira[2]. [1]*Heart Institute (InCor) - Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo* [2]*Nursing School, Universidade de São Paulo*

This study had as goal to evaluate the cardiopulmonary resuscitation teaching-learning process by the nursing team in cardiac surgery postoperative. The sample consisted of 37 Nurses, 10 Technicians and 53 Nursing Aides of an Intensive Care Unit of a university hospital, in the public health care chain of the city of Sγo Paulo. In the study method, we established two standard models (check-list) one for the nurses and another one for the technicians and Nursing aides and they were appreciated by a judge corps and used in the evaluation of the skill (execution) and the knowledge (description) shown by nurses, technicians and Nursing aides in two steps in the operationalization of the data collecting. The results, were analised and showed that: 1) The score level among nurses, technicians and Nursing aides on skill (execution) and on knowledge (description) didn't achieve the score stipulated by the judges for each scenery in the first step of the study. 2) The score level among nurses, technicians and Nursing aides on skill (execution) and on knowledge (description) didn't achieve the score stipulated by the judges for each scenery in the second step of the study. 3) There was a statistically significant improvement both on skill (execution) and on knowledge (description) among nurses, technicians and Nursing aides in the standard model sceneries, whem compared to the previous steps of the study.

P975

Association between pravastatin and enalaprilat in the reversal of left ventricular hypertrophy in rats induced by isoproterenol-preliminary results.

I. A.B. Bincoleto[1], A.C. Santomauro Jr[1], M.R. Ugolini[1], L.Z.P. Oliveira[1], A. Meneghini[1], C. Ferreira Filho[1], T.R. Theodoro[1–2], E.R. Suarez[1–2], N. Murad[1], C. Ferreira[1]. [1]*FACULDADE DE MEDICINA DO ABC* [2]*UNIVERSIDADE FEDERAL DE SÃO PAULO*

Introduction: The left ventricular hypertrophy (LVH) is an important risk factor of cardiovascular morbity and mortality in the study of Framinghan. In addition, data from the literature indicates

that the hypercholesterolemia increase the expression of AT1 receptors. The use of inhibitors of angiotensin converting enzyme (ACE) prevents and / or reverses the cardiac hypertrophy. Information from literature indicate consistent reduction of mortality with the use of statins that decrease hypercholesterolemia by promoting reduction of AT1 receptors. **Objective:** The objective of this study was to verify whether association between pravastatin and enalaprilat promotes the reversal of left ventricular hypertrophy in rats induced by isoproterenol. **Methods:** Wistar rats were used, 40 male divided into 4 groups: Isoproterenol (ISO), Isoproterenol + Enalaprilato (ENA), Isoproterenol + Pravastatin (PRA) and Isoproterenol + Enalaprilato + Pravastatin (ENA / PRA). We administrated 0.3 mg / kg of isoproterenol that were applied to rats subcutaneous for eight consecutive days while the enalaprilat and pravastatin were administered by gavage at a dose of 0.3 mg / kg and 10 mg / kg, respectively, for 14 consecutive days. We evaluated the humid weights of ventricles and the biochemical parameters: total cholesterol and fractions, and triglycerides. **Results:** The group PRA reduced the relative weight of the ventricle and final weight of rats by about 2.7%. In group ENA there was reduction in LVH of 5.3%. In group ENA / PRA there was a 10.5% reduction of left ventricular hypertrophy. **Conclusion:** The combination of pravastatin and enalaprilat shown to be more effective in the reversal of left ventricular hypertrophy induced by isoproterenol.

P976

Takotsubo Syndrome: a cathecolamine cardiomyopathy

I.A.B. Bincoleto[1], A.C. Santomauro Jr[1], M.R. Ugolini[1], L.Z.P. Oliveira[1], F.M.B. Rossi[1], B.S. Santoro[1], J.F. Kelendjian[1], R. Alessi[1], A.R.P. Rieira[1], C. Ferreira[1]. [1]*FACULDADE DE MEDICINA DO ABC*

Takotsubo cardiomyopathy, also known as transient left ventricular apical ballooning, is a transitory systolic dysfunction with extensive akinesia of the apical and middle portions of the left ventricle, hypercontractile base and myocardial stunning that appears under circumstance of physical and emotional stress. The typical presentation of someone with takotsubo cardiomyopathy is a sudden onset of congestive heart failure or chest pain associated with ECG changes suggestive of an anterior wall heart attack and also a slightly increase in the biomarkers of cardiac injury that is disproportionate to the extent of akinesia. We report a case of an 82 year old man presented with left hemiplegy for two hours. He had hypertension in use of antihypertensive for 30 years. Cranial computed tomography showed thalamic and lentiform nucleus hemorrhage, with injury in the internal capsule. ECG showed a ±1mm ST-segment elevation in precordial leads V1 and V2. In the ICU, it was solicitated a new ECG that showed left ventricular hypertrophy and ±1mm ST-segment elevation in V2-V4. The biomarkers of cardiac injury were modestly inceased (troponine sub-unit I – 0,166ng/mL and CKMB mass – 1,85ng/mL). Myocardial cintilography did not showed myocardial ischemia. After 13 days, it was realized a coronary angiogram, which did not reveal any significant blockages that would cause the left ventricular dysfunction and a myocardial cintilography, which showed akinesia of the left ventricular apex and ejection fraction (EF) of 35%. After 45 days, echocardiography showed EF of 60% and preserved left ventricular systolic function. Takotsubo cardiomyopathy is more commonly seen in women, after a physical or emotional stress. In this case reported, it appeared after a hemorrhagic stroke. The etiology and the pathophysiology of takotsubo cardiomyopathy is not fully understood, but some mechanisms have been proposed, like the increase in the sympathetic activity associated with uncontrollably discharges of catecholamines. Studies have proposed four diagnostic criteria: akinesia or dyskinesia of the apical and middle portions of the left ventricle and myocardial stunning, absence of coronary artery disease or plaque burst, new findings in the ECG, and absence of recent cranial-encephalic trauma, subarachnoid hemorrhage, phaeochromocytoma, myocarditis and hypertrophic cardiomyopathy. The patient related had all the criteria.

P977

Percutaneous treatment of chronic total occlusion in routine clinical practice

S. Jozami[1], M. Albertal[1], F. Cura[1], L. Padilla[1], A. Candiello[1], P. Perez Baliño[1], J. Thierer[1], J. Belardi[1]. [1]*INSTITUTO CARDIOVASCULAR DE BUENOS AIRES*

Background: Percutaneous coronary intervention (PCI) for the treatment of chronic total occlusions (CTO) remains a challenge, due to low success rates and excessive neointimal proliferation, resulting into high target vessel revascularization (TVR) rates. However, the use of drug-eluting stent (DES) and the implementation of ischemia-driven TVR algorithms rather than mandatory angiographic follow-up evaluation may derive into lower TVR rates. **Methods:** All PCI procedures performed from April 2003 to August 2006 at a single, high volume, tertiary centre were divided according to the presence of CTO treated lesions (CTO group and Non-CTO groups). All patients underwent clinical follow-up with a median of 429 (IQ 200–807) days in the CTO and 500 (IQ 319–906) in the non-CTO group, respectively ($p<0.005$). **Results:** The CTO-group was younger (62.1± 10.7 years vs. 64±10.4, $p=0.003$), with greater male proportion (87% vs. 83.3%, $p=0.06$), similar diabetes mellitus proportion (19.2 vs. 21%, p=NS), smaller vessel size (3.01±0.55 mm vs. 3.10±0.50, $p=0.007$) than the Non-CTO group, which resulted into significantly lower procedural success rate (82% VS. 98%, $P<0.005$). Implantation of DES was less frequent in the CTO group (95/339 patients, 28%) than in the Non-CTO group (593/1570, 37.6%, $p<0.001$). **Conclusions:** 1) PCI for the treatment of CTO lesions was feasible and safe. 2) The presence of CTO was not associated with high TVR or MACE rates. 3) Despite longer stent length and high proportion of multivessel PCI in the DES-CTO group, the use of DES seemed more effective than BMS. 4) DES appeared underused in CTO lesions.

	Overall CTO group (n=339)	BMS-CTO (N=279)	DES-CTO (N=60)	Non-CTO group (n=1568)
Stent per patient	1.3±0.9	1.18±0.9	1.68±0.87*	1.3±0.8
Overall Stent length	28.3±23.1	25.1±21.9	43.5±22.5*	27.3±20.5
Multivessel PCI	35.7	33.7	45*	31.9
TVR (TCO-related)	14.5 (12.4)	15.8 (13.6)	8.3** (6.7**)	14.3
Cardiac death	3.5	3.9	1.7	3
Cardiac death or TVR	17.4	19	10*	16.9

* $p<0.05$ vs. BMS-CTO, ** $p=0.095$ vs. BMS-CTO

P978

CARDIOPULMONARY RESUSCITATION (CPR) IN THE POSTOPERATIVE ONE OF CARDIOVASCULARY SURGERY: CHARACTERIZATION OF THE ACTIVITIES AND NECESSITIES OF TRAINING EVIDENCED BY THE PROFESSIONALS OF NURSING.

L.A.B.N. Sampaio[1], A.M.K. Miyadahira[2], D.V. Correa[2]. [1]*Heart Institute (InCor) - Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo* [2]*Nursing School - Universidade de São Paulo* [3]*Nursing School - Universidade de São Paulo*

Introduction: The necessity to organize the attendance of emergency situations in the postoperative period following cardivasculary surgery, based in the international recommendations for Advanced Cardiac Life Support (ACLS), and to offer to subsidies for the development of a structuralized program of Nursing training in Cardiopulmonary Resuscitation (CPR), had stimulated the accomplishment of this study. **Objectives:** 1) Verifier qualification and perfectioning of the Nursing staff how much the RCP; 2) Identifier the activities developed for the Nursing professionals during CPR; 3) Identifier the difficulties lived deeply and necessities of postoperative period following cardivasculary surgery training in postoperative period following cardivasculary surgery, related for the Nursing professionals. **Methodology:** The sample consisted of 27 nurses, 10 nursing technician and 32 nursing assistant of a postoperatory unit. The data had been gotten by means of a questionnaire. **Results and Conclusion:** The gotten data had allowed to verify that the nurses are the professionals who had more carried through CPR courses; it does not have a clear differentiation of the activities developed between the professional categories of the Nursing staff. How much to the difficulties lived deeply in the CPR attendance, the lack of standardization and organization the nurses and nursing assistant had been cited by; e for the nursing technician was the lack of leader emotional control. In relation to the necessities of CPR training, the specific training was the cited topic more. All the gotten answers strengthen the necessity of this professional category to work in team, with organization and definition of functions.

P979

TGF-B1 MEDIATES THE HYPERTROPHIC CARDIOMYOCYTE GROWTH INDUCED BY ISOPROTERENOL IN RATS.

I. A.B. Bincoleto[1], A.C. Santomauro Jr[1], L.Z.P. Oliveira[1], M.R. Ugolini[1], C. Ferreira Filho[1], A. Meneghin I[1], T.R. Theodoro[1–2], E.R. Suarez[1–2], N. Murad[1], C. Ferreira[1]. [1]*FACULDADE DE MEDICINA DO ABC* [2]*UNIVERSIDADE FEDERAL DE SÃ,O PAULO*

Introduction: The Left Ventricular Hypertrophy is an important risk factor for cardiovascular disease. To understand the mechanisms of physiopathogenesis is important the identification of molecules and signaling pathways. **Objective:** To verify the expression of TGF-beta ƒn by immunohistochemistry in the model of induction of LVH mediated by isoproterenol in rats, by the methods of semi-quantitative scores and quantitative digital assisted by computer. **Methods:** 20 male wistar rats were divided into two groups: Control (CON) and Isoproterenol (ISO). 0.3 mg / kg of isoproterenol were applied to rats subcutaneous for eight consecutive days in the ISO, while 0.3 ml of olive oil were applied subcutaneous for eight consecutive days in CON. We used the method of immuno-histochemistry for TGF-beta, and subsequent comparison of the methods of semi-quantitative scores (Imagelab) and analysis of quantitative digital assisted by computer. **Results:** An elevation was observed in the index of digital expression of TGF-beta of ISO compared to the CON that was approximately 18% ($p = 0.007$). The quantitative digital assisted by computer found that all cases of CON belonged to score 2, that means they were about 11% to 50% of expression of TGF-beta1, whereas all of the ISO cases had the score 3, which means they were more than 50% of expression of TGF-beta. **Conclusion:** The model of Left Ventricular Hypertrophy not preceded by pressure overload induced by Isoproterenol is able to stimulate the expression of the growth factor TGF-beta. There is a plethora of incentives with the potential to active and determine the growth in hypertrophic cardiomyocites, which gives support to a model redundant and complex.

P980

Cardiac Peptides during Exercise in Heart Failure Patients

D. Zdrenghea[1], M. Ilea[1], D. Pop[1], D. Petrovai[1]. [1]*Rehabilitation Hospital, Cluj-Napoca, Romania*

Background: Cardiac peptides are increased at rest in heart failure patients and are even more increased during exercise. In turn, the relationship between exercise cardiac peptides and etiology of heart failure on the type of exercise stress testing was less studied until now. **Method:** There were studied 87 NYHA II and III heart failure patients (p), 56 males and 31 females, aged 51.07±12 years. The etiology was ischemic in 32p, idiopathic dilated cardiomiopathy (DCM) in 18p and rheumatic or degenerative valvular heart disease in 37p. After the relief of the congestive syndrome, each patient was submitted to a symptom limited, maximal stress testing on cycloergometer. Blood samples were obtained at rest and at peak effort and the plasmatic values of NT-proBNP (NV<250fmol/ml) and of NT-proANP (NV<1950fmol/ml) were determined using ELISA method. In consecutive days, an arm exercise stress testing was performed in 30p and a 6 minute walking test (6MWT) in another 20p with

the same determination of the cardiac peptides at rest and at peak effort. **Results:** Both NT-proBNP (734.58±67fmol/ml) and NT-proANP (3126.89±299fmol/ml) were increased at rest. The NT-proBNP was more increased in DCM (1104.3±73.2fmol/ml) than in ischemic (683±45.2fmol/ml) or valvular (597±43.2fmol/ml) patients. NT-proANP was maximal in valvular patients (3800±250fmol/ml) in comparison with ischemic (2263±215fmol/ml) or even DCM (3275±312fmol/ml) patients, probably in relationship with atrial fibrillation, noted in 30% of the valvular patients. During exercise, both NT-proBNP (1130.49±990fmol/ml) and NT-proANP (3808.77±370fmol/ml) significantly increase. The increase was again maximal in DCM p (NT-proBNP 1403.9± 112fmol/ml; NT-proANP 4637±365fmol/ml) in comparison with ischemic (NT-proBNP 789.9±69fmol/ml, NT- proANP 3174±290fmol/ml) and valvular (NT-proBNP 761±45fmol/ml, NT-proANP 3954±342fmol/ml). The percent increase was greater for NT–proBNP (53.89%) than for NT-proANP (21.80%) probably in relationship with the stretching effect during exercise more increased at ventricular in comparison with atrial level. During arm exercise, the percent increase of cardiac peptides (44% NT-proBNP; 17% NT-proANP) was not significantly different from leg exercise (and also did the increase of NT-proBNP (57%) and NT-proANP (15%) during 6MWT. The most depressed left ventricular function (LVEF) was registered in DCM patients (38.11% ± 3.4%) LVEF being inversely correlated with both NT-proBNP (r=-0.38) and NT-proANP (r=-0.37). **Conclusion:** In heart failure patients, cardiac peptides increase during exercise more in DCM than in ischemic or valvular patients, probably in relationship with more depressed systolic ventricular function. The percent increase of cardiac peptides during leg, arm or 6MWT is similar and each test can be used as a substitute for the other two.

P981

Action of Memantine in the myocites of rats submitted to cold stress.

I.A.B. Bincoleto[1], A.C. Santomauro Jr[1], M.R. Ugolini[1], L.Z.P. Oliveira[1], C. Ferreira Filho[1], M. Ferriera[1], A.R.P. Rieira[1], A. Meneghini[1], C. Ferreira[1], N. Murad[1]. [1]*FACULDADE DE MEDICINA DO ABC*

Introduction: Cold acts as a stressing agent, bringing the sympathoadrenal system, releasing catecholamines and producing metabolic, morphological and functional alterations. This work was carried out in order to evaluate the possible protective effect of Memantine on the alterations caused by cold stress in rats myocardical. **Methods:** We studied four groups of rats – 1) Control (CON; n=10), which received 1ml of placebo during 8 days; 2) Memantine (MEM, n=10), which received 1 ml of Memantine solution during 8 days; 3) Stress (EST, n=10), which received 1 ml of placebo during 8 days and, after that, were placed at -8°C during 4 hours; 4) Memantine + Stress (MEM+EST, n=10), which received 1 ml of Memantine solution during 8 days and, after that, were placed at -8°C during 4 hours. We carried out exams of heart, liver and suprarenal glands thought light microscopy. **Results:** We observed significant differences between the depletion levels of glucocorticoids in suprarenal glands and the nuclear volumes within the groups, excepting the control group. **Discussion:**The incomplete inhibition of the voltage gate muscular calcium channel by neuronal channel blocker can justify the partial decrease of the nuclei in the MEM+EST group, demonstrated by reduction in the citosol calcium metabolism. **Conclusion:** The presence of similar classes of calcium channels, muscular nd neuronal, can justify the attenuation of the structural alternations noticed in the cardiomyocites nuclei of the animals submitted to cold stress.

P982

SUSPICION OF ACUTE CORONARY ILLNESS IN DIABETIC PATIENTS. CLINICAL CHARACTERISTICS, TREATMENT AND EVOLUTION AT THIRTY DAYS

P. Gallo[1], **S. Saravia Toledo**[1], R. Leon De La Fuente[1], C. Laspiur[1], S. Araujo[1], A. Farah[1], F. Marconetto[1], H. Velez[1], N. Barrientos[1]. [1]*INSTITUTO PARA INVESTIGACIONES CARDIOLOGICAS*

Aims:: To evaluate the difference in the records, forms of presentation, treatment and evolution at thirty days in diabetic patients (DB) and non-diabetic patients (NDB) hospitalised for precordial pain with suspicion or diagnosis of acute coronary disease. **Material and Methods:**: Multicentric prospectic registry of patients (P) hospitalised in consecutive form in intensive care units with suspicion or confirmation of acute coronary syndrome in the city of Salta. The P signed a written consent form. Samples of troponine T (TT) were taken at the moment of admission and 6 hours later. A telephonic follow-up was performed 30 days after joining the registry. **Results:** 532 P were studied, DB 108 (20,3%), average age 61,83 versus 61,7. They showed no difference in previous heart failure (9,2%), previous infarct (14,8%) and tobacco addiction (25,9%). They showed greater prevalence of previous revascularisation (PREV) (26% vs. 14,1% p 0,003), dyslipemia (54,6% vs. 34,6% p<0,001) and high blood pressure (HBP) (79,6% vs. 58,4% p <0,001). As regards the presentation electrocardiogram (ECG), they showed more ST segment depression (STD) (23,6% vs. 14,1% p 0,01), less non-diagnosed ECG (ECG ND) (62,3% vs.72,5% p 0,04) and there were no differences in ST segment elevation (STE) (14,1%). 42,5% showed positive TT vs. 34,9% (p 0,1). 51% vs. 40% (p 0,03) underwent cinecoronariography. 32,4% vs. 24,3% 3 (p 0,04) were revascularised and 3,7% vs. 2,12% (p 0,39) died. **Conclusions:** 1. The DB were of similar age, showed more records of PREV, dyslipemia and HBP, showed no difference in other records. 2. They showed more STD, similar STE and fewer ECG ND at admission. 3. They showed high prevalence of positive TT, received invasive treatment more frequently with a higher rate of revascularisation.

P984

The influence of gastric bypass in the improvement of the Metabolic Syndrome factors in the later post-operative (6 months)

I.A.B. Bincoleto[1], F.M.B. Rossi[1], A.C. Santomauro Jr[1], M.R. Ugolini[1], L.Z.P. Oliveira[1], W.A. Amorim[1], A. Serpa Neto[1], R.B.F. Silva[1], M. Rossi[1], E.Z. Chehter[1]. [1]*FACULDADE DE MEDICINA DO ABC*

Introduction: The Metabolic Syndrome (MS) is a complex disorder represented by entirety cardiovascular risk factors that usually were related with a central obesity deposit and the Insulin Resistance. Nowadays, there are a lot of different methods for the MS factors treatment, including the bariatric surgery that presents great results above all the factors. Objective: to evaluate the influence of gastric bypass in the improvement of the MS factors in the later post-operative (6 months). **Method and casuistry:** it was a retrospective study with 140 patients submitted to the gastric bypass, with women supremacy (79,3%), and BMI average of 44,7 kg/m2. It was analyzed in the pre and later post-operative: the weight of patient; Diabetes Mellitus and hypertension; triglyceride; total and fraction cholesterol and blood glucose. **Results:** the ponderal loss was the same in both sex, with an average of 28,73 ± 4,63% in relation with weight in the preoperative period. In blood glucose exam, 41 patients were normal 6 months after surgery. Occurred improvement in all parameters appraised, and the triglyceride was the variable with the best fall (average of 42,39%). The surgery also shows beneficial reduction in blood pressure. Differently of the preoperative period, the only variable that presented difference between the sexes was the HDL. The relation between lipoprotein did not show significant difference. **Conclusion:** the gastric bypass is a great method to improve the metabolic syndrome factors in morbid obesity well-timed for bariatric surgery.

P985

Is maximal exercise capacity related to ventricular dyssynchrony in asymptomatic aortic stenosis?

M. Bustamante-Labarta[1], F. Vaisbuj[2], P. Roura[3], J. Casas[4], C. Lopez[5], M. Diaz[6], F. Salmo[7], C. Rodriguez-Correa[8], G. Marambio[9], E. Guevara[10]. [1]*ICyCC-Fundación Favaloro.* [2]*ICyCC-Fundación Favaloro.* [3]*ICyCC-Fundación Favaloro.* [4]*ICyCC-Fundación Favaloro.* [5]*ICyCC-Fundación Favaloro.* [6]*ICyCC-Fundación Favaloro.* [7]*ICyCC-Fundación Favaloro.* [8]*ICyCC-Fundación Favaloro.* [9]*ICyCC-Fundación Favaloro.* [10]*ICyCC-Fundación Favaloro.*

Background: Left ventricular (LV) dyssynchrony (DYS) impairs contractile performance and is one of the mechanisms involved in heart failure. This phenomenon has largely been studied in dilated cardiomyopathy but there is scarce information about its role in valvular heart disease and in patients with heart failure and preserved LV systolic function. **Objective:** To analize if Maximal Exercise Capacity (MEC) is associated to LV DYS in patients with asymptomatic severe aortic stenosis. **Methods:** Inclusion criteria: asymptomatic (or doubtfully symptomatic) severe aortic stenosis (aortic valve area [AVA] under 1 cm^2 by Doppler continuity ecuation), LV ejection fraction (EF) over 50%, sinus rhythm, and absence of associated moderate or severe valvular lesions or known coronary artery disease. Study population: 58 out from 65 consecutive ambulatory patients prospectively evaluated with exercise stress echocardiography (ESE) were finally included (69.9±9.2 y/o, 37 men). A Modified Naughton protocol in treadmill was performed. Echocardiographic parameters and digital image adquisition at rest, and immediate post exercise digital image adquisition were obtained. Age, rest echocardiographic parameters (left atrial diameter [LA], LV diastolic diameter [DD], LV mass index [MI], EF, diastolic function pattern [DF], AVA, peak [PG] and mean [MG] aortic gradients, rest DYS parameters, obtained with color tissue Doppler imaging from apical 4 chamber and 2 chamber views (time to peak systolic velocities [TPSV] differences between septal versus lateral and inferior versus anterior wall basal segments, and summation of both parameters [TPSVsum]) and presence of exercise regional wall motion abnormalities (RWMA) were analized. Statistical relationship between these parameters and MEC (estimated in METS) was assessed. **Results:** LA: 44.18±6.5 mm, LVDD: 47±4.9 mm, MI: 125.4±33.6 g/m^2, EF: 64.7±7.8 %, DF: abnormal relaxation: 40 patients – pseudonormal: 18 patients, AVA: 0.6±0.2 cm^2, PG: 101.5±34 mmHg, MG: 57.8±20.7 mmHg, septal-lateral TPSV difference: 61.5±39.7 mseg, inferior-anterior TPSV difference: 40.5±42.3 mseg, TPSVsum: 101.3±63.8 mseg, RWMA: 15/58 patients (25.86 %), MEC: 6.1±2.6 METS. Statistic analysis: From the analized parameters, only RWMA (Spearman rho correlation coefficient: -0.464, p= 0.001) and inferior-anterior TPSV difference (Spearman rho correlation coefficient: 0.303, p= 0.024) correlated with MEC. **Conclusion:** The difference between inferior and anterior time to peak systolic velocities showed statistical significant correlation with MEC in patients with asymptomatic severe aortic stenosis. Left ventricular dyssynchrony seems to play a role in functional capacity of those patients.

P986

Cardiac output monitoring in critical care: Influence of the height of the headboard of the bed in the cardiac output and hemodynamics measurements.

V.S. Bulgarelli[1–2], **L.A.B.N. Sampaio**[1–2]. [1]*Heart Institute (InCor) - Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo* [2]*Centro Universitário São Camilo*

This study had as goal to determine the effect of the height of the headboard of the bed on the value of the cardiac output (CO) surveyed by thermodilution, heart rate (HR), arterial blood pressure (APM), wedge pressure (WP) and central venous pressure (CVP), besides evaluating the influence of the type of surgery on the gotten values of CO, HR, APM, WP and CVP, in the positions of zero and 30 degrees. The sample consisted of 20 patients in the postoperative of cardiac surgery of an Intensive Care Unit of a university hospital, in the public health care chain of the city of S¬o Paulo. The patients had been divided in two groups: Group 1 - submitted to the surgery of Valvular Replacement and Group 2 - submitted to the Coronary Artery Bypass Surgery. The study parameters had been measured with the headboard of the bed in zero

degree, and after an interval of time of 10 minutes, in rise to the 30 degrees The results, were analised and showed that: 1) In relation to the CO, it had statistically significant difference, 2) In relation the parameters: HR, APM, WP and CVP had not presented statistically significant differences, 3) It had statistically significant difference only in the cardiac output when compared the groups of study.

P987

Incidence and risk factors of major bleeding in acute coronary syndrome patients

A. Reina[1], F Manzano[1], **M Colmenero[1]**, P Castan[1], M Rodriguez-Elvira[1]. [1]*Critical Care Unit. Hospital Virgen de las Nieves. Granada. Spain.*

Objective: The use of multiple antiplatelet and antithrombotic agents alongside the invasive catheterization procedures have lead to an increase in the risk of bleeding in patients with acute coronary syndromes (ACS). We study the incidence and risk factors associated to major bleeding in ACS patients admitted to the intensive care unit (ICU). **Methods:** Prospective, observational study of ACS patients admitted to the ICU during the year 2005. The primary end point were major bleeding defined as the occurrence of hemorrhagic stroke or any bleeding that required transfusion of blood products, use of vasoactive drugs, gastrointestinal endoscopy or any kind of surgery. Variables studied as risk factors were: age, gender, type of ACS (with or without ST segment elevation), creatinine levels at admission, comorbidities, use of antiplatelets, heparin pre and post-procedure, thrombolytic therapy and cardiac catheterization. A multivariate logistic regression analysis was used for statistical analysis. **Results:** 326 patients were included. Mean age was 66+11 years, 27% were women, 63% presenting without ST segment elevation and in 64.5% of cases a cardiac catheterization was carried out (n=211). A 4.6% of patients suffered from a major bleeding episode (n=15). Four patients had a hemorrhagic stroke. In the univariate analysis the variables associated with bleeding were: creatinine levels at admission (1.6+1.3 vs 1.08+0.7, p=0,002), antiIIb/IIIa glycoprotein treatment (14.7% vs 5.8%, p=0.01), cardiac catheterization (12.4% vs 5.2%, p=0.02) and use of heparin following cardiac catheterization (13.9% vs 5.5%, p=0.039). Multivariate analysis show that major bleeding is associated with creatinine levels (per mg/dl) (OR= 1.59; IC 95% 1.10–2.33, p=0.03) and use of heparin following cardiac catheterization (OR=3.73; IC 95% 1.43–9.69, p=0.007) **Conclusions:** The incidence of major bleeding is in the range of that published in the literature. Acute renal failure and use of heparin following cardiac catheterization are the factors that increase the risk of major bleeding in our population of ACS patients.

P988

CLINICAL COURSE AND PROGNOSIS OF INFECTIVE ENDOCARDITIS IN THE ELDERLY

C. M. Cortés[1], R.J. San Miguel[1], P. Roura[1], C. Nagel[1], C. Salvatori[1], A. Arlia Ciommo[1], E. Dulbecco[1], J. Abud[1], R.R. Favaloro[1], **J.H. Casabe[1]**. [1]*Fundación Favaloro*

Background: In recent decades the mean age of patients with infective endocarditis (IE) has progressively increased. Also, advanced age is considered to be associated with a more severe prognosis. OBJETIVE: To analyze retrospectively the clinical characteristics, hospital outcome and surgical mortality in the elderly patients with infective endocarditis hospitalized in a tertiary care centre. **Methods:**: From June 1992 to September 2007, 322 patients with active IE (81 % Definite according to Duke Criteria) were hospitalized. One hundred twenty-patients were older than 65 years and were compared to 202 younger patients. **Results:** No significant differences were observed among the age groups with respect to sex, diabetes, clinical signs, valve involved and the rate of negative blood cultures. Prosthetic valve endocarditis was more frequent in elderly than in younger adults (48 and 30%, respectively, p 0.001 OR 2.18 IC 1.37-1.49). In patients with positive hemocultures Enterococcus was more frequent (17.5% compared with 8% in younger adults, p < 0.01 OR 2.46 IC 1.23 -4.94). Elderly patients underwent surgery equal frequently (60 versus 70% p 0.07). The in hospital mortality was higher in the elderly (26 versus 13%), p < 0.03 OR 2.32 (1.14–4.73). **Conclusions:** Prosthetic valve endocarditis together with higher proportion of Enterococcus as etiologic agent were more frequent in the elderly. These facts were related to a worse prognosis compared to younger patients.

P989

DRUG TREATMENT OF HEART FAILURE PATIENTS IN A ROMANIAN GENERAL HOSPITAL

C. Talos[1], D. Zdrenghea[1], D. Pop[1]. [1]*Deapartment of Cardiology, University of Medicine Cluj-Napoca, Romania*

Background. It is very well known that in clinical practice, according to the published guidelines, the heart failure patients are undertreated. There are striking differences in applying the guidelines in various countries and, up to the present, there are no consistent data for Romania. **Methods.** There were studied 459 patients admitted in the Cardiology department of a general hospital in Cluj- Napoca, Romania. They were evaluated from the point of view of the drugs used during hospitalisation and recommended to be taken after discharge. **Results.** The patients, 393 males and 66 females, aged 61±9 years (lower in comparison with other countries) were included in NYHA III and IV class, except 3%, in NYHA II class. The ischemic etiology was registered in 56% the patients. Drug treatment was as follows: diuretics-86.98%, ACEI-77.77%, beta blockers-55.95, ARB's-7% (very expensive in Romania), digoxin-51.63%, aldosterone antagonists-49%, nitrates-61.28%, statins-24% (very expensive in Romania), antithrombotic therapy–60% (antiplatelet-45.75%, anticoagulants-28.5%), antiarrythmics -27.91% (mainly amiodarone). In comparison with other European countries and the USA, the use of RAAS antagonists is similar, there are more beta-blockers and nitrates used, but there is less use of antithrombotic therapy (especially anticoagulation) and use of statins. **Conclusion.** Even though Romania still belongs to the group of developing countries, the drug treatment of heart failure patients does not much differ from the treatment applied in developed countries.

P990

Ventricular Tachyarrhythmias and the Impact of ICD Therapy in Patients with Arrhythmogenic Right Ventricular Cardiomyopathy

F. Duru[1]. [1]*University Hospital Zurich*

Arrhythmogenic right ventricular cardiomyopathy (ARVC) is a genetically determined heart disease characterized by progressive fibrous-adipose replacement of the myocardium. Patients with ARVC may show varied initial manifestations, including ventricular tachyarrhythmias and sudden death. The objective of this study was to investigate the incidence of spontaneous or induced ventricular tachyarrhythmias and the impact of ICD therapy on the outcome of patients with ARVC. Sixtyone patients (44 male, 44 ± 14 years) were diagnosed to have ARVC based on standardized diagnostic criteria in our institution. At presentation, 45 patients (74%) had ventricular tachycardia. 11 patients had syncope as presenting symptom, 15 had presyncope, 6 patients had symptoms and signs of congestive heart failure, and 20 had palpitations. Three patients were asymptomatic but had positive family history for ARVC or sudden cardiac death, and one patient was diagnosed to have ARVC during a routine check-up. Among 41 patients who underwent EP study, 27 (66%) had an inducible sustained monomorphic ventricular tachycardia. Two patients had ventricular tachycardia with two different morphologies, and one patient had three morphologies. Twenty-six patients presented with ventricular tachycardia with left bundle-branch-block pattern (one patient with right bundle-branch-block pattern, inferior axis). Three patients had polymorphic ventricular tachycardia and four patients had ventricular fibrillation. Management of these patients included medical therapy with beta-blockers in 67%, sotalol in 31%, and amiodarone in 26%. Twenty-two patients (19 male, mean age: 42 ± 14 years) underwent implantation of an ICD. Indication for ICD implantation was presence of hemodynamically significant ventricular tachyarrhythmias in 20 patients (91%), and strong family history of sudden death in 2 patients. During a mean follow-up period of 42 months, 14 patients (63%) developed a total of 842 episodes. 92% of these episodes were successfully terminated by antitachycardia pacing therapies. Eight patients (36%) received inappropriate therapies, which were due to rapid supraventricular arrhythmias in six cases. In the ICD group, three patients underwent heart transplantation during follow-up. There were two deaths (both had left ventricular involvement); one patient died because of end-stage heart failure, and another died suddenly despite delivery of ICD therapies. **Conclusion:** Ventricular tachyarrhythmias, spontaneous or induced, occur commonly in patients with ARVC. In recipients of ICDs, adequate device interventions are common and antitachycardia pacing can terminate vast majority of these episodes. Inappropriate therapies are also relatively common and may complicate management of these patients.

P991

SUSPICION OF ACUTE CORONARY DISEASE IN PATIENTS OVER 75 YEARS OLD. CLINICAL CHARACTERISTICS, TREATMENT AND EVOLUTION AT THIRTY DAYS

P. Gallo[1], S. Saravia Toledo[1], R. Leon De La Fuente[1], S. Araujo[1], F. Wayar[1], C. Laspiur[1], F. Marconetto[1], C. Toldo[1], F. Rassi[1], E. Aramburu[1]. [1]*INSTITUTO PARA INVESTIGACIONES CARDIOLOGICAS*

Aims:: To evaluate the difference in forms of presentation, treatment and evolution at thirty days in patients over and less than 75 years old hospitalised for precordial pain with suspicion or diagnosis of acute coronary illness. **Material and Methods:** Multicentric prospectic registry of patients (P) hospitalised in consecutive form in intensive care units with suspicion or confirmation of acute coronary syndrome in the city of Salta. The patients signed a written consent form. Samples of troponine T (TT) were taken at the moment of admission and 6 hours later. A telephonic follow-up was performed 30 days after joining the registry. **Results:** 584 patients were studied, 102 (17,5%) were over 75 years old, with an average age of 81,1 vs. 57,7% (p<0,001), there was a major prevalence of women (62,1% vs. 34,4% p<0,001), high blood pressure (HBP) (77,1% vs. 60,2% p 0,002), heart failure (20,6% vs. 5,7% p<0,001), they did not present differences in previous infarcts (15,2%), previous revascularisation (17,3%), diabetes (17,4), presented less addiction to tobacco (13% vs. 30% p<0,001). They did not present difference in the presentation electrocardiogram (ECG), ST segment elevation (STE) (14,1%), ST segment depression (STD) (18,4%) and non diagnosed ECG (ND) (67,3%). They showed positive TT 42,4% vs. 33,4% (p 0,09). 43,47% vs. 42,5% underwent cinecoronariography (CCG). 23,6% vs. 24,6% 3 (p NS) were revascularised and 6,52% vs. 1,45% (p 0,002) died. **Conclusions:** 1. In this record 1 of every 5 P were over 75 years old and there was a prevalence of women, HBP and previous heart failure. 2. They showed no difference in the ECG at admission. 3. They showed high prevalence of positive TT and received invasive treatment as often as younger patients, as opposed to other records. They presented a higher mortality rate at thirty days.

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Addition of Ivabradin further improves clinical status in patients with end stage heart failure and intolerance to ß-blockers.

K.G. Adamyan[1], A.L. Chilingarian[1], A.V. Astvacatryan[1]. [1]*Institute of cardiology*

Some ß-blockers are proved to reduce heart failure morbidity and mortality through mechanisms, among which tachycardia plays substantial role. However many patients with end stage heart failure (ESHF) do not tolerate them. We assumed that addition of ivabradin to

standart therapy (ST) might be beneficial in these pts in terms of HF clinical status. **Methods:** After titration period 145 patients (36 women) aged 58±7 years with postinfarction ESHF NYHA IV (EF<35%) and inappropriate HR (91±4 bpm) with intolerance to ß-blockers and already on standard therapy (ST) were randomized to 2 groups in order to receive ivabradin 7.5 mg BID + ST (I + ST), n = 70; or ST (digoxin, spironolacton, ACE/ARB, furosemide); n = 75. Total ischemic burden (TIB) as total time of ST segment depressions ≥ 1 mm and ≥1 min duration and HRV as standard deviation of normal RR intervals (SDNN) were measured by 24-hour ECG monitoring. EchoCG indexes of ESV, EDV, tissue Doppler patterns (TDP) E/Em of LV lateral mitral annulus, myocardial performance index (MPI) as IVCTm+IVRTm/ETm were measured by two investigators unaware of study aims in 30 and 90 days follow up. Treadmill stress-EchoCG test (SET) (by Bruce) were perform by same investigators measuring exercise time (ET) and stroke volume index (SVI) before after SET. **Results:** In 30 day TIB and HRV were better in I + ST, compare to ST. (TIB: I + ST 27±9 min** vs ST 31±12 min*; SDNN: I + ST 128.04±9 ms** vs ST 116.07±8 ms*; **p<0,01; *p<0.05) without significant changes in ESVI, EDVI, TDP, ΔSVI and ET. HR was significantly reduced in I + ST compare to ST (72±5 bpm vs 91±4 bpm, p<0.001). In 90 day TDP, ESVI, ESVI, ΔSVI and ET in addition to TIB, SDNN were better in I + ST, compare to ST. (I + ST vs ST: ESVI 55.3±7.4 ml/m2* vs 64.5±7.5 ml/m2; EDVI: 91.4±8.4 ml/m2* vs 100.3±9.2 ml/m2; E/Em 11.2±4.7* vs 13.7±5.1; MPI 0.78±0.34* vs 1.24±0.62; ΔSVI 9.2±1.6 ml/m2** vs 6.7±1.8 ml/m2; ET 495±147* vs 416 ± 128 sec; *p<0.05). Fewer hospitalizations were observed in I + ST (4** pts vs 11 pts; **p<0.01). Noticeable side effects to withdraw drugs were not observed. Thus, in pts with postinfarction HF NYHA IV and ß-blockers intolerance addition of I to ST further improves cardiac parameters in terms of LV remodeling, contractility and ischemia, and reduces hospitalization rate probably through HR control.

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Should Natriuretic Peptide (BNP) be considered for a marker of symptomatic status in severe aortic stenosis patients?

M. Katz[1], G Spina[1], F. Tarasoutchi[1], C. Strunz[1], R.O. Sampaio[1], M. Grinberg[1]. *[1]Heart Institute (InCor), Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo*

Purpose: B-type natriuretic peptide (BNP) can be used to identify patients with heart failure in valvular heart diseases. We investigated the usufulness of BNP in severe aortic stenosis (AS). **Methods:** Sixty-two patients with severe aortic stenosis confirmed by echocardiography (ECHO) and medium transvalvular pressure gradient > 50 mmHg, were enrolled. Among them, 74% were symptomatic (heart failure, angina and syncope). Patients were evaluated clinically and by ECHO. Patients with other valvopathies, aortic regurgitation, atrial fibrillation and coronary artery disease were excluded. Blood samples were drawn for BNP dosages on enrollment. Differences between patient groups were analyzed with 2-sample t tests for continuos variables. The Spearman's rank correlation analyzed BNP levels and left ventricular mass correlation. **Results:** Age, ejection fraction (EF), left atrium diameter (LAD) and left ventricular mass (LVM) were similar in both populations. BNP levels were similar in asymptomatic and symptomatic patients (pts), with a nonsignificant trend through higher levels in symptomatic pts. (289 + 565 pg/ml in symptomatic vs 95 + 76 pg/ml in asyptomatic, p=0.178). BNP levels had a significant correlation with left ventricular mass (r = 0.34, p = 0.0076). **Conclusion:** BNP levels were not correlated with symptomatic status. There was a correlation between left ventricular mass and BNP, suggesting that, in severe aortic stenosis, the hypertrophy is an important factor affecting BNP levels. We should take care in considering BNP as a marker of symptomatic status in this model of diastolic dysfunction.

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Intake of isoflavones-enriched soy product fermented with Enterococcus faecium decrease total and non-HDL cholesterol levels in rats

D.C.U. Cavallini[1], E.A. Rossi[1], I.Z. Carlos[2], R.C. Vendramini[2], R.C Damaso[3], R. Bedani[1], G.F. Valdez[4]. *[1]Department of Food & Nutrition, Faculty of Pharmaceutical Sciences, São Paulo State University, Araraquara, São Paulo, Brazil [2]Department of Food & Nutrition, Faculty of Pharmaceutical Sciences, São Paulo State University, Araraquara, São Paulo, Brazil [3]Department of Clinical Analysis, Faculty of Pharmaceutical Sciences, São Paulo State University, Araraquara, São Paulo, Brazil [4]Department of Clinical Analysis, Faculty of Pharmaceutical Sciences, São Paulo State University, Araraquara, São Paulo, Brazil [5]Department of Physical Education and Human Movement, São Carlos Federal University, São Carlos, SP, Brazil [6]Department of Food & Nutrition, Faculty of Pharmaceutical Sciences, São Paulo State University, Araraquara, São Paulo, Brazil [7]Reference Center for Lactobacilos, CERELA, S.M. Tucumám, Argentina*

Background: Elevated blood cholesterol has been shown to increase the risk of cardiovascular heart disease. Soy-based diet containing isoflavones may influence cardiovascular disease through cholesterol-lowering, antioxidant and anti-inflammatory effects. We previously showed, in rabbits and in normocholesterolemic patients, that a soy product fermented by *Enterococcus faecium* (CRL 183) significantly improve the lipid profile. The aim of this study was to evaluated the effects of this fermented soy product enriched with isoflavones on lipids levels in rats. **Methods and Results:** Male rats were randomly divided into four groups (n=10). They were fed a chow diet (control group C); diet added with cholesterol (1% w/w) and cholic acid (0.25% w/w) (H group); diet added with cholesterol and cholic acid plus fermented soy product (HF group); diet added with cholesterol and cholic acid plus fermented soy product enriched with isoflavones (50 mg total isoflavones/ 100g) (HFI group) for two months. Fasting blood samples were collected for determination of lipid concentration (tryacylglycerols, serum total and HDL cholesterol) at days 0, 30 and 60 of treatment. Non-HDL cholesterol (LDL+IDL+VLDL cholesterol) was calculated by subtraction of HDL cholesterol from total cholesterol. Rats fed a fermented soy product enriched with isoflavones (HFI group) had significantly (p<0.05) less serum total cholesterol (15.8 ± 1.2%) compared with rats fed a hypercholesterolemic diet (H group). Serum HDL cholesterol and tryacylglicerols concentrations did not differ between treatments. Non-HDL cholesterol was less (p< 0.05) in rats fed a fermented soy product enriched or not with isoflavones (27.5 ± 2.6% and 22.6 ± 1.9%) compared to H group. **Conclusions:** The results indicate that this fermented soy product enriched with isoflavones may decrease the risk of cardiovascular disease through improved lipid profile.

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LIPOPROTEIN (a) CONCENTRATION IN THREE AFRO-AMERICAN POPULATIONS IN ZULIA STATE, VENEZUELA

D. Aparicio[1], V. Bermúdez[1], E. Mengual[1], J. Faria[1], F. Finol[1], X. Guerra[1], D. Gotera[1], L. Acosta[1], E. Rojas[1], L. Sorell[2]. *[1]Endocrine-Metabolic Research Center "Dr. Félix Gómez". Medicine School. University of Zulia. Maracaibo, Venezuela. [2]Genetic engineering and Biotechnology Center of Habana, Cuba.*

Objetive. Lipoprotein (a) is considered as a risk factor for cardiovascular disease and its behavior in Venezuela remains unknown, reason why the main purpose of this research was to determine Lipoprotein (a) concentration in Afro-American populations in Zulia State, Venezuela. **Materials and Methods.** 423 individuals of which 311 were healthy and randomly chosen Afro-American individuals in those who Lp(a) was quantified by the enzyme linked inmunosorbent assay method (ELISA). Comparisons were made by the U Mann-Whitney test or the one factor ANOVA (previous logarithmic conversion) and the tukey post hoc test according to the case, considering p < 0, 05 as a statiscally significant value. **Results.** Total cholesterol, triglicerids, VLDL-c and LDL-c concentrations were found in normal ranges in studied populations. Nevertheless, HDL-c level was significantly lower in Bobures population (38, 59 ± 11,65) compared with those in Santa María (51,38 ± 14,46) y San José (46,15±11,99). Using the Kolmogorov-Smirnov Z test we found that Lp(a) is distribuited in a no normal manner, reason by which the results has been shown as medians. Lp(a) concentration was found unusually elevated in the Afro-American groups compared with the white Hispanic group of Maracaibo (Bobures: 59,00 mg/dl; Santa María: 47,00 mg/dl; San José: 41,00 mg/dl; Maracaibo: 28,50 mg/dl). **Conclusions.** Lp(a) concentration is higher in our Afro-American groups than the reported in another black race populations natives from U.S. and Africa, fact that could explain the high prevalence of cardiovascular disease within this populations. **Keywords.** Lipoprotein(a), risk factor, Apo(a), cardiovascular disease.

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Asymmetric and symmetric dimethylarginine are weaker predictors than homocysteine of long-term mortality in both men and women with stable angina

G. Svingen[1], P.M. Ueland[2], Ø. Bleie[1], J.E. Nordrehaug[1–2], T. Folkestad[1], K. Kuiper[1], M. Ebbing[1–2], E.R. Pedersen[2], S.E. Vollset[3], O. Nygård[1–2]. *[1]Dept. of Heart Disease, Haukeland University Hospital, Bergen, Norway [2]Institute of Medicine, University of Bergen, Bergen, Norway [3]Dept. of Public Health and Primary Health Care, University of Bergen, Bergen, Norway*

Total homocysteine (tHcy) is an established marker of mortality in patients with cardiovascular disease. It has recently been claimed that asymmetric dimethylarginine (ADMA), a competitive inhibitor of the enzyme, nitric oxide synthase (NOS), may be a particular strong prognostic marker. Symmetric dimethylarginine (SDMA) may reflect impaired renal function and competitively inhibit trans-membrane transport of other arginines. We studied these arginines as predictors of long-term mortality in both men and women with stable angina. Between January 2000 and June 2001, a total of 1039 patients (291 (28.0%) women) with suspected coronary artery disease (CAD) were examined with diagnostic coronary angiography, and then followed for an average (SD) of 5.85 (1.25) years. Mean (SD) age was 61.5 (10.5) years. Women were significantly older than men, mean (SD) ages 63.4 (10.7) and 60.8 (10.3) years (p<0.001), respectively. Extent of CAD was scored as 0–3 according to the number of vascular territories affected by a stenosis of at least 50% of the vessel diameter. Among the patients, 235 (22.6%) had no significant CAD, whereas 357 (34.4%) had 3 vessel disease. Mean (SD) levels of analytes at baseline were tHcy 11.3 (5.0) μM, L-arginine 48.9 (11.1) μM, ADMA 0.75 (0.14) μM, SDMA 0.59 (0.19) μM and creatinine 80.0 (32.1) μM. tHcy (r=0.34), ADMA (r=0.28) and SDMA (r=0.68) were strongly related to creatinine, and tHcy showed significant associations with ADMA (r=0.20) and SDMA (r= 0.38) (all p<0.001). A total of 118 patients (11.4%) died during follow-up. All Cox regression models are adjusted for gender and age, and results are represented as increase in risk (95% CI) per quartile increment in the specified variable. Mortality was significantly predicted by tHcy (RR 1.50 (1.24–1.82)) and SDMA (RR 1.28 (1.06–1.54)), but not by ADMA (RR 1.14 (0.96–1.35)), L-arginine (RR 0.94 (0.80–1.11)), creatinine (RR 1.19 (0.98–1.44)), or ratios between various arginines (data not shown). In a model including tHcy, SDMA, creatinine, extent of CAD and treatment after angiography (medication only, PCI, bypass surgery, other surgery), tHcy (RR1.43 (1.17–1.75)), but not SDMA (RR 1.15 (0.92–1.44)), predicted survival. Adjustment for hypertension, diabetes, previous myocardial infarction, ApoA1, ApoB and CRP minimally attenuated these estimates, whereas additional adjustment for current smoking or ejection fraction somewhat weakened their effect; tHcy (RR 1.31 (1.06–1.61)). In gender specific, multivariate models, both ADMA and SDMA failed to prove as significant markers for mortality, whereas tHcy remained significant (p<0.04). In conclusion, tHcy is a stronger predictor of long-term mortality than ADMA or SDMA in patients with stable angina, regardless of gender.

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Does the frequency of syncope predict the response to Head-up tilt-table testing in adolescents

R. Andalaft[1], D. Moreira, R. Habib, L. Moraes, K. Tukamoto, G. Bellini, V. Cerutti, R. Hams, D. Serrano, C. Marques. [1]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA - BRAZIL*

Background: Head-up Tilt Table Testing (HUTT) is used to evaluate patients with unexplained syncope, however the relationship between the frequency of symptoms and results of the HUTT is not known. Objectives: This study sought to determine wether the frequency of presyncopal and or syncopal episodes predicts the response to HUTT in adolescents. **Methods:** We evaluated 91 adolescents (34 boys) aged between 10 and 19 years (mean 15.2 years) with history of vasovagal syncope (mean 5.7±7.2 episodes). The HUTT was performed after a supine rest for 10 minutes, followed by 70° tilt test for 45 minutes or until the subject had syncope. Ten patients with no history of syncope served as controls. **Results:** 43 patients and none of the controls had positive response (sensitivity 47.3% and specificity 100%) to HUTT. The mean time to response was 16.6± 10.7 minutes. Presence of recurrent syncope (>5 episodes),frequency of episodes in last year (>2 episodes in the last year) and short time between syncope and HUTT (Recurrent syncope < 6 mo before HUTT) would not predict the response to the HUTT (p>0,05) **Conclusion:** 1. The HUTT evaluates adolescents with recurrent syncope with a satisfactory positivity and an elevated specificity; 2. The frequency of symptoms would not predict the response to the HUTT.

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Long Term Outcome Of Patients With Type B Aortic Dissection

D. Bracco[1], R Marenchino[1], A Domenech[1], V Cesareo[1], L Diodato[1]. [1]*Hospital Italiano. Buenos Aires*

Objectives: To describe the long term outcome of patients with type B aortic dissection. To assess the effect of initial treatment initiated during the first hospitalization and aortic diameter on the long term outcome. **Methods:** This descriptive study included 90 patients treated for type B aortic dissection in the Hospital Italiano de Buenos Aires between 1974 and 2006. A survival analysis was perfomed. Clinical endpoints were defined as death, occurrence of new aneurism or disection, re-operation, or major vascular events (MI and stroke). **Results:** Of the 90 patients, 40 presented with acute type B aortic dissection. Median age was 63.5 years (31–84). Most of the patients were male (74.4%), and 90% had history of hipertension. Global survival at 1, 5, and 10 years (Kaplan Meier) was 90% (95%CI 81–95), 72% (95%CI 68–83%), and 46% (95%CI 29–69%). Survival free from events at 1, 5, and 10 years (Kaplan Meier) was 84% (95%CI: 75–91), 61% (95%CI: 47–73), and 28% (95%CI:29–46). Presence of rupture and age >70 years were associated with higher mortality during follow up. However, older age was not statistically significantly associated with mortality due to rupture (p=1). There was no difference in mortality in patients treated with initial conservative treatment compared with patients treated with surgery (x2 = 0.16 p= 0.69). Those patients with acute aortic disection treated with conservative therapy had similar mortality (x2 = 0.50 p= 0.48) and occurrence of events during follow up (x2 = 0.10 p= 0.75) compared with those treated surgically during inicial hospitalization. Patients with aortic diameter greater than 5 cm during the index event did not have higher mortality during follow up (x2 = 2.80 p= 0.09) compared with those with smaller aortic diameter, but they experienced more events (x2 = 6.59 p= 0.01). **Conclusions:** In this cohort of patients with type B aortic disection, the survival and occurrence of events during follow up are similar to the rates reported in the literature.Our findings support the conservative treatment in uncomplicated type B aortic dissection whenever the aortic diameter is <4.5 cm. Patients with aortic diameter >5 cm should be closely followed because they have a high risk of events.

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B-Type Natriuretic Peptide and anemia, are they related?

R. A.F. Gomes[1–2], L.M. Sena[1–2], J.L. Ferreira[1–2], C. Sarteschi[2], S.M. Martins[2], A.D.M. Feitosa[2]. [1]*UNIVERSIDADE DE PERNAMBUCO* [2]*REAL HOSPITAL PORTUGUÊS DE BENEFICÊNCIA EM PERNAMBUCO*

Introdution: Heart failure (HF) is a significant cause of morbidity and mortality all over the world. Anemia is common in patients with HF, occurring in 25% to 50% of patients; furthermore, it has been identified as a risk factor for HF incidence and mortality. Advanced HF have demonstrated an association between mild-moderate anemia and worsening HF symptoms, decreased exercise capacity, and increased mortality, independent of other HF prognostic factors, hemodilution parameters, cardiac cachexia, and renal insufficiency. B-type natriuretic peptide (BNP) is a cardiac neurohormone synthesized by the ventricles and released in response to ventricular wall tension and stretch. This peptide has been associated with left ventricular dysfunction and damage, NYHA class, and prognosis in HF. Studies shows that not only increased levels of BNP were found to confer a significant survival disadvantage, but anemia itself was associated with significantly higher levels of BNP. **Objectives:** The aim of this study was to evaluate the correlation between BNP and anemia in patients with acute dyspnea. The association BNP or anemia with mortality was investigated. **Methods:** BNP concentrations were measured by radioimmunoassay test in fourth six patients presenting acute dyspnea in urgent care from march to august 2007. The data were review retrospectively and anemia was defined for World Health Organization (WHO) criteria. BNP values were classified in three groups: high (≥400pg/mL), intermediate (101–399pg/mL) and low (≤100pg/mL). The Pearson correlation coefficient (r) and the Fisher's exact test were used, respectively, to compare the BNP with hemoglobin and to verify the mortality involving BNP levels and anemia. **Results:** Mean age was 74,6 ± 13,7 years and 27 (58%) of patients were male. The diagnosis of admission was respiratory infection in 17,3% and 28,2% of patients had renal insufficiency. The average of urea and creatinine were respectively 61,8 mg/dL (SD = 38.7) and 1,8 mg/dL (SD = 1.62). The time of hospitalization had a median of 10 days (SD = 54 days). The stratification levels of BNP obtained in 54,3% (25) high, in 21,7% (10) intermediate and in 23,9% (11) low values. The BNP concentration was negatively correlated with the levels of hemoglobin (r=-0,384, p=0,009). The mean of hemoglobin in patients with high, intermediate and low values of BNP was, respectively, 10,9mg/%, 11,1mg/% and 12,6mg/%. The prevalence of anemia in all patients was 80,4% (n=37), finding 84% (n=21) in those with high BNP and 63,6% (n=7) in low BNP. Anemia didn't show any difference in mortality (p=NS), but there are a trend in mortality rate in the groups of BNP levels high compare with low levels (26,1% vs 0%, p=0,089). **Conclusion:** Values of B-Type natriuretic peptide can be used to predict death and have an inverse correlation with the levels of hemoglobin. These results still suggest that BNP can offer important prognostic information in patients with acute dyspnea in urgent care.

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Incidence of the cardiovascular risk factors in the patients of the Health Campaign in Santo André, Brazil

A. C. Santomauro Jr[1], M.R. Ugolini[1], L.Z.P. Oliveira[1], I.A.B. Bincoleto[1], F.M.B. Rossi[1], B.S. Santoro[1], C. Nagaoka[1], J.F. Kelendjian[1], E.R. Suarez[1], C. Ferreira[1]. [1]*FACULDADE DE MEDICINA DO ABC*

Introduction: The systemic arterial hypertension is associated with high morbidity and mortality for cardiovascular complications. The intensive control of blood pressure demonstrated to be effective in reducing these complications. Act of following the trail presents an opportunity to collect observational data, which while not replace the direct evidence of randomized clinical trials, can produce substantial evidence on incidence and response to treatment of systemic arterial hypertension. OBJECTIVE: Appraise the profile of the population that participated in the IV Health Fair of the Faculty of Medicine ABC. **Methods:** During the IV Health Fairs of the Faculty of Medicine ABC in Santo André, Brazil, the League for Prevention of Coronary Diseases collected data about habits and risk factors for coronary disease, and arterial pressure was measured via a sphygmomanometer. **Results:** There were analyzed 211 patients (mean: 54.19 years), being 92 males and 119 females. 14.2% were smokers; 11.8% were drinkers; 58.8% were sedentary, and only 22.9% were doing diet with less sodium intake and hypocholesterolemic diet. Presence of family history for artery disease in 54.5%. 45,0% of the participants had systemic arterial hypertension early-diagnosticated; 15.2% reported being diabetic; And 34.6% demonstrated knowledge about possible dyslipidemia. 59.7% were already using antihypertensive drugs, anti-diabetes drugs and drugs that lower cholesterol. Using the measurement of the blood pressure we could classify the patients, according to the Guidelines of the Brazilian Society of Cardiology, in: great (13.3%); normal (18.5%); borderline (15.6%); HAS stage 1 (27.4%); HAS stage 2 (13,7%); HAS stage 3 (9.9%); hypertension systolic isolated (1.4%). **Conclusion:** Because of the high incidence of HAS in the population studied, future campaigns should be carried out with greater frequency in order to screening patients to specialized medical care.

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ASSESSMENT OF THE ANALGESIC EFFECTIVENESS OF GENERAL ANESTHESIA AND SPINAL ANESTHESIA USING MORPHINE AND ROPIVACAINE IN PATIENTS SUBMITTED TO MIOCARDIAL REVASCULARIZATION SURGERY

V Pinheiro[1], R Diniz[1], M Ferreira[1], J Costa[2], E Pinheiro[2], M Cascudo[2]. [1]*Universidade Federal do Rio Grande do Norte* [2]*Instituto do Coração de Natal*

Introduction: The purpose of the study was to assess the analgesic effectiveness of general anesthesia combined with spinal anesthesia using morphine and ropivacaine compared to general anesthesia alone in reducing pain in patients submitted to cardiac surgery. **Material and Method** This is a randomized controlled blind clinical trial. A total of 60 patients submitted to elective surgery were studied. The sample consisted of adults of both sexes, aged from 35 to 75 years, with adequate verbalization and comprehension skills, ASA physical status I and II, not presenting with pre-operatory pain, extubated up to 10 hours after surgery, who consented to take part in the study. Exclusion criteria were: hemodynamic instability, local or systemic contraindication of spinal anesthesia, chronic pain, reoperation or reintubation, allergies, chronic use or addiction to opioids. The patients were allocated to two groups: GI (general anesthesia combined with spinal anesthesia using morphine and ropivacaine) and GII (general anesthesia). In GI, spinal anesthesia was performed with a 400μg/kg dose of morphine and 0.3 ml of 0.5% ropivacaine. General anesthesia was then induced with 40 mg/ml of diprivan, sufentanyl and pancuronium 0.1 μg/kg, maintained with 20 to 40 mg/ml of diprivan and muscle relaxant with pancuronium 0.1 μg/kg. GII was performed only with general anesthesia. The 0 to 10 numerical grading scale (NGS) was used to assess pain intensity upon waking, after reaching <3 on the Ramsay sedation scale, and every 2 hours afterwards for 24 hours, during respiratory exercise and thorax drain removal. Statistical analysis used SPSS software, version 13.0. The chi-square test with Yates's continuity correction and Fisher's test were used to determine the association between the independent variables and final outcome. **Result** The groups were similar as to age, sex, schooling, surgery duration, type of drain and physical status. GI showed less pain intensity than GII upon waking (p = 0.001), as well as less intense pain in the first 24 hours post-operatory (p = 0.001) and during respiratory exercises (p = 0.001). There was no pain intensity difference after thorax drain removal. More complementary analgesics were needed for group GII. There were no complications such as respiratory depression, meningitis or epidural hematomas, although nausea (p = 0.001), vomiting (p = 0.002) and itching (p = 0.003) were more frequent in the GI group. **Conclusion** The study suggests that general anesthesia combined with spinal anesthesia using morphine and ropivacaine has a better analgesic effect in the post-operatory of cardiac surgery.

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SUSPICION OF ACUTE CORONARY DISEASE IN WOMEN, CLINICAL CHARACTERISTICS, TREATMENT AND EVOLUTION AT THIRTY DAYS

R. Leon De La Fuente[1], S. Saravia Toledo[1], P. Gallo[1], S. Araujo[1], P. Kairuz[1], F. Wayar[1], N. Marquez[1], A. Lopez Facchin[1], M. Geronimo[1]. [1]*INSTITUTO PARA INVESTIGACIONES CARDIOLOGICAS*

Aims:: To evaluate the history, forms of presentation, treatment and evolution at thirty days in women (W) and men (M) hospitalised for precordial pain with suspicion or diagnosis of acute coronary disease. **Material and Methods:** Multicentric prospectic registry of patients (P) hospitalised in consecutive form in intensive care units with suspicion or confirmation of acute coronary syndrome in the city of Salta. The P signed a written consent form. Samples of troponine T (TT) were taken at the moment of admission and 6 hours later. A telephonic follow-up was performed 30 days after joining the registry. **Results:** 582 P were admitted in the study, 225 (38,4% were women, age 67,5 vs. 58,3 ($p<0,001$). The W had less previous records of infarct (6,7% vs. 14% p 0,004),, revascularisation (11,5% vs. 19,75% p 0,012), addiction to tobacco (12,9% vs. 37,3% $p<0,001$). There were no differences in prior heart failure and dyslipemia. They had more prior high blood pressure (HBP) (70,1% vs. 58,9% p 0,007) and they were not differences about the admission electrocardiogram(ECG) ST segment elevation (STE)10.17%, ST segment depression (STD) 15,9%, non-diagnosed (ND) 74%. 32,2% had positive TT vs. 39,8% (p 0,07), and they underwent cinecoronariography (CCG) 37% vs. 46,3% (p 0,03). The incidence of revascularisation (REV) was 16,3% vs. 28,7% ($p<0,001$), died 3,9% v. 1,42% (p 0,056) and the combined final point (revascularisation and/or death) was19,4% vs. 39,4% (p 0,002). **Conclusions:** 1. The W were of older age, had more HBP and fewer previous cardiovascular records. 2. There was no difference with the ECG at admission. 3. They showed tendency to fewer positive TT. 4. They showed fewer combined final points, were subject to fewer invasive treatments (CCG and REV) but showed a tendency to more mortality rate, which could be justified by their older age.

P1003

Ecologic methods for measuring health disparities attributed to socioeconomic factors: risk of premature CVD mortality across geo-demographic areas of Porto Alegre, Brazil

S. L. Bassanesi[1], M.I.R. Azambuja[1], A.C. Achutti[2]. [1]*Universidade Federal do Rio Grande do Sul - Brazil* [2]*Academia Sul-Riograndense de Medicina - Brazil*

Rationale: Within cities from countries like Brazil there are important socioeconomic disparities. Epidemiologic studies indicate that these disparities may produce differences in rates of premature cardiovascular deaths. Monitoring these disparities should be a permanent concern for policy makers and other organized groups of society in order to evaluate and reorient investments to reduce such health inequalities. **Objectives:** To demonstrate ecologic methods and indicators that describe social disparities in chronic diseases occurrence. We will do this through an analysis of the premature CVD mortality across districts of Porto Alegre, Brazil. **Methods:** Information must be aggregated by geographic areas to allow the ecologic analysis of association between independent (socio-demographic) and dependent (disease occurrence) variables. Standardization of rates by age and sex is recommended. Bayesian methods to smooth the variability associated with the random errors due to small numbers need to be done. After this preliminary preparation, stratification of the districts according to the levels of socioeconomic variables follows. The spatial/ecologic analysis is then performed using the SigEpi and the GeoDa softwares. The Brechas 1.0 software, from the Argentinean Health Ministry and the PAHO, was used to produce most of the measurements. **Results:** Data on 52.000 deaths that had occurred in Porto Alegre from 2000 to 2004 was obtained from the city health department. Socioeconomic variables for each district were computed from microdata derived from the 2000 population census and from the city health department databank. The variables chosen to classify and stratify the districts were: level of education, income, external causes mortality, infant mortality, home crowding, aging and fertility. After smoothing the indicators and mapping, three methodologies were used to distribute the districts in four socioeconomic strata: Principal component, Autocorrelation and Cluster analysis. Comparisons among the strata were made. Then Brechas was used to obtain the following measures: range measures, population-attributable risk-percent, Gini coefficient, Lorenz curve, Concentration index and curve, regression-based relative effect index, slope index of inequality, relative index of inequality (RII) and entropy indexes. The premature cardiovascular mortality in the worse strata was 2.6 times higher then the mortality registered in the best strata. The RII was 3.3. It results from the comparison of the extreme estimated districts using information from all of them, each one weighted by their population size and socioeconomic position. A useful measure is the population-attributable risk – percent, which was estimated as being 44.7%, meaning that 44.7% of the premature deaths could be considered as avoidable. The Gini coefficient was 0.22, the concentration index was as -0.18 and the Theil index, 0.08, showing an important degree of inequity. The disparities were greater for the cerebrovascular diseases then for ischemic heart disease. **Conclusions:** Analysis of social disparities in CVD outcomes and the tools that allow it, like Brechas, should be incorporated into routine CVD surveillance. The data management steps required before the application can be used may still pose some degree of difficulty to its incorporation by the public health services.

P1004

SUSPICION OF ACUTE CORONARY DISEASES, CLINICAL CHARACTERISTICS, TREATMENT AND EVOLUTION AT THIRTY DAYS

R. Leon De La Fuente[1], S. Saravia Toledo[1], P. Gallo[1], C. Laspiur[1], S. Araujo[1], C. Flores Borja[1], A. Farah[1], J. Gomez[1], J. Zapata[1], F. Rassi[1]. [1]*INSTITUTO PARA INVESTIGACIONES CARDIOLOGICAS*

Aims:: To evaluate the records, forms of presentation, treatment and evolution at thirty days in patients hospitalised for precordial pain with suspicion or diagnosis of acute coronary diseases. **Material and Methods:** Multicentric prospectic registry of patients (P) hospitalised in consecutive form in intensive care units with suspicion or confirmation of acute coronary syndrome in the city of Salta. The patients signed a written consent form. Samples of troponine T (TT) were taken at the moment of admission and 6 hours later. A telephonic follow-up was performed 30 days after joining the registry. **Results:** 584 patients were admitted in the study with an average age of 61,83 and a 39,35% of women. Previous records: heart failure 8, 2%, infarct 11, 6%, revascularisation 16, 5%, dyslipemia 42, 7%, addiction to tobacco 27, 8%, diabetes 20,3%, high blood pressure 63,3%. Electrocardiograph presentation: ST segment elevation 13,7%, ST segment depression 15,6%, non-diagnosed (ND) 70,3%. Pharmacological treatment: B blockers 73,97%, aspirin 88,84%, heparin 53,42%, clopidogrel 29,74%, nitroglicerine 75,14%, angiotensin-converting enzyme inhibitors 39, 13%, estatines 42,46%. Invasive treatment: cinecoronariography 43,51% (showing injury to three vessels18,50%, trunk injury of the left coronary artery 9,69% and without significant injuries 26,43%), revascularisation 24,8% (CRM 5,13% and ATC 19,6%). Positive Troponine T 34,5%. The mortality rate was 2,38% and the incidence of combined final point (revascularisation and/or death) 25,8%. **Conclusiones:** 1. The P were mostly men with a regular prevalence of previous cardiovascular records. 2. The main form of electrocardiographic presentation was the electrocardiogram ND. 3. The pharmacological treatment received was in accordance with the guides, with the exception of the estatines. 4. A high percentage of the patients received invasive treatment.

P1005

Myocardial infarction : Strategy and results in hospitals with/without PCI chance.

L. Herrera-Para[1], A Reina-Toral[1], R Diaz-Contreras[1], R Lirola-Liebanas[1], G Moratalla-Cecilia[1], F Manzano-Manzano[1], I Slimobich[1], J Benitez-Parejo[1], E Aguayo-De Hoyos[1], JC Luque-Moscoso[1]. [1]*ICU, " [2]Virgen de las Nieves" [3], Hospital, Granada (Spain)*

Introduction: The type of reperfusion strategy in the myocardial infarction (MI) represents a topic in constant controversy. Clinical evidence shows that an invasive coronary procedure improves the perspective of the patient. Nevertheless, in our environment, most of the population does not have opportunity of an angioplasty because of the delay that would represent the transfer to a center with this possibility. **Objectives:** - Description of patients attended with Acute Coronary syndrome (ACS) with persistent ST elevation in hospital with availability of Percutaneous Coronary Intervention (PCI) versus hospitals which do not have it. - Analysis of results between hospitals with different therapeutic possibilities, as well as the adjustment to the clinical guidelines. **Methods:** - Descriptive analysis from the record ARIAM (multicentral national record of patients admitted to Cardiologic Intensive Care Unit with suspicion of ACS). Are included patients attended in the province of Granada (Andalusia, Spain) during the period on January 1, 2005 to July 1, 2007, with initial diagnosis of STEMI. There are registered demographic variables, precedents, clinical characteristics, delays and place of initial performance, use of diagnostic and therapeutic means, ICU stay, complications and mortality. - Comparison of characteristics of the patients as well as the results (complications, exitus, stay) between hospitals with/without Interventionist Cardiology service. **Results:** - A total of 980 patients was attended with MI initial diagnosis in the mentioned period (427 in hospital with Invasive Cardiology). Age: 65.14±12.9 years; 73.9 % ?; Extrahospital fibrinolysis 10.2 % ; TIMI Score: 3.58±2.43; ARIAM Priority I (absolute indication of reperfusion): 25.5 %, ARIAM II (risk / benefit assessment): 63.3 %; Killip I at admission: 76.2 %; Reperfusion strategy: Fibrinolysis: 67.14 % (95.2 % Tenecteplase), Primary PCI: 3.88 %; Haemorrhagic complications: 0.7 %; Symptoms-needle preICU delay: 163.4 ± 111.6; Symptoms-needle ICU delay: 250 min ± 199; Door-to-needle (Emergency room) delay: 49 min ± 55; Door-to-needle (ICU) delay: 75 min ± 93; Median of ICU stay: 2 days; Mortality: 5.2 %. - After the comparison according to the kind of hospital (with/without PCI), it is appreciated: 1 - Significant difference such as higher age ($p=0.027$), severity of the MI (greater punctuation Killip, $p=0.000$), less absolute indications of fibrinolysis ($p=0.000$) and minor achievement of this ($p<0.02$) in hospitals that lack of PCI. 2 - The hospital with Interventionist Cardiology has a greater delay at the time of fibrinolysis achievement ($p=0.045$). 3 - Center with availability of PCI carried out more Angioplasties (primary and secondary, $p = 0.000$). **Conclusions:** - Our habitual technique of myocardial reperfusion is pharmacological. - In patients with MI, we have not seen significant differences in complications, ICU stay or mortality according to having been treated in hospitals with different resources. - The achievement of extrahospital fibrinolysis and in secondary hospitals, supposes a significant saving time, which must be considered when planning a transfer to other center for the evaluation of angioplasty. - The patients treated in hospital with PCI resource have more probability of achievement of Primary PCI.

P1007

PAINFUL PROCEDURES IN THE POST-OPERATORY OF CARDIAC SURGERY

V. Pinheiro[1], C Pimenta[2]. [1]*UNIVERSIDADE FEDERAL DO RIO GRANDE DO NORTE* [2]*UNIVERSIDADE DE SÃO PAULO*

Objectives: The purpose of this study was to characterize six painful procedures performed on patients after myocardial revascularization, as to pain intensity, location, and quality; compare the perception of patients and professionals regarding the intensity and location of the pain caused by these procedures and describe the analgesic methods used before the procedures were performed. The chi-square test with Yates' correction and Fisher's exact test (when cells with expected events < 5) were applied. **Material and Method:** A total of 50 patients, 263 procedures and 32 professionals who performed them were studied. The selection of patients, professionals and procedures was done by convenience. The procedures studied were: respiratory exercise, endotracheal aspiration,, endotracheal tube removal, mediastinal drain removal, pleural drain removal, and Foley catheter removal. A 0 to 10 numerical scale was used to assess pain intensity. The pain site was assessed using a body diagram and quality by means of a reduced McGill Pain Questionnaire. **Result:** The opinion of patients and professionals about pain intensity differed ($p < 0.05$) in four of the procedures analyzed. The professionals underestimated the pain caused by endotracheal aspiration, pleural drain

removal, and mediastinal drain removal, and overestimated the pain resulting from respiratory exercise. There were coincident opinions about the pain caused by removing the endotracheal tube and Foley's catheter, as well as about pain sites in the six procedures. The pain caused by respiratory exercise and by Foley catheter removal was described as bothersome; endotracheal aspiration and endotracheal tube removal were referred to as suffocating and bothersome; mediastinal drain removal was described as drawing and suffocating and pleural drain removal as unbearable. Among the 263 procedures studied, 167 (63.49%) were considered by the patients as painful. Previous analgesic was given 11 times (4.18%), only in pleural drain (6 times) and mediastinal (5 times) removal procedures. **Conclusion:** We observed a divergence of opinion between the patients and the professionals as to the intensity of pain caused by the procedures studied as well as little use of analgesic intervention.

P1008

ADDITIVE VALUE OF TROPONINE T TO ADMISSION ELECTROCARDIOGRAM IN PATIENTS WITH SUSPICION OF ACUTE CORONARY DISEASE

S. Saravia Toledo[1], P. Gallo, R. Leon De La Fuente, F. Marconetto, C. Laspiur, C. Rodriguez, G. Castillo, F. Gomez Ortega, C. Swarzman.

Aims:: To assess the additive value of troponine T to the admission electrocardiogram (AECG) in the prediction of cardiovascular events in patients hospitalised with suspicion or diagnosis of acute coronary disease. **Material and Methods:** Multicentric prospectic registry of patients (P) hospitalised in consecutive form in intensive care units with suspicion or confirmation of acute coronary syndrome in the city of Salta. The P signed a written consent form. Samples of troponine T (TT) were taken at the moment of admission and 6 hours later. A telephonic follow-up was performed 30 days after joining the registry. The P were divided considering the AECG in ST segment elevation (STE), ST segment depression (STD) and non-diagnosed (ND). The incidence of death, angioplasty, revascularisation surgery and combined end points were evaluated in the general population and in patients with positive troponine T. **Results:** 584 patients were admitted in the study with an average age of 61,83 and 39,35% of women. Previous records: heart failure 8, 2%, infarct 11, 6%, revascularisation 16, 5%, dyslipemia 42, 7%, addiction to tobacco 27, 8%, diabetes 20,3%, high blood pressure 63,3%. Electrocardiograph presentation: STE 13,7%, STD 15,6%, ND 70,3%. Positive TT 34,5%. The event incidence regarding the AECG in the general population and positive TT population were: STE: death 8,3% vs. 8,3% (p NS), angioplasty (PCI) 56,2% vs. 63,15% (p NS), coronary surgery (CABG) 9,37% vs. 5,26% (p 0,10), combined end point (revascularisation and/or death) (CEP) 70,8% vs 78,3% (p NS). STED: death 1,19% vs. 2,5% (p NS), PCI 26,1% vs. 44,1% (p 0,057), CABG 9,52% vs. 20,58% (p 0,10) CEP 35,71% vs. 55% (p 0,041). ND: death 1,6% vs. 4,3% (p 0,1), PCI 13,6% vs. 25,5% (p 0,003), CABG 3,5% vs. 11,1% (p 0,003), CEP 18,3% vs. 37,6% ($p<0,001$). **Conclusions:** 1. TT has an important additive value to AECG in the prediction of cardiovascular events when it is ND. 2. When the AECG is STD, it provides additional information, although it is less significant. 3. It gives no further information when the AECG is STE.

P1009

Cardiac I Troponin as a Predictor of Normal Coronary Arteries in Association to Gender in Patients with Acute Coronary Syndrome without ST Segment Elevation.

D. Di Nanno[1], L. Lopez[1], M. Consoli[1], C. Pasinato[1], A. Bordenave[1], J. Tartaglione[1], S. Chekherdemian[1]. *[1]Hospital Churruca*

Background: Fifteen to thirty percent of patients admitted to the intensive coronary care unit with a diagnosis of acute coronary syndrome without ST segment elevation have angiographically normal coronary arteries. Such finding represents a diagnostic and therapeutic challenge in clinical practice taking into account a lack of non invasive test to detect those patients bedside. The aim of our subanalysis was to investigate the usefulness of cardiac I troponin in association to gender to predict those patients with normal coronary arteries admitted with an acute coronary syndrome without ST segment elevation. **Methods:** We included 132 consecutive patients admitted with a diagnosis of acute coronary syndrome without ST segment elevation within 24 hours since the onset of chest pain. Cardiac I troponin was determined in all patients, at least, 8 hours since the onset of symptoms. The cut off value of our test was 0.2 nanograms per mililiter. We perfomed cardiac catheterization in all patients within 48 hours since admission. The population was divided by gender and cardiac I troponin level. A subanalysis was made, looking for the incidence of angiographically normal coronary arteries. **Results:** Out of 132 patients 91 (69%) were male and 41 (31%) were female. The incidence of angiographically normal coronary arteries was 18% (24 patients). We have got two groups of analysis: a) Male: 3 of 29 patients with cardiac I troponin lower than 0.2 nanograms per mililiter and 3 of 62 with cardiac I troponin greater than 0.2 nanograms per mililiter had normal coronary arteries. There were no difference between both groups. *b) Female: 12 of 15 patients with cardiac I troponin lower than 0.2 nanograms per mililiter and 6 of 26 patients with cardiac I troponin greater than 0.2 nanograms per mililiter had normal coronary arteries ($p=0.0004$). Considering the female population the sensitivity of the method was 66%, especificity: 86%, positive predictive value: 80%, negative predictive value: 76%, positive likelihood ratio: 4.7, negative likelihood ratio: 0.3.* **Conclusions:** In our study low concentrations of cardiac I troponin had a high predictive value to detect normal coronary arteries in the female population.

P1010

LONG TERM FOLLOW UP OF BIFURCATION LESIONS ANGIOPLASTY: OUR EXPERIENCE.

D. Grinfeld[1], D Berrocal[2], G Cugat[3], J Gabay[4], C Agatiello[5], P Pollono[6], F Fuertes[7], A Fernandez[8], JL Parmisano[9], L Grinfeld[10]. *[1]HOSPITAL ESPAÑOL DE LA PLATA [2]HOSPITAL ITALIANO DE BUENOS AIRES [3]HOSPITAL ESPAÑOL DE LA PLATA [4]HOSPITAL ITALIANO DE BUENOS AIRES [5]HOSPITAL ITALIANO DE BUENOS AIRES [6]HOSPITAL ESPAÑOL DE LA PLATA [7]HOSPITAL ESPAÑOL DE LA PLATA [8]HOSPITAL ITALIANO DE BUENOS AIRES [9]HOSPITAL ESPAÑOL DE LA PLATA [10]HOSPITAL ITALIANO DE BUENOS AIRES*

Introduction: Coronary bifurcation lesions angioplasty with balloon or bare metal stents (BMS) showed a high percentage of restenosis. With the use of Drug Eluting Stents (DES) the bifurcation treatment improved these results and is nowadays a discussion issue. **Methods:** between September 2005 and September 2007, 185 coronary bifurcation lesions angioplasties were made: Crushing stent 13,84%, T stenting 4,61%, V stenting 6,92%, provisional Stenting 34,61%, 1 stent technique 12,30% and ostial crushing 23.07%. We used 64,61% DES in main branch (MB) and 39,92% in secondary branch (SB). The Left Anterior Descendent (LAD) was the most stented vessel with 65,48%, Circunflex (Cx) 16,92%, Right Coronary Artery (RCA) 6,15%, Left Main 10,76% and venous graft 0.76%; the most treated SB was the diagonal (Dg) with 57,69%. The most treated bifurcation was LAD-Dg. Follow up was within 1 to 24 months (75% with more than 6 months follow up). **Results:** Technical success was achieved in 95 %of the cases. There were 6 deaths (4.61%), 3 of cardiac causes (2.30%), 2 stent thrombosis and 1 heart failure. Restenosis rate of MB (4,61 %), restenosis rate of SB (7.69%). Sub-acute or late Thrombosis of MB (0.76%), sub-acute or late thrombosis of SB (2.30%). New hospital admission for cardiac causes(16,07%) and target vessel revascularization (TVR) 8.8%. The patients in the 2 stents group presented more events than 1 stent patients group (14,11% vs.6.15% respectibly). **Conclusion:** Coronary bifurcation lesions angioplasty demonstrates to be a valid and useful technique, with an acceptable TVR rate, and more events rates when you use 2 stents technique.

P1011

Homeostasis model assessment (HOMA) as surrogate insulinization criteria in patients with type 2 diabetes

F. Finol[1], V. Bermúdez[1], D. Aparicio[1], L. Acosta[1], R. Canelón[1], E. Rojas[1], E. Mengual[1], K. Acosta[1], R. Cano[1], M. Cabrera[1]. *[1]Endocrine-Metabolic Research Center "Dr. Félix Gómez". Medicine School. University of Zulia. Maracaibo, Venezuela.*

Objetives. Type 2 diabetes mellitus is a metabolic disorder that results from defects in both insulin secretion and insulin action. Questions remain about when insulin therapy must be indicated, thus the aim of this study was to evaluate HOMA-ßcell as surrogate criteria for insulin therapy indication in type 2 diabetic patients. **Subjects and Methods.** A prospective study was performed in 189 type 2 diabetic patients with deficient metabolic control assessed by clinical and laboratory parameters. All patients received nutritional intervention and combination therapy with Metformin and Glimepiride. Patients that did not respond were admitted to the next phase, which consisted in Glimepiride+Metformin+Rosiglitazone oral therapy and then, revaluated after 3 months. Comparisons between responders and non-responders in this phase were made in order to achieve differences in metabolic parameters and ßcell function. **Results.** Out of 189 patients studied, 150 (79,36%) were considered as fully responders in the first phase of this study. The remaining 39 patients were admitted in the second trial phase in which 20 patients (51,28%) responded to triple oral therapy, while the other 19 (49,72%) required insulin therapy. Significant differences were found in fasting and post-pandrial glycemia ($p<0,001$; $p<0,004$) between the non-insulin requiring group (200±12,0 mg/dl; 266,05±17,67 mg/dl) and the insulin-requiring group (291,5±17,6 mg/dl; 361,6±26,1 mg/dl). Likewise, significant differences were observed in HOMA-IR and HOMAβ-cell ($p<0,002$; $p<0,04$) between non-insulin requiring patients (7,7±0,8; 24,5±1,3 %) vs. insulin-requiring patients (12,6±1,2; 19,4±2,4 %). Finally, significant differences were observed when comparing body mass index (non-insulin requiring group 29,2±0,4 Kg/mt2 vs. insulin-requiring group 27,1±0,9 Kg/mt2; $p<0,05$). **Conclusions.** HOMA βcell determination in the clinical practice is a useful tool to assess when insulin therapy should be started type 2 diabetic patients. **Keywords:** Diabetes Mellitus, HOMA, Insulinization.

P1012

The ratio of apolipoproteins ApoB/ApoA1 as a predictor of angiographic progression of atherosclerosis in patients with coronary artery disease

AJ Blix[1], KH Loland[1], O Bleie[2], E Strand[2], PM Ueland[1], H Refsum[3], M Ebbing[2], JE Nordrehaug[1,2], OK Nygard[1,2]. *[1]Institute of Medicine, University of Bergen [2]Department of Heart Disease, Haukeland University Hospital [3]Institute of Basic Medical Science, Department of Nutrition, University of Oslo*

Background Studies indicate that the ratio of circulating apolipoproteins ApoB to ApoA1 may correlate with subsequent risk of adverse cardiovascular events in patients with coronary artery disease (CAD). We have tested the effect of the levels of ApoB/ApoA1-ratio on the angiographic progression of CAD in patients undergoing conventional medical therapy including treatment with statins. **Methods** 348 patients (288 male, mean age 60 ± 10.2 years) undergoing percutaneous coronary intervention (PCI) at Haukeland University Hospital in 2001 to 2004 were screened for inclusion in our study. The coronary angiograms were evaluated at baseline, and at either scheduled follow-up (if applicable), or at acute hospitalization before scheduled control, but at least 90 days after baseline. Mean follow-up was 10.1 ± 2.6 months. Analysis was performed using quantitative coronary angiography (QCA) by two independent observers (inter-observer correlation coefficient =0.90), using contour-detecting computer software. Inclusion criteria were coronary artery segments with reference diameter of ≥ 2.0 mm and an

untreated lesion with ≥ 30 % diameter stenosis (DS) at either baseline or follow-up. A total of 183 patients with 309 segments were included. Patients were treated with conventional medical therapy including statins (93%) and platelet inhibitors (98%). The end-point was angiographically assessed change in luminal obstruction, measured as change in minimum lumen diameter (MLD) or diameter stenosis (DS). **Results** At baseline we found mean (SD) serum creatinine 73.7 (12.0) μmol/L, ApoB 0.90 (0.24) g/L, ApoA1 1.29 (0.26) g/L and cholesterol 5.1 (1.7) mmol/L. Median (25th – 75th percentile) serum CRP was 2.0 (1.0 – 5.8) mg/L. Reference Diameter (RD) of study segments were mean (SD) 3.08 (0.75) mm, MLD 1.92 (0.55) mm and DS 37.6 (9.7) %. At follow-up we found a significant decrease in MLD from baseline (-0.17 (0.40) mm, p<0.001) and a more severe DS (42.0 % vs. 37.6 %, p<0.001). A linear regression analysis adjusting for age, sex, BMI, smoking, diabetes, hypertension, use of statins and platelet inhibitors, creatinine and ApoB/ApoA1-ratio showed that only CRP (p=0.039) correlated significantly with the progression of atherosclerosis, measured as change in DS. The ratio of ApoB/ApoA1 was not significantly (p=0,125) associated with CAD progression using the same model. **Conclusion** Our study indicates that the inflammatory marker CRP is a better predictor of CAD progression than ApoB/ApoA1-ratio in patients with established CAD treated with conventional medical therapy including statins.

P1013

Incremental shuttle walk test in the assessment of functional capacity in chronic heart failure

C. Pulz[1], A.N.F. Alves[1], R.V.Z. Diniz[1], A.S. Tebexreni[1], A.C.C. Carvalho[1], A.A.V. De Paola[1], D.R. Almeida[1]. [1]*Federal University of São Paulo*

Background: The incremental shuttle (ISWT) presents with some theoretical advantages to the 6 minute walking test (6MWT) in chronic heart failure, including better standardisation and less dependency on collaboration. This study aimed to access the safety, reproducibility, and accuracy at estimating peak oxygen consumption and prognostic value in shuttle walk test compared to six-minute walk test in patients with symptomatic chronic heart failure. **Methods:** Sixty-three patients with heart failure were prospectively assessed. All patients underwent cardiopulmonary exercise test, two shuttle walk tests, and two six-minute walk tests. Patients were followed-up for a mean period of 14.01 ± 7.8 months. **Results:** Mean age of patients was 51.28 ± 10.26 years old, ejection fraction was 24.05 ± 5.69%, and peak oxygen consumption was 16.79 ± 5.76ml/kg/min. Distances walked in the first and second shuttle tests were 414.44 ± 122.87 and 422.85 ± 119.18m, respectively, which proved their great reproducibility ($p = 0.979$). The test was also safe. Distance walked in the shuttle walk test was shorter compared to that walked in six-minute walk test (ISWT = 422,85 ± 119,18 m vs. 6MWT = 491,95 ± 94,17 m – $p < 0.001$), the perception of effort rate was greater (ISWT = 14,22 ± 2,24 vs. 6MWT = 13,69 ± 2,47 - p = 0.029). There was a strong correlation between the distances walked in both tests (r = 0.88), and between shuttle walk test distance and peak oxygen consumption (r = 0.79). Accuracy to estimate peak oxygen consumption smaller or equal to 14ml/kg/min was similar in both tests (area under ROC curve: ISWT = 0,91 vs. 6MWT = 0,89 - p = N.S.). Distances walked in both tests were not predictors of events (p = N.S.) and peak oxygen consumption was the only predictor of event free survival ($p < 0,05$). **Conclusions:** Shuttle walk test is reproducible, safe, presenting a satisfactory correlation with six-minute walk test, and with peak oxygen consumption; it has been proved sensitive and specific in estimating peak oxygen consumption lower than 14ml/kg/min in chronic heart failure. However, it could not provide information on the prognosis of the patients from this sample.

P1014

Antioxidant therapy improves left ventricular diastolic function and alters remodeling in patients with postinfarction heart failure and impaired renal function.

K.G. Adamyan[1], A.L. Chilingarian[1], A.V. Astvatsatryan[1]. [1]*Institute of cardiology*

Heart failure and chronic renal failure are two serous conditions which often co-exist and extremely worsen prognosis through interrelated pathologic mechanisms, among which oxidative stress plays an important role and lead to sympathetic activation, inflammation and rennin release. We assumed that antioxidants might be beneficial in alteration of cardiorenal disease clinical course. **Methods:** 278 pts (53 women) with postinfarction heart failure (NYHA IV) EF < 35% and chronic renal failure aged 58±13 yrs already on standart heart failure therapy (β-blockers, ACEI/ARB, diuretics) were randomized to two groups: 1) standard therapy (ST), n = 140 and 2) ST and addition of α-tocopherol 150 mg/day and vitamin C 500 mg/day (STA), n = 138. Total ischemic burden (TIB) as total time of ST segment depressions ≥ 1 mm and ≥1 min duration was measured by 24h monitoring. Indexes of ESV, EDV, tissue Doppler patterns (TDP) E/Em of lateral mitral LV annulus, myocardial performance index (MPI) as IVCTm+IVRTm/ETm were measured by two investigators unaware of study aims in 30, 90 and 180 days follow up. **Results:** In 30 day TIB was less in STA (29±7 min vs B 38±11 min; p < 0.02). Other parameters did not differ significantly between groups. In 90 day TIB and E/Em were better in STA (TIB: 23±9 min vs B 35±8 min; p < 0.001; E/Em: 13.7±3.2 vs 15.1±3.6; p < 0.05). In 180 day differences between TIB remain unchanged, but E/Em, MPI, ESVI and EDVI were better in STA (E/Em: 11.8±4.3 vs 14.7±3.4, p < 0.01; MPI: 0.82±0.37 vs 1.26±0.58, p < 0.01; ESVI: 57.4±6.9 ml/m2 vs 65.3±7.2 ml/m2, p < 0.01; EDVI: 94.3±5.4 ml/m2 vs 102.5±8.7ml/m2, p < 0.01). Thus concomitant use of α-tocopherol and vitamin C alters LV remodeling and improves contractility, diastolic function and TIB in patient with co-existing heart and renal failures.

P1015

Low Frequency Power of Heart Rate Variability Associated With Baroreflex Impairment in Myocardial Infarction in Rats

C. Mostarda[1], **E.D. Moreira**[1], B. Rodrigues[1], M. Vane[1], K.T. Rosa[1], E.M. Krieger[1], K. De Angelis[1], M.C. Irigoyen[1]. [1]*Heart Institute (InCor), University of Sao Paulo - Medical School - FMUSP*

Changes in baroreflex sensitivity have been implicated in reduction of heart rate variability and increase of death risk after myocardial infarction The objective of this study were to investigate if the impairment of baroreflex control of circulation induced by MI in sinoaortic denervated (SAD) rats is associated with changes in LF component of HRV and if the abolishment of the baroreflex would be associated with increased mortality after myocardial infarction in rats. The rats were divided in 4 groups: control(C), myocardial infarction(MI), SAD and denervated infarcted (SAD+MI) groups. MI was induced by left coronary artery occlusion. The ventricle function and morphology were analyzed by echocardiography. Baroreflex sensitivity was evaluated by tachycardic and bradycardic responses to AP changes induced by phenyleprine and sodium nitroprusside. Autonomic modulation was analyzed in time (standard deviation) and frequency domains (spectral analysis by autorregressive model). MI (90 days) reduced ejection fraction (42%) but induces left ventricle mass increase only in SAD+MI rats. Tachycardic and bradycardic responses was reduced after MI but additionally impaired in MI denervated rats,(1.5± 0.3 MI, 0.7±0.12 SAD+MI, and 3,65± 0.7 bpm/mmHg in C and 1.7± 0.2 MI, 0.56±0.11 SAD+MI, and 2.23± 0.2 bpm/mmHg in C).HRV was lower in SAD+MI than in MI and SAD groups (9.07±1.6 SAD+MI, 16.85± 2.3 MI, 15.33± 1.6 SAD e 23.65± 0.7 bpm in C). LF power of HRV was reduced in all experimental groups but was additionally reduced in SAD+MI rats, (8.3±2.6 SAD+MI, 15.8±1.2 SAD e 14.2 ±1.2 IM and 22.5±2.1% in C)There was a direct correlation between baroreflex sensitivity and LF power of HRV. LV mass was positively correlated with blood pressure variability (r=0.9). The results of the present study showed that the decrease in baroreflex sensitivity is associated with LF power of HRV reduction and that the degree of impairment of baroreflexes as well as the reduction of LF power of HRV, can determines the mortality post MI during a 90 days period.

P1017

Is carvedilol useful for symptomatic heart failure patients with chronic cardiomyopathy due to a Chaga's disease?

RVZ. Diniz[1–2], RFM Viegas[1–3], JML Amorim[1], AS Tebexreni[1], ACC Carvalho[1], AAV Paola[1], DR Almeida[1]. [1]*FEDERAL UNIVERSITY OF RIO GRANDE DO NORTE (UFRN)* [2]*FEDERAL UNIVERSITY OF SÃO PAULO (UNIFESP)* [3]*UNIVERSITY OF TAUBATÉ (UNITAU)*

Purpose: To evaluate the tolerability, safety, clinical, neuro-hormonal and functional effects of the beta-blocking carvedilol added to the conventional therapeutics of the heart failure due to chronic symptomatic Chagasic cardiomyopathy. **Methods:** It was a randomized, placebo-controlled double-blind study, involving thirty chagasic patients with chronic cardiomyopathy, in functional class II - IV according to New York Heart Association and ejection fraction smaller than 35%. The patients were divided in two groups: GI (15 patients) - randomized for use of the carvedilol in the initial dose of 6,25 mg/day, with up titration of the dose to the target dose of 50 mg/day or even maxim dose tolerated and GII (15 patients)- randomized for use of the placebo. The clinical evaluation was based on the functional class, Minnesota life quality questionnaire and oxygen consumption in the cardiopulmonary test. Assessment of the ventricular function was made through the ejection fraction measured by the radionuclide ventriculography and left ventricular diameters mensured by echocardiography, while the serum norepinephrine and NT-proBNP levels accomplished the sympathetic activation. **Results:** The follow-up period was seven months (28,8 +/- 1,5 weeks in the GI e 29,5 +/- 1,8 weeks in the GII). The carvedilol was tolerated in 13 patients (86,7%). The up titration until the target dose of 50mg/dia was possible in 100% of them in the first five weeks. There was a significant improvement of the functional class in the carvedilol group (p=0,001*), as well in the quality of life appraised for the Minnesota questionnaire (p=0,001*). There were two deaths, being one in each group (p=NS). The adverse effects and clinical events with need of hospitalization were similar in the two groups, except for the largest frequency of the symptom palpitation in the placebo group (p=0,0149*). Left ventricular ejection fraction increased in carvedilol group as compared with placebo group (p=0,009*), despite of no changes in the ventricular diameters was observed. The carvedilol didn't provide decrease in the nerepinephrine (p=0,6760), NT-proBNP levels (p=0,176) and consumption of oxygen (p=0,246) in relation to the placebo group in this specific population. **Conclusions:** Carvedilol was useful as additional therapy for heart failure in chagasic patients. It was well tolerated, safe and it promoted important benefit in the quality of life, functional class and left ventricular ejection fraction in this population.

P1018

Minimally-invasive cardiac surgical ablation (Wolf Mini-Maze) of Atrial Fibrillation in patients without concomitant heart disease. Three years follow up.

L. Antonietti[1], **A. Zapolanski**[2], D. Santos[1], F. Mastrogiacomo[1], A. Villamil[1], N. Gastaldello[1], J. Lax[1], C. Tajer[1]. [1]*Department of Cardiology, Alexander Fleming Institute, Bs. As., Argentina* [2]*Cardiothoracic Surgery, Valley Columbia Heart Center, Ridgewood, NJ, USA*

Objective: To evaluate long term results on atrial fibrillation (AF) recurrences with a minimally invasive strategy for pulmonary veins isolation, the Wolf Mini-Maze technique (WMM) in patients (p) without concomitant heart disease. **Methods:** Between October 2003 and March 2005, WMM surgical pulmonary venous isolation was performed in 18 p (17 men and 1 woman; mean age 53 years; range 29 – 74 years) with drug – refractory AF. Fifteen p had paroxysmal AF and three persistent AF, none of them had valvular or any other heart disease. Time from

first episode of AF was 3 years (1 to 13) (median, range); all p received 2 (1–4) antiarrhythmic drugs without control of recurrences of AF. Eleven patients had previously received 1.5 (1–4) electrical cardioversions, half were on oral anticoagulants and 4 had antecedents of stroke. Left atrial anteroposterior diameter by echo was 39. 6 ± 7.2 mm and LVEF was preserved in all p. Hospital stay was 2.7 days (1 – 7). Procedure: The Wolf mini-Maze is an endoscopic surgical procedure that uses a bipolar radio frequency clamp to electrically isolate pulmonary veins and to ablate left atrial appendage. Patients were controlled by serial Holter recordings at 3, 6, 12 and 36 months. Criteria for success were permanent sinus rhythm in ECGs without episodes of AF in the Holter recording and no symptoms related to AF. **Results:** Successful isolation was performed in 70/72 pulmonary veins (97%) of 18 p. There were no deaths and only few minor complications. After 1 year follow up, 14 p were in sinus rhythm, 2 out of 3 patients with preoperative persistent AF remained with the arrhythmia and 2/15 p with paroxysmal AF had recurrences of AF and evolved with persistent AF. In a follow up period of 38.7 (29–47) months 10 patients remain in sinus rhythm, only one of them had clinically documented episodes of paroxysmal AF, and another one had asymptomatic atrial tachycardia in Holter recording. 2/3 patients with preoperative persistent AF and 4/15 (one without complete isolation of pulmonary veins) with preoperative paroxysmal AF remain with persistent AF. One patient had asymptomatic spontaneous atrial flutter and he refused ablation therapy. **Conclusions:** Isolation of pulmonary veins with minimally invasive surgery with the Wolf Mini-Maze procedure for the treatment of AF was associated with clinical improvement and preservation of sinus rhythm without recurrences of AF in 78% of the p at 1 year follow up and two thirds at three years. This technique can be considered as an alternative treatment for drug-refractory recurrences of AF in patients without concomitant heart disease when quality of life is compromised.

P1020

Heart Rate Variability Analysis in Patients with Congenital Generalized Lipodystrophy (Berardinelli-Seip Syndrome)

C. Faria[1], **D. Sobral-Filho[2]**, J. Brandão-Neto[1], A. Rego[1], S. Egito[1], F. Baracho[1]. *[1]Federal University of Rio Grande do Norte (UFRN), Health Sciences Center (CCS), Graduate Program in Health Sciences (PPGCSA), Natal/RN, Brazil [2]Pernambuco University (UPE), College of Medical Sciences of Pernambuco, Oswaldo Cruz University Hospital, Recife/PE, Brazil*

The aim of this work was to investigate the occurrence of autonomic dysfunction in patients with Congenital Generalized Lipodystrophy (CGL). Although the general manifestations of the patient with CGL have been described in the literature, autonomic dysfunction has never been reported. A cross sectional study was carried out to evaluate the autonomic function of patients with CGL. Two groups, one presenting CGL (CGL group, n = 19) and another composed of healthy subjects (control group, n = 19) were matched by sex and age. All participants (n=38) underwent Ambulatory Electrocardiography (24-hour Holter monitoring) during normal activities with time domain analysis of Heart Rate Variability (HRV) and its indexes. On the CGL group the SDNN index was correlated with or without the presence of diabetes mellitus (DM), hypertension, and ST-segment changes. CGL was associated with decrease in the HRV in time domains ($p<0{,}001$ vs control) independently of other associated clinical co-morbidities. HRV time domain indices were significantly lower in CGL patients. No statistically significant differences were found in the CGL group between individuals with or without DM, hypertension, or ST-segment changes. However, statistically significant alteration in the SDNN ($p<0.05$) was found between the two groups. HRV is decreased in patients with CGL compared with healthy subjects, not correlated with the presence of DM or hypertension. These findings suggest that CGL adversely affects cardiac autonomic control and that reduced HRV may contribute to the increased risk of subsequent cardiovascular events in individuals who exhibit CGL.

P1022

PLASMA LEVELS OF NITRIC OXIDE METABOLITES AND VASCULAR ENDOTHELIAL FUNCTION IN MAJOR DEPRESSION SUBJECTS.

RG Garcia[1,2], JG Zarruk-Serrano[1], W Arenas-Borda[1], C Barrera[3], E Trillos[3], A Pinzon[3], D Quintero[3], C Tomaz[2], P Lopez-Jaramillo[1]. *[1]Research Institute, Fundación Cardiovascular de Colombia, Bucaramanga, Colombia. [2]Laboratory of Neurosciences and Behavior, University of Brasilia, Brasilia DF, Brazil. [3]Mental Health Department, Universidad Industrial de Santander, Bucaramanga, Colombia.*

Background: Findings from several epidemiological studies have revealed that major depression (MD) is associated with an increased risk of developing coronary heart disease and presenting complications and new events in subjects with already-established cardiovascular disease. The pathophysiological mechanisms of this association remain unclear, although recently it has been hypothesized that a decreased production of nitric oxide (NO) could be a potential contributor to vascular dysfunction and increased cardiovascular risk in MD patients. **Objective:** To determine the plasma concentrations of nitrite and nitrate, the stable metabolites of NO, in patients with MD compared to normal volunteers and its relationship with vascular endothelial function assessed by flow mediated vasodilation (FMD). **Methods:**: It was conducted a case-control study in 50 MD patients (DSM-IV criteria) and 50 healthy control subjects between February 2006 and July 2007. None of the patients had history of cardiovascular illness or were receiving anti-depressive medication during the previous year. Fasting blood samples were taken after a 24-hour period of a diet free of nitrates. Nitrites and nitrates were determined by ELISA (Cayman Chemical, Ann Arbor, Michigan). Flow-mediated vasodilation measurements were assessed by the change in the diameter of the brachial artery after reactive hyperemia. Brachial artery diameter and blood flow velocity were imaged with a 7.5-MHz linear-array transducer ultrasound system (Aloka SSD-2200, Tokyo, Japan), located 4–10 cm above the antecubital fossa. All images were recorded on videotape for later review by an independent offline observer who was blinded to the participant's clinical status. All subjects gave written informed consent before entering the study. **Results:** The mean age of the depressed patients was 22.6±4.6 years old, whereas the controls were 23.4±4.8 years old. There were 34 women (68%) in each group. No significant differences were found in terms of body mass index, blood pressure values or any other anthropometric variable between depressive patients and controls. Plasma values of nitrate plus nitrite were significantly lower in subjects with MD compared to healthy controls (17.5±4.9 vs 21.6±7.0 mmol/L, $p=<0.001$). However, there were no significant differences in the FMD values between the groups (13.6±4.3% vs 12.1±5.0%, $p>0.05$). There was no correlation between the nitrate plus nitrite concentrations and the FMD values in the patients included. **Conclusion** The results of the present study show that despite lower plasma concentrations of nitrite and nitrate in MD patients, there are no differences in vascular endothelial function in comparison to healthy controls. Reduced nitrite and nitrate levels can reflect not only NO production in the vascular wall but also in the central nervous system. We consider that our results could be related with a reduced activity of the neuronal nitric oxide synthase (nNOS) in MD subjects without any deleterious effects on vascular function; however, further studies are needed to elucidate this hypothesis. Financial Support: CNPq, COLCIENCIAS (project N. 6566–04–16494)

P1024

Orange Juice Synergistic Effects on GemfibrozilTreatment in High Fat Fed Rabbits

M. Higuch[1], J.J Raposo[1], S.A.P. Palomino[1], M.H.H. Santos[1], R Ikegaml[1], M.M Reis[1], Heart Institue (InCor), University of Sâo Paula Medical School, Sâo Paulo, Barazil

Fibrate administration does not reduce cholesterol serum levels and atheroma plaques in all people. Orange juice seems to reduce cardiovascular events. The present work hypothesized that orange juice may give additive effect on anti-atherosclerotic fibrate treatment. **Material and methods** – Five groups of 9 rabbits were followed during 12 weeks. G1 to G4 received 1% cholesterol enriched diet; water was replaced by orange juice in G2; G3: received 10 mg Gemfibrozil/ day in the last 4 wks; G4 – received 10mg Gemfibrozil/ day + orange juice in the last 4 weeks, and G5 – normal diet. Three cross-sections of ascending aorta of each animal were submitted to histological exam and the segment with the most obstructive lesion was measured regarding: plaque area, fat in the plaque and vessel perimeter. **Results:** Cholesterol-enriched-diet induced development of atheroma plaques in 67% of rabbits of G1, 77% of G2 and 67% of G3 without significant difference in the volume. The addition of orange juice in animals treated with Gemfibrozil exhibited a significant reduction in plaque area and lipid serum levels (Table 1. G4 vs G3; $P<0.05$), atheroma plaques were present in only 11% of the animals. No difference was found regarding vessel remodeling and lipid content in the plaques considering all groups. G5 did not develop plaques. **Conclusion** – Oral administration of Gemfibrozil decreased the size of atheroma plaques only in few animals. However, there was a sinergistic effect of orange juice that reduced atheromas in the majority of the animals, followed by decrease in the lipid serum levels. As rabbits are animals that naturally present hepatic lípase deficiency that favors development of atherosclerosis when associated with fatty diet, further studies are necessary to better understand the real meaning of these findings.

TABLE - MEAN (SD) VALUES OF PLAQUE AREA AND LIPID SERUM LEVELS IN RABBITS FED 12 WEEKS WITH CHOLESTEROL ENRICHED DIET.

	G1	G2	G3	G4	G5
Plaque area (mm2)	1.05 (0.91)	3.57 (2.66)	3.85 (5.27)	0.64 (1.50)	0.24 (0.37)
Cholesterol	328 (307)	747 (144)	655 (274)	148 (201)	28 (3)
HDL	26 (14)	34(35)	62 (36)	17 (6)	10 (4)

P1025

B6 vitamers and long term mortality in patients with stable angina

E. R. Pedersen[1], M. Ebbing[1–4], O. Midttun[2], P.M. Ueland[1], S.E. Vollset[3], O. Bleie[4], H. Schartum-Hansen[4], J.E. Nordrehaug[1–4], O. Nygard[1–4]. *[1]Institute of Medicine, University of Bergen, Norway [2]Bevital A/S, Bergen, Norway [3]Department of Public Health and Primary Health Care, University of Bergen, Norway [4]Department of Heart Disease, Haukeland University Hospital, Bergen, Norway*

Background and aim Previous studies demonstrate an association between vitamin B6 status, inflammation and cardiovascular disease (CVD). Low levels of vitamin B6 are observed in several conditions of chronic inflammation, probably reflecting increased consumption, rather than ineffective intake. Thus, inflammation may be the common link between vitamin B6 and atherosclerosis. Pyridoxal 5-phosphate (PLP), pyridoxal (PL) and the catabolite pyridoxic acid (PA) are the predominating B6 vitamers in the human body. The ratio PA / (PLP+PL), here denoted PAR, represents the fraction of catabolised vitamin B6. We have evaluated PAR as a predictor of mortality in stable angina patients, and studied its association to homocysteine (tHcy) and inflammation markers CRP and neopterin. **Methods** A total of 1039 consecutive patients (28% women) with suspected coronary artery disease (CAD) were examined with diagnostic angiography in the period between January 2000 and June 2001. Their mean (SD) age was 61.5 (10.5) years. A total of 236 (22.7%) had no significant CAD, whereas 357 (34.4%) had triple vessel disease. Blood was sampled before angiography and immediately frozen at -80ºC until analysis. **Results** Median levels (inter-quartile range) of the B6 vitamers were PLP 43.7 (30.5–61.6), PL 8.9 (7.2–12.0) and PA 21.5 (16.0–31.1) nmol/L, PAR 0.43 (0.32–0.59). Strong correlations (Spearman) were observed between PAR and age ($r=0.28$), extent of CAD ($r=0.16$), ejection fraction ($r=-0.12$), tHcy ($r=0.26$), creatinine ($r=0.34$), neopterin ($r=0.34$) and CRP ($r=0.28$) (all $p\leq0.001$). During a mean (SD) follow-up of 5.9 (1.3) years, 118 patients (11.4%) died. Relative risk (RR (95%CI)) of mortality was calculated trough the use of Cox regression analysis for trend over quartiles. In a model adjusting for gender and age, neither PLP, PL nor PA predicted mortality, whereas PAR was a strong determinant (RR 1.44 (1.20–1.73)). After additional adjustment for creatinine, tHcy, hypertension, BMI, diabetes, current smoking, extent of CAD, baseline treatment (medication only, PCI, bypass surgery) and ejection fraction, PAR still predicted mortality (RR 1.28 (1.05–1.55)). However, when adding CRP and neopterin to the multivariate model, the PAR effect was no longer significant (RR 1.21(0.98–1.48)). **Conclusion** The fraction of catabolised B6 vitamin, PAR, correlates with inflammation markers CRP and neopterin, and strongly predicts mortality in stable angina patients.

P1027

Endothelium dysfunction as cardiovascular events risk factor in patients with metabolic syndrome

O. Savenko[1], V. Vikentyev[1]. [1]*Moscow State University of Medicine and Dentistry*

Background: Patients with metabolic syndrome have the range of risk factors for cardiovascular (CV) events. Impaired endothelial function has been reported to be the initial step in atherosclerosis and thus may be seen as either independent CV risk factor or a marker of a present underlying abnormality. **Materials and Methods:** We examined 302 patients with metabolic syndrome (aged 36.4 ± 2.1 years, 55% males). At baseline routine clinical examination, laboratory tests, cardiac ultrasound, ECG- and blood pressure monitoring were performed. As endothelium-dependent vasoreactivity is advocated as a measure of vascular health, using a high-resolution ultrasound, the diameter of the brachial artery at rest and during reactive hyperaemia (flow-mediated dilatation, ? FMD%: endothelial-dependent stimulus to vasodilatation) was measured. Study group comprised 104 participants (mean age: 37.0 ± 3.6 years, 54% males), who had endothelium dysfunction (ED) at the base line, ? FMD 189.2 ± 19.7%. Control group included 198 patients without ED (mean age: 35.8 ± 2.6 years, 56% males), ? FMD 143.5 ± 10.3%. The presence of coronary heart disease (CHD) was excluded using coronary angiography or stress echocardiography. Follow-up assessments were performed at two and seven years (including stress echocardiography). **Results:** at two years follow-up visit 38 patients in study group developed CHD comparing to 26 among the controls; at seven years follow-up visit fatal cardiovascular events were registered in 7.69% of study group and 3.03% of controls; at this time in two groups were registered 52 and 44 new cases of CHD respectively. **Conclusion:** In patients with metabolic syndrome not having CHD endothelium dysfunction can be seen as an independent risk factor, whereas in patients already having CHD it should be regarded as a marker of the pathological process.

P1028

Changes in multifractal parameters of heart rate fluctuations in correlation with circadian differences of heart rate

R. Galaska[1], D. Makowiec[2], A. Dudkowska[2], A. Koprowski[1], M. Fijalkowski[1], A. Rynkiewicz[1]. [1]*1st Department of Cardiology, Medical University of Gdansk, Poland* [2]*Institute of Theoretical Physics and Astrophysics, Gdansk University, Poland* [3]*Institute of Theoretical Physics and Astrophysics, Gdansk University, Poland* [4]*1st Department of Cardiology, Medical University of Gdansk, Poland* [5]*1st Department of Cardiology, Medical University of Gdansk, Poland* [6]*1st Department of Cardiology, Medical University of Gdansk, Poland*

Day-night periodicity of heart rate and heart rate variability (HRV) is related to circadian changes in autonomic nervous system activity. Inverse correlations of the time-domain HRV parameters and the heart rate is a well-known fact reported previously, but no data is available in literature about correlation between heart rate and multifractal properties of heart rate dynamics. The goal of our study was to assess an influence of circadian heart rate changes on HRV parameters calculated by means of multifractal detrended fluctuation analysis (MDFA) and time domain analysis in healthy subjects (N) and in patients with left ventricular systolic dysfunction (LVSD). The 24h ECG Holter monitoring was performed in the group of 39 subjects with normal echocardiogram, without past history of cardiovascular diseases (4 females, 35 males, average age of 54±7 yrs, LVEF 68±4.6%) and in the LVSD group of 90 patients with reduced LVEF (LVEF 30.2±7.0%, 9 females, 81 males, average age 57±10 yrs). Data were recorded and digitized using a Delmar Avionics recorder (Digicorder). Annotation files were manually corrected. Each dataset was divided into 5 hours diurnal and nocturnal subsets. The width of the multifractal spectrum (w) and global Hurst exponent (h) were computed by means of MDFA method. We used dfa.c software to perform calculations. The correlation coefficient (r) between circadian changes (Δ) of heart rate and HRV parameters (time domain and MDFA) was calculated. The results of the analysis are presented in the table.

r(N)	p	r	LVSD	p
ΔhMDFA	0.14	ns 0.2	ns	
ΔwMDFA	-0.1	ns	-0.2	ns
ΔSDNN	0.43	<0.01	0.33	<0.01
ΔRMSSD	0.65	<0.0001	0.26	<0.01

Conclusion: Significant day/night changes of the multifractal parameters of heart rate fluctuations calculated by multifractal detrended fluctuation analysis were independent of circadian changes of the heart rate in healthy subjects and in patients with left ventricular systolic dysfunction.

P1030

Molecular identification of T. cruzi lineages and populations in end-stage Chagas heart disease patients undergoing heart transplantation: predominance of lineage I

J.M. Burgos[1], M. Diez[2], C. Vigliano[2], M. Bisio[1], T. Duffy[1], L. Favaloro[2], R. Favaloro[2], M.J. Levin[1], A.G. Schijman[1]. [1]*Instituto de Investigaciones en Ingeniería Genética y Biología Molecular INGEBI-CONICET* [2]*Instituto de Cardiología y Cirujía Cardiovascular Fundación Dr. R. Favaloro*

The aim of this study was to identify T. cruzi lineages directly from target tissues and bloodstream of end-stage Chagas heart disease (ESChHD) patients who underwent heart trasplantation (HT) and developed Chagas reactivation (RA). Patients' groups ESChHD: seven argentinean patients submitted to HT due to end-stage chronic Chagas heart disease. non-ChHD: three patients seropositive for T. cruzi, who underwent heart transplantation because of concomitant disorders (fibrosis, myocardial infarct and valvular heart diseases). Indeterminate Chagas disease patients (IChD): forty six T. cruzi seropositive individuals without signs and symptoms of cardiac manifestations. Molecular identification of parasite lineages (Lg) Attempts to identify the parasite lineages were carried out directly in peripheral blood and tissue biopsy samples. Lg-PCR-based lineage identification was assessed by: i) Amplification of the intergenic spacer of the spliced-leader genes ii) Hot-start heminested amplification of the dimorphic D7 domain of the 24S-ribosomal RNA genes, and iii) Real Time Hemi-nested PCR targeted to the A10 DNA fragment. Analysis of minicircle signatures The 330-bp minicircle variable region of the kinetoplastid genome was amplified by PCR and the products were digested (RFLP-PCR) with MspI + RsaI restriction enzymes. Results ESChHD: Between 1 and 6 weeks after transplantation, Tc I DNA was detected in peripheral blood samples from 5/7 ESChHD patients, Tc IId DNA in one case and Tc IIe in the remaining one. Lg-PCR positivity occurred earlier in Tc II reactivated patients than in those infected with Tc I, suggesting that Tc II displayed higher parasitemia levels. Consecutive post-transplant blood samples, characterized by Lg-PCR and RFLP-PCR, revealed that the same bloodstream populations persisted during RA, which was also observed in a patient who suffered two RA episodes. Among 5 ESChHD-RA patients, 4 presented lesions (epidermic chagomas and/or endomyocardial biopsy samples) with the same parasite lineages that were detected in bloodstream. In each patient, the minicircle signatures from blood and tissue samples were nearly identical, indicating that the parasites causing the lesions were those found in blood. The fifth patient had skin chagomas and endomyocardial biopsy samples positive for Tc IId/e DNA despite only lineage I was detected in blood. Minicircle signatures of the parasite populations characterized from blood, skin and EMB were all different. Interestingly, T. cruzi II was linked to all our 3 ESChD patients with myocarditis reactivation whereas Tc I was only detected in skin chagomas. Non-ChHD group: Between 4 and 6 weeks after transplantation, T. cruzi IId populations were identified in 2 patients. The other one was PCR negative. IChD group: Out of the 19 characterized patients, 17 were infected by Tc IId parasites and 2 by Tc I. The 27 remaining patients were PCR negative. Finally, our study showed a differential distribution of bloodstream lineages I and II between ESChHD patients and the other patients' groups (Fisher exact test, $p = 0.005$), in contrast of the original assumption of innocuity of T. cruzi I in southern endemic regions of America.

P1032

Percutaneous revascularization in elderly women. Do they have worst prognosis?

M. Monteverde[1], H. Caballero[2], S. Liotta[3], E. Barrera[4], H. Fernandez[5], S. Berenztein[6], M. Vazques Blanco[7], E. Sampo[8], J. Lerman[9].

Introduction: advanced age and female gender have been previously reported as markers of worst evolution following coronary angioplasty. Despite this, there is little evidence comparing evolution between elderly or younger women that are submitted to coronary percutaneous revascularization in the stent era. **Objective:** to compare in-hospital and six month evolution of women older and younger than 75 years that undergo coronary angioplasty in our hospital. **Materials and Methods:** we made a retrospective analysis of data obtained after angioplasty of 204 women between 1997 and 2005. Data was recorded post procedure in-hospital and afterwards by phone and clinical charts. Our primary end point was the combination of death, myocardial Infarction or unstable angina. Secondary end points were each event by itself and revascularization failure. **Results:** elderly women were less likely to smoke (26% vs 4.6% p=0.0001), or have dyslipidemia (55% vs 41% p=0.05). There were no difference in the other cardiovascular risk factors, left ventricular function or multivessel coronary disease. Stent was less used in the older group (66% vs 80% p=0.045). No difference was noted between groups in primary or secondary end points. **Conclusion:** women older than 75 years can undergo coronary angioplasty at a low risk of complications, similar to those of younger women.

RESULTS

	<75 years	> or = 75 years	P
Death, AMI, UA	4.8%	7.3%	0.54
Death	1.2%	3%	0.62
AMI	1.2%	1%	1
UA	2.4%	3.2%	1
Revascularization failure	10%	13%	0.5

P1034

APICAL HYPERTROPHIC CARDIOMYOPATHY AND APICAL CALCIFIED THROMBUS: A NEW COMPLICATION?.

M. C. Saccheri[1–3], T. F. Cianciulli[1–3], **R. J. Mendez**[1], I. V. Konopka[1], H.J. Redruello[1], G. E. Gigena[1], D. F. Serans[1], R. S. Acunzo[2], H. A. Prezioso[1], L. A. Vidal[1]. [1]*Hospital " [2]Dr. Cosme Argerich" [3]. [4]Hospital" [5]J. M. Ramos Mejía" [6]- [7]Researcher of the Secretary of Health, Government of the City of Buenos Aires*

Background: Apical hypertrophy cardiomyopathy (HCM) is a rare condition characterized by asymmetric myocardial hypertrophy of the apex of the let ventricle (LV). These patients often shows a classic electrocardiographic pattern of symmetrically inverted giant T waves (> 10 mm) in the precordial leads and a spade-like deformity of the left ventricle at end diastole on ventriculography. **Objetive:** the aim of this prospective study was to evaluate if two-dimensional echocardiography (TTE) can identify calcified apical thrombus in patients with apical HCM and the complementary value of cinefluoroscopy. **Methods:** adult patients with apical HCM were enrolled in the study. Diagnosis of apical HCM with two-dimensional echocardiography study was made with spade like configuration of the LV cavity, an apical wall

thickness > 15 mm and a ratio 1.3 of maximum left ventricular thickness at the apical level to the basal level. **Results:** we enrolled 40 patients (mean age 57 ± 12 years, range: 37 to 80 years, 15 were male), with apical HCM. We identified the typical electrocardiographic pattern of symmetrically inverted giant T waves in the precordial leads in all patients.Two-dimensional echocardiography showed a mean apical-lateral thickness of 16.2 ± 2.9 mm (range: 13 to 26 mm) and a mean apical-septal thickness of 17.5 ± 3 mm (range, 13 to 29 mm). The mean apical-septal/posterior wall thickness ratio was 1.85 ± 0.81. In 5 patients (12,5%) TTE showed hypertrophy of the apical LV myocardium and an apical calcified thrombus. Cineflurosocopy confirmed this finding. **Conclusion:** calcified thrombus in the apical cavity of the LV in the setting of an apical HCM could be a frequent complication of this type of HCM, in which should decide if anticoagulation is necessary. Cinefluoroscopy can help detecting patients with calcified apical thrombus, when two-dimensional can not diagnose it due to inconsistent imaging of the apical segment. To the best of our knowledge, this finding had not been previously described in the literature.

P1035

Role of theophylline (adenosine antagonist) or N-acetylcysteine alone and in combination for prevention of contrast induced nephropathy

S. Kumar , N Sinha, K Chawla, A Kapoor, S Tewari, N Prasad, S Gambhir, S Barai. [1]*Sanjay Gandhi PostGraduate Institute of Medical Sciences, Lucknow, INDIA*

Background: We prospectively compared the protective effects of Acetylcysteine, Theophylline, and combination of both agents in patients who are undergoing coronary angiography with at least one risk factor for contrast induced nephropathy (CIN). **Methods:**A total of 91 patients (mean age, 55.9 +7.7 years), 14 females, and 77 males were randomized to receive Acetylcysteine (Group 1) 600mg twice a day orally (two doses each before and after the procedure), Theophylline (Group 2) 200mg twice a day orally (two doses before and two doses after the procedure), or a combination ((Group 3). All patients also received IV saline 0.9% 1 ml/kg/h, from12 hours before to 12 hours after angiography. The primary endpoint was the incidence of CIN as defined by increase in serum creatinine by > 25% from baseline or fall of Glomerular filtration rate (GFR) or Creatinine clearance by > 25% from baseline. **Results:**Groups 1, 2, and 3 were comparable with all the risk factors (diabetes, age, contrast volume used and baseline serum creatinine, GFR and creatinine clearance. Post angiography, patients of Group-1, 2 and 3 had no significant change in serum creatinine and creatinine clearance. But a significant increase of GFR (69.9±22.6 vs. 75.6±21.5 ml/min; p=0.001) in group-1 and significant fall in GFR (66.4±23.9 vs. 57.7±19.5 ml/min; p=0.02) in Group-2 were noted, while no significant change of GFR (71.2±26.4 vs. 72.1±25.5 ml/min; p=0.64) was noted in group-3. There was significant fall of serum creatinine (1.33±0.78 mg/dl vs. 1.10±0.33 mg/dl; p=0.05), and a significant increase of creatinine clearance (69.0±23.7 ml/min vs. 73.8±19.7 ml/min; p=0.04) among patients of group-1.The highest incidence of CIN was detected when it was defined by criteria of fall of GFR by > 25% of basal level, and it was 36.36% in group-2, 6.25% in group-3, while no patient of Group-1 developed CIN.(p<0.001). It was also found that change in GFR was the most sensitive parameter to detect CIN compared to rise of serum creatinine or fall in creatinine clearance. **Conclusions:** For prophylaxis in patients at high risk for contrast induced nephropathy, Acetylcysteine appears in doses administered superior to Theophylline or a combination of both.

P1036

Does the use of 600 mg Clopidogrel loading dose before percutaneous coronary intervention in acute coronary syndromes increase the risk of bleeding after the procedure?

R. Gusmao De Oliveira[1], A. Figueiredo, J. Petriz, A. Marques, M. Cardoso, A. Glavan, A. Brasileiro, B. Tura, P. Resende. [1]*BARRA D'OR HOSPITAL*

Considerations: Clopidogrel (CP) is being well accepted in the treatment of patients with acute coronary syndromes (ACS). Despite the widespread use of CP, the loading dose in percutaneous coronary intervention (PCI) remains unclear. **The project:** Apply, with safety, a 600mg (CP600) or 300mg loading dose of clopidogrel in patients with indication of urgent or emergent PCI, adding anticoagulation with low molecular weight heparin (LMWH) or unfractioned heparin (UFH) and glycoprotein IIb IIIa inhibitor (GPI) as well as aspirin. **Users and methods:** 71 patients under PCI from January 2005 to December 2006, who were in intensive care unit with diagnosis of unstable angina (UA), non-ST elevation myocardial infarction (NSTEMI) or ST elevation myocardial infarction (STMI) who have taken CP600 or 300 mg, antithrombotic therapy, aspirin and / or glycoprotein IIb IIIa inhibitor (GPI) before PCI. It was observed small and high amount of bleeding according to TIMI patterns. According to statistics analysis it was used square, t-student and Fisher exact, with limits of 95%. **Results:** 55 patients were male. Age around 59,9 +- 12,4 years, with no difference among those users or non users of CP600 (p=NS); 17(23,9%) had UA, 26 (36,6%) had NSTEMI, 28 (39,4%) STEMI (p=NS); 32 (45,1%) used GPI, 46 (64,8%) LMWH and 30 (42,3%) UFH (p=NS). CP600 was used by 34 patients (47,9%). Only one patient (1,4%) had high amount of bleeding and 10 (14,1%) had small bleeding; it was not related any observations with those who took CP600 (p=NS) **Conclusion:** The sample studied showed that the use of a loading dose of 600 mg clopidogrel during urgency or emergency PCI, in patients using antithrombotic therapy, did not increase the risk of bleeding.

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Bleeding complications in elderly patients with non-ST elevation acute coronary syndromes: predictors and outcomes

C. Lourenço[1], R. Teixeira[2], A. Natália[3], S. Monteiro[4], S. Costa[5], F. Goncalves[6], P. Monteiro[7], L. Goncalves[8], M. Freitas[9], L.A. Providencia[10]. [1]*Coimbra University Hospital* [2]*Coimbra University Hospital* [3]*Coimbra University Hospital* [4]*Coimbra University Hospital* [5]*Coimbra University Hospital* [6]*Coimbra University Hospital* [7]*Coimbra University Hospital* [8]*Coimbra University Hospital* [9]*Coimbra University Hospital* [10]*Coimbra University Hospital*

Background: Hemorrhagic complications of acute coronary syndromes (ACS) and percutaneous coronary intervention (PCI), more frequent in elderly patients, are associated with increased morbidity and mortality. Can we predict them and change their poor outcome? Aim: To compare the impact of major versus minor bleeding on in-hospital outcome of elderly ACS patients. **Methods:** Retrospective analysis of 332 patients, aged 75 or older, hospitalized for ACS who had bleeding complications. Patients were divided into two groups according to the degree of hemoglobin drop (difference between maximum and minimum hemoglobin levels): Group A – hemoglobin drop < 3 g/dL (n= 285) and group B - hemoglobin drop > 3 g/dL (n= 47). **Results:** Group B presented more often with ST-elevation myocardial infarction (47.7 vs 18.0 %, p<0.001), had higher myocardial necrosis markers, C-reactive protein (8±8 vs 12±10 mg/dL, p=0.007), fasting glucose and creatinine (2±1.2 vs 1.8 ±1.3, mg/dL, p=0.03), lower platelets, required more often IIb-IIIa inhibitors (52.2 vs 29.8 %, p=0.007) and had longer hospital stays (6.4±4.0 vs 4.8±2.7 days). There were no significant differences between the two groups regarding gender, presence of cardiovascular risk factors or previously known coronary artery disease, coronary anatomy, use of PCI, TIMI score, previous hospitalization or medication, ejection fraction, Killip class, hospital medication (other than IIb-IIIa inhibitors), in-hospital morbidity, mortality and re-hospitalization rate. Multivariate analysis showed that major bleeding was the only independent predictor of longer in-hospital stay (>5 days) (p=0.012; OR 2.385). **Conclusions:** Major bleeding occurred more often in older patients with more severe ACS, lower platelets and renal failure, and was independently associated with longer in-hospital stay. These results reinforce the need for optimal drug dosing in elder ACS patients, based on renal function and risk/benefit evaluation.

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ACUTE CARDIAC INSUFFICIENCY SECONDARY TO VIRAL MYOCARDITIS: A CASE STUDY

CL Weksler[1], R Alves[2], FT Oliveira[3], ALC Marins[4], VZ Mattos[5], VR Souza[6]. [1]*HOSPITAL PRÓ-CARDÍACO* [2]*HOSPITAL PRÓ-CARDÍACO* [3]*HOSPITAL PRÓ-CARDÍACO* [4]*HOSPITAL PRÓ-CARDÍACO* [5]*HOSPITAL PRÓ-CARDÍACO* [6]*HOSPITAL PRÓ-CARDÍACO*

Introduction: We report a case of acute cardiac insufficiency secondary to myocarditis, as determined by clinical approaches and laboratory and image exams, and treated with specific nursing care. Myocarditis is characterized by the presence of an inflammatory reaction, frequently due to aggression, and a significant cardiac dysfunction. The rationale for the present study is the need to improve, expand, and update the knowledge on the topic, and to optimize the proposed treatment basead in scientific evidence, enhancing in turn hospital safety. **Objectives:** Describe the physiopathology of the disease, correlate signs and symptoms with the specifictreatment, and review updated information on the topic, and describe determinant nursing action to the specific patients. **Material and methods:** Study performed in one patoient at Coronary unit, under a trainee program for nursing professionals. the patient's file, specific literature, and recent papers on the topic were consulted. All procedures were made with the authorization of the patient, following bBrazilian regulation (res. 196/96). **Results:** the nursing care followed the diagnosis and taxonimy II of NANDA (North American Nursing Diagnosis Association), and had a important contribution in the treatment, consisting: risk in depressed cardiac debit, disequilibrium of corporal liquid volumes, risk in tissue lesion, and risk for the integrity of the skin due to intravenous therapy. We emphasize that the rigorous monitoring of physiological alterations is important both in symptomatic and asymptomatic patients, leading to early detection of complications. **Coclusion:** The nursing professional has a broad area of care in response to clients with acute cardiac insuffiency secondary to myocarditis, from the care of the acute stage to patient education after discharge, which should be individualized and based on theoretical and pactical knowledge.

P1041

Maintenance of Venous Access as Indicator of Quality of Care for Nursing

A.L..C. Marins[1], R. Mourilhe Rocha[1], R. Esporcatte[1]. [1]*CORONARY CARE UNIT - PROCARDÍACO HOSPITAL*

Introduction: The provision of health care is one of the most complex and difficult tasks of the modern economy, in an era of cost effectiveness and quality, the search for technical excellence and management becomes a continuing need. There is unanimity among managers that they must choose systems evaluation and appropriate indicators to support the administration of services and provide decision-making with the lowest possible degree of uncertainty. In this study we will focus indicator of the process to track and compare the evolution of care assistance. Objective: To discuss the major complications related to the reasons for withdrawal of peripheral venous access as an indicator of quality. **Patients and Methods:** Data were collected prospectively from 759 patients undergoing peripheral venipuncture, from January 2005 to January 2006, which hits remained for a total of 1,849 days. We analyzed the water balance sheet to record the events. All patients were followed up until the withdrawal of the venous system. We used the Mann-Whitney, Chi-square and T tests. **Results:** The number of peripheral puncture made, the reasons for venous access withdrawal and the length of stay of the devices are described in table 1. Analyzing the length of stay (LOS) of the peripheral venous system, we found that 22.7% remained for a period of time less than

24 hours, 36.5% from 24 to 48 hours, 19% from 48 to 72 hours, 14.4 % from 72 to 96 hours and only 7.4% more than 96 hours. The reasons for termination of intravenous therapy were: no more indication of intravenous therapy (58.5%), infiltration (20.4%), obstruction (5.3%), phlebitis (5.3%), pirogenic reaction (0.5 %), need for deep venous access (0.9%), withdrawal accidentally (3.0%) and excessiveLOS of the devices (6.1%). **Conclusions:** Reduce the rates of complications related to the reasons for withdrawal of peripheral venous access requires achieving a balance between the patient and the resources available. Measures to prevent relatively simple and reliable records of the procedures certainly contributed to a reliable analysis. The data found in this study deserve to be disclosed to the health professionals in order to improve programs in education and service.

TABLE 1

Reason for withdrawn	No. of punctures	LOS (days)	LOS (media)
No indication for IV therapy	444	1043	2.3
Need for deep venous access	7	13	1.8
Excessive LOS	46	185	4.0
Loose the access	23	51	2.2
Infiltration	155	260	2.3
Obstruction	40	88	2.2
Phlebites	40	100	2.5
Pirogenic	4	9	2.2
Total	759	1849	2.4

P1042

THE IMPACT OF CORONARY ARTERY BYPASS GRAFT SURGERY IN THE ABANDON OF SMOKING

R. Pietrobon[1], J. Barbisan[1], L. Smidt[1]. [1]*Instituto de Cardiologia do RS / FUC*

Introduction – Tobacco use is an important modifiable risk factor for cardiovascular disease. There is a shortage of cientific evidence showing that patients submitted to cardiac surgery stop smoking. The magnitude of this effect and the link between stopping smoking and the level of nicotine dependence is not known. **Objective** – Verify the magnitude of smoking cessation in patients submitted to myocardial revascularization surgery and the relationship of this cessation with the nicotine dependence level. **Method** – In a cohort study, 203 patients, age above 18, submitted to MRS in the period from January 2006 to March 2007, were consecutively selected and interviewed in relation to the use of cigarettes in pre and postoperative period. The smokers were arranged in levels of nicotine dependence with the use of Fagerström Nicotine Dependence Test. They were followed as outpatients during 60 and 90 day-periods for the occurrence of complications and the use of cigarettes. **Results** – The average age of the group was 62± 10 years, 134 (66%) being males. Among the 203 patients, 75 (36,9%) presented complications in the immediate postoperative period. In 63 (80,8%) smokers and 15 (19,2) nonsmokers (OR=2,48;CI 95%=1,14 to 5,40) had postoperative complications. For every extra year of life, the chance of having complications increases by 3% (OR=1,03;CI 95%=1,00 to1,07;) Before surgery, 146 (71,9%) were smokers.The classification of Fagerström categorized 57(39%) as high level and 14 (9,6%) as very high level. There was a significant cessation of smoking in the postoperative period. One hundred and thirty six (93,15%) and 137(93,84%) of the patients stopped smoking during the sixty and ninety days after surgery. **Conclusion**– Patients submitted to myocardial revascularization surgery (MRS) present reduction and cessation of tobacco use in the immediate postoperative period.

P1043

MALE GENDER AND METABOLIC SYNDROME IN YOUNG INDIVIDUALS FOLLOWED-UP FOR A 17 YEARS-PERIOD. THE RIO DE JANEIRO STUDY

AA Brandao[1], MEC Magalhaes[1], EG Campana[1], FL Fonseca[1], O Pizzi[1], EV Freitas[1], R Pozzan[1], AP Brandao[1]. [1]*STATE UNIVERSITY OF RIO DE JANEIRO*

Background: Male gender has been associated to worse cardiovascular risk profile in middle-aged adults. This observations is not fully elucidated in young populations. Purpose: To evaluate the blood pressure, the anthropometric and metabolic profile and pulse wave velocity (PWV) of young individuals, stratified by gender in a 17-year follow-up. **Methods:** In a 205.40"b10.22-month follow-up, 91 individuals, belonging to a cohort study of Rio de Janeiro underwent three evaluations: A1: at ages 12.81"b1.52 (10–16 years), A2: at ages 21.93"b1.86 (18–29 years), and A3: at ages 30.05"b1.92 (26–34 years). Two groups were formed: Group 1 (n=47): males; Group 2 (n=44): females. In all occasions BP, weight, height, and body mass index (BMI) were obtained. In A2 and A3 fasting glucose (G), total cholesterol, LDL-C, HDL-C and triglycerides (Trig) were measured. In A3, abdominal circumference (AC), body fat mass (BFM), skin fold thicknesses (SFT), pulse wave velocity (PWV) by Complior method and the prevalence of metabolic syndrome (MS) (ATP III criteria) were also obtained. Hypertension was considered when BP ≥percentile 95 for age and sex (A1) or ≥140/90mmHg (A2 and A3). **Results:** 1) Groups were not different by age; 2) Group 1 showed higher SBP and DBP than group 2 in A2 and higher SBP in A3 ($p<0.01$); 3) BMI and its variation during the follow-up were not different between the groups in A1, A2 e A3, but Group 1 presented higher AC ($p<0.02$) in A2 and A3 and higher BFM and bicipital and tricipital SF in A3 ($p<0.01$); 4) HDL-c was lower ($p<0,001$) in Group 1 in A2 and A3; G and Trig were higher in Group 1 in A2 ($p<0.03$); 5) Group 1 showed higher positive variation of SBP and DBP after a 17 year-follow-up ($p<0,01$); 6) Group 1 had higher PWV than group 2 in A3 ($p<0.0001$) 7) In A3: Group 1 had higher prevalence of hypertension (38.3% in Group 1 X 13.6% in Group 2 ($p<0.01$), abnormal HDL-c and AC ($p<0.0001$) and alcool consumption ($p<0,01$); -MS was detected in 23.1% of the population and group 1 had higher prevalence than group 2 (40.4% X 4.5% -$p<0.03$); 8) In logistic regression analysis, male gender and positive variation of BMI were positively associated to MS occurrence (RR=22.12 ($p<0.001$) and RR=1.35 ($p<0.01$), respectively). **Conclusions:** Male gender was associated to higher BP, abdominal circumference, body fat mass, pulse wave velocity and higher prevalence of metabolic syndrome in a young population followed-up for 17years.

P1045

Anti-streptoccocal vaccination induces lowering of anti-oxLDL antiboties in responding diabetic patients.

E. Rzewuska[1], M. Karynski[2], K. Jankowski[1], M. Puchta[1], A. Lipinska[1], P. Grzesiowski[2], D. Liszewska-Pfejfer[1], P. Pruszczyk[1]. [1]*Department of Internal Medicine and Cardiology, Warsaw Medical University, Poland* [2]*Department of Infectious Diseases Prevention and Nosocomial Infection, National Medicines Institute, Warsaw, Poland*

It has been postulated that infection prophylaxis (both viral and bacterial) has beneficial effects in patients at risk for cardiovascular events. It has been reported that pneumococcal infection leads to raise in anti-oxLDL IgM levels in patients' serum. However there is no report on long term effect assessed by anti-oxLDL IgG response. The aim of the study was to analyze the effect of anti-pnemococcal vaccination on autoimmune anti-oxLDL IgG response in a group of patients with diabetes mellitus. **Material and method:** 69 patients with DM have been vaccinated with single dose Pneumovax (Merck Sharpe & Dohme, USA). Antibodies levels against glycopeptides of Streptococcus pneumoniae and the levels of antibodies against oxLDL have been measured before the vaccination, one month and a year post immunization. **Results:** Based on response to the vaccination, patients were divided into high responders (raise in antibody to Streptococcus pneumoniae titer by ^{3} 2.5 times) (n=12, mean age 66.1±13.8yrs), the group with low response (low responders <2.5x) (n=34, mean age 59.0±13.1yrs) and non-responders (n=23, mean age 63.0 ±13.1 yrs). The groups did not differ significantly in age, sex distribution, co-morbidities, medications. The analysis of the anti-oxLDL antibodies one month after vaccination in the high-responders group revealed lowering of the autoantibodies titers, and this was even more evident after a year. This phenomenon was not observed in the low-responders and non-responders group. Statistical analysis (GLMM model), taking into consideration confounding variates (age, sex, mode of treatment, co-morbidities), proved this to be significant ($p<0.01$). **Conclusion:** The single-dose anti-pneumococcal vaccination exerts anti-oxLDL autoantibody lowering effect, however this refers to responding minority of the diabetic patients.

ANTI-OXLDL IGG TITERS (MU/ML) - MEDIAN AND RANGES

	before vaccination	after 1 month	after 1 year
High -responders	22325 (761.25–108985)	15650 (625.60–98900)	6030.28 (655–105650)
Low - responders	9825 (545.0–98150)	8758.60 (635–101750)	8976.0 (626.5–97658)
Non-responders	11150 (2289–103850)	12950 (2124.5–87928)	10810 (2640–84050)

P1047

Is ankle-brachial index associated with ischemia on myocardial perfusion scintigraphy in elderly patients?

L. Machado[1], P Smanio[2], C Ferreira[3], J Borges[4], M Castillo[5], A Thom[6], L Piegas[7]. [1]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [2]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [3]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [4]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [5]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [6]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [7]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA*

Background: The peripheral artery disease (PAD) has high prevalence in elderly and is considered an important marker of widespread atherosclerosis. It is also associated with coronary artery disease (CAD). Abnormal ankle-brachial index (ABI) is a marker of PAD. If patients (p) with abnormal ABI has perfusion abnormalities is not well established. Objectives: To verify the association between abnormal ABI and ischemia in patients with more than 65 years and also verify the association between abnormal ABI with CAD in the angiography (cine) trying to define clinical predictors which contribute to this associations. **Methods:** In two hundred and two p older than 65 years who were submitted to myocardial perfusion scintigraphy (MPS) were calculated the ABI. It was considered abnormal if £ 0.9. The MPS was considered suggestive of ischemia on the presence of reversible perfusion defects after stress phase in relation to basal. All MPS were performed with 99mTc-MIBI by gated-SPECT technique and standard 2 days protocol. To all p were asked presence of known CAD, acute myocardial infarction (AMI), revascularization procedures (RV) and also previous cine. The statistical analysis was performed with chi-square; independent T and Fisher's exact tests and considered significant is p value £0,05. **Results:** From the evaluated group of p with abnormal ABI it was observed a considerable higher prevalence of ischemia on MPS (72%) in relation to the group with normal ABI ($p = 0.019$). There is no cardiac risk factor contributing to that association as on the statistical analysis of the risk factors there none with significant p value. There is a higher prevalence of previous CAD (75%) in the group of p with abnormal index ($p=0.007$) and also more p with multivessel disease in the cine ($p=0.045$). **Conclusion:** The obtained results may suggest that ankle-brachial index is a good way to identify p with higher risk of ischemia on MPS. It also suggests that ABI is associated with significant CAD in the angiography. There were no clinical predictors that contribute to these associations.

P1048

Prevalence of 'responders' and 'non-responders' to antiplatelet drugs

M. G Gonzalez Achaval[1], S. Ghione[1], M. Hadad[1], S. Gomez[1], L. A. Del Val[1], C. Balestrini[2]. [1]*Servicio de Hemostasia y Trombosis. Instituto Modelo de Cardiología Privado SRL. Córdoba. Argentina* [2]*Servicio de Cardiologia. Instituto Modelo de Cardiología Privado SRL*

Introduction Platelet activation contributes to the development of coronary artery disease (CAD) and aspirin is a cornerstone of antithrombotic treatment. However, aspirin has been shown to have variable antiplatelet activity in some patients. Evidence is increasing that traditional platelet aggregometry and other more recently developed platelet function assays could be useful to detect 'responders' and 'non-responders' to antiplatelet drugs and optimize

this therapy. Based on published reports, the prevalence of aspirin resistance might range from as 5% to maybe 40 % depending on the population studied and platelet function assay used. **Objectives and Methods:** This study was designed to evaluate Prevalence of 'responders' and 'non-responders' to aspirin in out -patients with CAD. The antiplatelet effect was evaluated in 93 patients with CAD using light transmission aggregometry, standard test for studies on platelet function and its pharmacologic inhibition. All patients received aspirin for at least two weeks. Platelet rich plasma was prepareted and response to ADP 5uM/L was recorded by use of routine aggregometer. The results were stratified in quartiles, and we considered as 'non-responders'those patients in the quartile with the highest platelet response (aggregation >60%). Patients with different aspirin dose was included. Patient dual antithrombotic treatment – aspirin plus clopidogrel – was excluded. Possible difference by sex was evaluated by chi test. **Results:** patient basaline characteritics : n=93, female 17 (Age 55 years, range 31 to 76 years), and male 76,(age 59 years, range 36 to 83 years). Out of 93 patient studied, 24 were'non-responders' (26%). Patients who were 'non-responders'were more likely to be women (29 % women, 25 % men) however this diference was not significant (p 0.087). **Conclusions:** Our results showed a 26 % prevalence of non-responders to aspirin, this prevalence was highest in female patients but the difference was not significant.

P1049

Homocysteine and markers of immune activation as predictors of mortality in stable angina patients

E. R. Pedersen[1], P.M. Ueland[1], S.E. Vollset[2], O. Midttun[3], G. Svingen[4], H. Schartum-Hansen[4], O. Bleie[4], M. Ebbing[1–4], J.E. Nordrehaug[1–4], O. Nygard[1–4]. *[1]Institute of Medicine, University of Bergen, Norway [2]Department of Public Health and Primary Health Care, University of Bergen, Norway [3]Bevital A/S, Bergen, Norway [4]Department of Heart Disease, Haukeland University Hospital, Bergen, Norway*

Background and aim Inflammation is centrally involved in the pathogenesis of cardiovascular disease (CVD). CD4+ T lymphocytes within the atherosclerotic plaques mediate cellular (Th1) immune responses in which the macrophage activating cytokine interferon-gamma plays a crucial role. Interferon-gamma stimulates the production of neopterin and conversion of amino acid tryptophan to kynurenine in macrophages. Recent studies also suggest that macrophages increase their production of homocysteine, when stimulated. We have assessed neopterin, kynurenine, the kynurenine / tryptophan ratio (KTR), total homocysteine (tHcy) and CRP as predictors of mortality in patients with stable angina. **Methods** A total of 1039 consecutive patients with suspected coronary artery disease (CAD) were examined with coronary angiography between January 2000 and June 2001. Mean (SD) age at inclusion was 61.5 (10.5) years, and 291 (28.0%) of the patients were women. A total of 236 patients (22.7%) had no significant CAD, whereas 357 (34.4%) had triple vessel disease. Samples were taken before angiography and immediately frozen at -80º C until analysis. **Results** The following median (25th-75th percentile) levels were observed: neopterin 7.36 (5.92–9.53) nM, kynurenine 1.65 (1.33–2.04) μM, tryptophan 73.4 (64.3–82.4) μM, KTR 22.4 (18.1–24.1). tHcy 10.3 (8.59–12.5) μM, and CRP 1.95 (0.98–3.74) mg/L. Significant bivariate correlations (Spearman) were found for tHcy with kynurenine (r=0.24), KTR (r=0.30), neopterin (r=0.35) and CRP (r=0.17) (all p <0.001). During a follow-up of mean (SD) 5.9 (1.3) years, 118 patients (11.4%) died. Results of Cox regression are presented as relative risk RR (95% CI) per quartile increment in the specified variable. In univariate analyses, tHcy (RR 1.78 (1.48–2.14)), neopterin (RR 1.49 (1.26–1.77)), KTR (RR 1.40 (1.18–1.66)), kynurenine (RR 1.31(1.11–1.55)) and CRP (RR 1.35 (1.14–1.59)), but not tryptophan, predicted mortality. After adjustment for age and gender, the effects of kynurenine and KTR were no longer significant ($p \geq 0.13$). The risk estimates for tHcy (RR 1.50 (1.24–1.82)), CRP (RR 1.32 (1.12–1.56)) and neopterin (RR 1.27 (1.06–1.52)) were moderately attenuated. In multivariate analysis, we additionally adjusted for daily smoking, extent of CAD, ejection fraction and levels of creatinine, neopterin, tHcy and CRP. In this model, neopterin did no longer predict mortality (p=0.36). Only the risk estimates for tHcy (RR 1.34 (1.09–1.64)) and CRP (RR 1.22 (1.03–1.45)) remained significant. **Conclusion** Among patients with stable angina, tHcy is a stronger predictor of mortality than the immune / inflammation markers KTR, neopterin and CRP.

P1050

PREVALENCE AND CHARACTERISTICS OF HIGH BLOOD PRESSURE AND ITS ASSOCIATION TO CARDIOVASCULAR RISK FACTORS IN SOUTH SERBIA

I. Burazor[1], M Burazor[1], N Vukadinovic[2], B Lovic[1], Z Burazor[1], G Cvetanovic[3], N Burazor[3]. *[1]Clinical Center, Nis, Serbia [2]General Hospital,Krusevac, Serbia [3]General Hospital,Krusevac, Serbi [4]Medical School, Nis, Serbia*

Purpose: To determine the prevalence of high blood pressure and associated cardiovascular risk factors in a population of South Serbia. **Methods:** A cross-sectional study was conducted in 137 442 persons who composed 6 different groups (criteria were the years of age). After randomization the total of 1051 persons were studied. Anthropometry, blood pressure, lipids and fasting glucose were measured. Subjects were categorized as hypertensives (HT) (systolic blood pressure (SBP) and/or diastolic (DBP) $\geq$ 95th percentile), pre-hypertensives (pre-HT) (SBP and/or DBP $\geq$ 90th but $<$ 95th percentile), and normotensives (NT) (SBP and DBP $<$ 90th percentile). Subjects were categorized according to BMI and waist also. ECG and both retinas fundoscopy were performed. **Results:** We studied 551 males and 501 females. The prevalence of hypertension and pre-hypertension adjusted for age, sex and height was 36%. Regarding to ECG changes 44% had left ventricle hypertrophy, 18% arrhythmias, and 18% ischemic heart disease (previous MI or angina). High cholesterol levels were noted in 85% and high tryglicerides in 29%. The total of 16% suffered diabetes. The prevalence of obesity was 40%. We calculated the relative risk for coronary artery disease development. The relative risk (determined by European SCORE risk charts) in 10 years period was as follows: 45.7% had medium risk, 13.8 % moderate and 15% high. **Conclusions:** The high prevalence of hypertension found in this sample, and its association with BMI and waist circumference indicated that intensive interventions are needed to reduce the cardiovascular risk.

P1051

Tissue synchronization imaging in the localization of the accessory atrioventricular pathways

M. Lanocha[1], A. Szyszka[1], K. Blaszyk[1], R. Ochotny[1], S. Grajek[1].

The exact localization of the accessory atrioventricular pathway with surface 12-lead ECG is not always possible. Tissue synchronization imaging (TSI) is a new ultrasound technique that allows a qualitalive and quantitative detection of regional tissue motion delay. The aim of the study was the evaluation of the usefulness of TSI in the localization of the accessory atrioventricular pathways in patients with WPW syndrome and the evaluation of the efficiency of radiofrequencies ablation. **Methods:** 42 patients (aged 18–56years) with ventricular preexcitation diagnosed by 12-lead surface ECG were enrolled into the study. Finally, 36 patients with good-quality echo images were analysed. Control group consisted of 20 healthy subjects. All patients underwent TTE echocardiographic examination (grey scale M-mode and 2-D followed by color tissue imaging) before electrophysiologic studies (EPS) and the day after. The EPS results were taken as the gold standard in the localization of the accessory atrioventricular pathways. With TSI the colour maps visualised the region and the amount of the regional tissue motion acceleration allowing to readily identify the localization of accessory atrioventricular pathway. **Results:** With respect to results of the EPS, accessory atrioventricular pathway was detected by TSI in 26patients (92,6%) with left pathways and 5patients (62,5%) with right pathways. After succesful radiofrequencies ablation the abnormal ventricular depolarization disappeared immediately in all patients. **Conclusions:** Tissue synchronization imaging is a clinically useful in the localization of the accessory atrioventricular pathways in WPW syndrome especially in left-sided accessory pathways and in the evaluation of the efficiency of radiofrequencies ablation.

P1052

Role Of Pentoxifylline (Non-Specific Anti-Cytokine Agent) On Left Ventricular Ejection Fraction And Functional Class In Patients With Left Ventricular Systolic Dysfunction

S. Kumar , N Sinha, A Kapoor, S Tewari, GS Gill, V Agarwal, RN Mishra. *[1]Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, INDIA*

Background: Chronic heart failure (CHF) is characterized by a disproportionate rise in inflammatory cytokines (TNF-α and others). Pentoxifylline, a non-specific immunomodulator (cytokine inhibitor) has been shown to reduce the synthesis of TNF-α by blocking transcriptional activation. Aim of the present study was to study effect of Pentoxifylline in patients with CHF at 3 and 6 months follow up. **Methods:**Fifty patients between age 18 and 70 years; stable NYHA functional class II or III heart failure secondary to any etiology with left ventricular ejection fraction (EF) $\leq$40% by echocardiography, in sinus rhythm, after 6 weeks of stable standard medical therapy were randomized to receive either Pentoxifylline 400 mg TID (n=25) or a matching placebo (n=25). Functional class assessment, echocardiographic studies, and determinations of plasma concentrations of TNF- α, were performed at baseline, at 3 months and at 6 months after randomization. **Results:**Baseline characteristics of the patients were similar in both the groups. The NYHA class in the Pentoxifylline group improved significantly from baseline of 2.40 $\pm$ 0.51 to 1.75 $\pm$ 0.74 at 3 months (p=0.04) and to 1.69 $\pm$ 0.48 at 6 months (p=0.01). Six minute walk distance improved significantly from 317.95 $\pm$ 73.63 meters at baseline to 374.70 $\pm$ 48.44 meters at 3 months (p=0.06) and to 399.60 $\pm$ 47.13 at 6 months (p=0.009). There was change in EF from baseline of 24.59 $\pm$ 6.66 % to 27.28 $\pm$ 9.63 % at 3 months (p=0.064) and 28.68 $\pm$ 8.68 % at 6 months (p=0.062), which was statistically not significant. There was a significant decrease in plasma TNF- α concentrations from baseline of 125.65 $\pm$ 90.23 pg/ml to 50.52 $\pm$ 85.22 pg/ml at 3 months (p=0.03) and 38.49 $\pm$ 60.25 pg/ml at 6 months (0.02). There was no significant change in various parameters in the placebo group. No patient died or had a hospital admission during the study period. **Conclusions:** In patients with chronic heart failure with systolic dysfunction due to any etiology, the addition of Pentoxifylline to standard therapy results in significant improvements in functional class, and reductions in markers of inflammation. There was a trend towards improvement in LVEF

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HIGH BLOOD PRESSURE IN A COHORT OF PEOPLE JOINT TO PUBLIC EMPLOYEES MEDICAL SERVICE OF MENDOZA ARGENTINA

A. Añó[1], S. Mortaloni[1], O. Arrieta[1], S. Zizzias[1], L. Cammi[1], G. Vega[1], S. Depine[1Y2], S. Gimenez. *[1]PUBLIC EMPLOYEES MEDICAL SERVICE OF MENDOZA ARGENTINA [2]FUNDACIÓN VIDA SALUDABLE*

Introduction: It is recognized that the cardiovascular illnesses are the primary cause of death in the adult population. The major risk factors, include High Blood Pressure (HBP), dislipidemia, smoking, diabetes mellitus, obesity and sedentary lifestyle. It is highly important to identify HBP at an early stage, due to the fact that this is one of the few predictable risk factors of this disease. **Objective:** To determine the prevalence, knowledge the patient has about the disease, grade, population distribution, treatment and control of the arterial hypertension and its correlation with different variables. Materials and **Methods:** This is a population, descriptive and observational study with an evaluation focused on certain data such as: age, gender, tensional registers, cholesterol and glucemia levels, smoking, snoring background, etc. 16060 persons were interviewed (men aged 35 to 75 years old, while women aged 45 to 75 years old), in order to determine the prevalence, knowledge and control of the arterial tension, from December 1st of 2003 to May 5th of 2006. Method to determine the arterial pressure: The measure of the arterial tension was made according to the current guidelines.The criteria used came from the JNC7 **Results:** This is a study for the detection of risk factors rather than of diagnosis of the illness. Taking this into account, one can conclude that there were three main

groups that suffered hypertension: 1. The people that had been previously diagnosed with HTA (4850). 2. The people that had not been previously diagnosed with HTA but had high tensional levels (3372). 3. The people that had not been previously diagnosed with HTA and had normal tensional levels but were receiving some kind of antihypertensive treatment. (38) Therefore, there were a total of 8260 people who suffered of hypertension (51.4% of the population being studied). A different analysis was made in order to find the correlation between hypertension and the snoring habits of the people. It was found that 60% of the people who suffered hypertension were snorers while only 50% of the people that did not suffer hypertension were snorers ($p<0.0001$, RR: 1.138, CI95%: 1.107 to 1.171). 51.4% of the patients that had had cerebro-vascular events and 39.4% of the people who had not had one of these events, suffered hypertension ($P< 0.0005$. RR = 1.304, CI 95%:1.142 to 1.488). On the other hand, the people who had suffered a cerebrovascular event were the following; 3.2% of the patients that had had a previous diagnosis of HBP and 0.005% of the rest of the population. $P< 0.0001$, (RR= 2.435, CI: 95%: 2.232 to 2.656) **Conclusions:** Compared with previus studyies, we found that 51% of ecvaluated people was able to be considered to suffer HBP. We observed an statistically significant relation between having blood pressure and being snorer. We found and association between having an Stroke and being hypertense, so we can consider HBP a risk factor for having Stroke.

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A comparative study of Carotid Intima Media Thickness in Patient of End stage renal disease patients on peritoneal dialysis

S. Kumar , N Sinha, N Prasad, K Chawla, A Kapoor, S Tewari. [1]*Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow, INDIA*

Background: Cardiovascular disease and stroke are the leading cause of death in patients with end stage renal disease (ESRD) that requires dialysis. In the present study we have studied the difference in risk factors for atherosclerosis (determined by carotid intimal thickness and flow mediated dilatation), between diabetic and non diabetic patients of ESRD, who were on dialysis. **Methods:**We studied 62 patients of ESRD who were on peritoneal dialysis and findings were compared with age and gender matched control population. All the biochemical risk factors for atherosclerosis, systolic and diastolic echocardiographic parameters were assessed. Both, case & control population, was studied for CIMT by B-Mode ultrasonography and brachial flow mediated dilatation (FMD) was measured. **Results:** It was found that, in comparison to control population, patients of ESRD have significantly higher levels ($p<0.001$) of systolic BP, total cholesterol, LDL, triglyceride, serum uric acid, phosphate, CRP, parathyroid hormones & significantly low level ($p< 0.001$) of hemoglobin, calcium and HDL levels. Similarly CIMT was significantly high (0.60 ± 0.08mm vs. 0.54 ± 0.03mm; $p<0.001$), and FMD was significantly impaired (0.15 ± 0.08mm vs. 0.21 ± 0.04mm; $p=0.02$) in ESRD patients compared to control. Among the patients of ESRD, diabetics were having significantly higher level of systolic BP($p=0.03$), CRP ($P=0.002$), more diastolic dysfunction, more CIMT (0.62 ± 0.08mm vs. 0.58 ± 0.07mm; $p= 0.05$) than nondiabetics, while FMD was not significantly different between the two groups (0.16 ± 0.03 vs. 0.18 ± 0.03mm; $p =0.20$). **Conclusions:** We found that in addition to significantly higher levels of various biochemical risk factors of arteriosclerosis, patients of ESRD were having increased CIMT compared to normal population and among ESRD patients; diabetics have significantly more CIMT than non diabetics. Patients of ESRD have significantly poor FMD than normal population, while there is no significant difference of FMD between diabetics & non diabetic patients of ESRD, suggesting ESRD itself is a strong predictor of poor FMD, and is not affected by presence or absence of diabetes, a major risk factor of atherosclerosis.

P1055

Effects of flu vaccination of senior citizens (60+) on seasonal trends of morbi-mortality in Brazilian hospitals.

M. I. Azambuja[1], S. L. Bassanesi[2]. [1]*Universidade Federal do Rio Grande do Sul* [2]*Universidade Federal do Rio Grande do Sul*

Introduction: Coronary heart disease and stroke are the leading causes of mortality among the elderly. Since the mid-1980s (1) inflammation has been suggested as a possible common route shared by alternative pathways to atherosclerosis. Coronary inflammation and thrombosis secondary to influenza re-infection of individuals immunologically primed by the 1918 Influenza has been proposed to be the cause of most of the CHD cases and deaths occurring in the 1950s and 1960s (2–3). Inflammation has also been identified in association with CHD cases occurring among individuals with an insulin-resistant phenotype (4). While cohort studies have shown huge reductions in chronic diseases mortality among influenza-vaccinated compared to non vaccinated individuals, especially during the pre and early influenza seasons, it has been argued that much of this effect might be due to selection bias (5). Alternatively, this finding could be interpreted as just a postponement of those deaths expected to occur in association with the influenza season, either due to a postponement of the influenza season itself, or due to some beneficial effect of vaccination (immune-inflammatory activation?) independent of its expected preventive effect on influenza infection. This study intends to evaluate these alternatives analyzing the effects of flu vaccination of senior individuals (60+) upon the population pattern of morbi-mortality in Brazilian hospitals. **Methods:** This is a comparison of monthly rates of hospitalizations (all and selected causes) and of hospital lethality (all and selected causes), before (1996–98), and during the early (1999–2001) and the last (2002–2006) years of implantation of the vaccination program in Brazil (1999) stratified by age - individuals less the 60 years (mostly non-vaccinated) and 60 years and more (80% estimated vaccine coverage by the public health care system). Data refers to the 4 states from the south/southeast (Rio Grande do Sul, Santa Catarina, Paraná e São Paulo), within the zone of temperate clime, and good quality of health information data.. **Results:** Preliminary results suggest a significant postponement of respiratory diseases and all causes hospitalizations after 1999 – the first years of vaccination. The traditionally sharp winter peak of respiratory diseases hospitalizations and chronic diseases lethality became smaller, more extended in time, and dislocated about two months compared with the pe-vaccination period. Further analysis are being completed to totally describe the phenomena. 1.Ross R. Atherosclerosis:an inflammatory disease. New England J Med 1999;340:115–126. 2.Reinert-Azambuja MI. Influenza pandemic and ischemic heart disease epidemic: cause and effect? Xth International Symposium on Atherosclerosis, Montréal 1994. Atherosclerosis 1994; 109:328 [abstract]. 3.Azambuja MI, Levins R. Coronary heart disease. One or several diseases? Persp Biol Med 2007; 50: 228–242. 4.Pradhan AD, Ridker PM. Do atherosclerosis and type 2 diabetes share a common inflammatory basis? Eur Heart J 2002; 23:831–4. 5.Simonsen L, Taylor RJ, Viboud C, Miller MA, Jackson LA. Mortality benefits of influenza vaccination in elderly people: an ongoing controversy. Lancet Infect Dis 2077:658–66.

P1056

INTIMAL PROLIFERATION INDUCED BY PERIVASCULAR INFLAMMATION IN MICE: COMPARISON BETWEEN FEMORAL AND CAROTID ARTERIES

S. Lacchini[1,2], LF Borges[2], JPF Blini[2], BS Yasumura[2], JE Krieger[2]. [1]*Department of Anatomy, Institute of Biomedical Sciences, University of Sao Paulo, Sao Paulo, Brazil* [2]*Heart Institute (InCor), University of Sao Paulo Madicel School, Sao Paulo, Brazil*

Background: Several models of arterial injury have been proposed to analyze different genetic or pharmacological models of mice, but many questions have been raised about their reproducibility and physiological significance. Here, we report a characterization of a new approach to study a mouse model of vascular cuff-induced injury. **Objectives:** The aim of this study was to compare the cuff-induced lesions in femoral and carotid arteries by studying intima/media ratio, apoptosis and proliferation. **Methods:** Perivascular cuff was positioned around femoral and carotid arteries in the left side. The arteries in the right side were used as control. Two weeks after cuff implanting, mice were killed and tissues were harvested. Three-micrometer paraffin sections were evaluated to quantificate intima/media ratio at each 50mm, evaluating 850mm of the lesion length, in 18 slices. Tissues were studied for apoptosis (TUNEL assay) and proliferation (PCNA staining). Collagen IV and VII in media was performed by immunohistochemistry, and was evaluated by score of staining. **Results:** Similar cuff-induced intimal lesion was obtained from both carotid (15.1 ± 3.6 %) and femoral (17.8 ± 3.5 %) arteries, when compared to their controls. PCNA staining also showed similar proliferating index in both injured vessels (3.8 ± 0.6 % of positive nuclei for carotid, and 4 ± 0.9 for femoral artery). Collagen type IV immunostaining was greater in carotid arteries when compared to femoral (1.75 ± 0.42 vs. 0.75 ± 0.69 au, respectively), and decrease significantly (0.58 ± 0.49 au) after injury. On the other hands, collagen VII did not showed an important immunostaining in control and injured arteries, and it is probably not involved in vascular remodeling in this model. **Conclusion:** These results shows the possibility to amplify the range of study in vascular injury, using two different vascular beds at the same animal, and give a new approach for comparative study of vascular response to injury. Moreover, the results suggest that these arteries may remodel n a different manner, showing differences in extracellular matrix organization. Support: FAPESP, CNPq.

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Impact of Body Mass Index in the Target Organs Damage in Patients with Resistant Hypertension

M. Barros[1], A.B. Lima[1], C. A. S. Nascimento[1], J. R. M. Pereira[1], F. D. Vilela[1], V. Verri[1], P.R. Benchimol-Barbosa[1], F E S F. Cruz[1], I. Cordovil[1]. [1]*Instituto Nacional de Cardiologia*

Introduction: Study indicating the relation between overweight and the heart diseases with the increase of morbimortality **Objective:** Examine if there is a relation between body mass index (BMI) with kidney failure, left ventricular hypertrophy and abnormal in direct fundoscopy in patients with resistant hypertension. Material and **Methods:** We evaluated 95 patients, 65.3% females. The examination was perfomed using the database results of: the body mass index, creatitine clerance, result of direct fundoscopy and electrocardiography.The BMI was divided in: normal, pre-obesity and obesity range, according to the WHO. The creatitine clerance $<$60ml/min was used to caractherize the presence of kidney failure with the categorization from Cockroft-Gault. Results of direct fundoscopy grade 3 characterize damage and the eletrocardiography with the categorization from Sokolow-Lyon and Homhilt Estes. We used this methods to discriminate the presence of left ventricular hypertrophy (LVH). **Results:** We found 9% in the normal range of BMI. We observed the following characteristics: 55.6% of elder males with 22.2% with clearance $<$60ml/min. The direct fundoscopy grade 3 represented 44.4% of those subjects and the presence of LVH was attested in 44.4%. In the pre-obesity range of the BMI, 44% of the sample, 33.3% of elders, 42.9% male, 15.4% of those subjects showed clearance $<$ 60ml/min. The direct fundoscopy grade 3 represent 42.9% of those patients and there were incidence of LVH in 53.7%. In the obesity, 47% of the sample, were observed the following characteristics: 31.8% of elders, 22.7% male and 0% with clerance $<$ 60ml/min. The direct fundoscopy grade 3 represented 36.6% of those subjects and there were presence of LVH in 56.8% **Conclusion:** These results demonstrate an increase in incidence of LVH associated with pre-obesity and obesity, but there was a minority damage in the target organs analized (kidney and retina) in the obeses and pre obeses.

P1059

Can the progression of endothelium dysfunction be a predictor of cardiovascular events in patients with metabolic syndrome?

O. Savenko[1], **V. Vikentyev**[1]. [1]*Moscow State University of Medidine and Dentistry*

Background: Patients with metabolic syndrome have the range of risk factors for cardiovascular (CV) events. Impaired endothelial function has been reported to be the initial step in atherosclerosis and thus developing coronary artery disease. **Materials and Methods:** We examined 104 patients with metabolic syndrome (aged 37.0 ± 3.6 years, 54% males) with

endothelium dysfunction (? FMD 191.6%). At baseline routine clinical examination, laboratory tests, cardiac ultrasound, ECG- and blood pressure monitoring were performed. Endothelium-dependent vasoreactivity was assessed, using a high-resolution ultrasound, the diameter of the brachial artery at rest and during reactive hyperaemia (flow-mediated dilatation, ? FMD%: endothelial-dependent stimulus to vasodilatation). 38 patients had CAD confirmed with echocardiography stress test (? FMD 196.8±31.9%). 64 patients did not have CAD; they comprise the control group (? FMD 186.4±23.3%). Follow-up assessment was performed at five years. **Results:** At follow-up assessment endothelium dysfunction progression was seen in both groups. For study group ? FMD was 201.7% and for control – 192.3%. **Conclusion:** Endothelium dysfunction is a marker of abnormal processes in vascular system and CAD, but there is no positive correlation between its progression measured with ultrasound and the number of the cardiovascular events.

P1060

Myocardial infarction with angiographically normal coronary arteries in an infant

A. Sardella[1], H. Vazquez[1], I. Abella[1], C. Viegas[1], I. Torres[1], M. Grippo[1], M. Cazalas[1], A. Goldsman[1], A. Slichter[2], C. Kreutzer[2]. *[1]División Cardiología del Hospital de Niños Ricardo Gutiérrez, Buenos Aires Argentina [2]División Cirugía Cardiovascular del Hospital de Niños Ricardo Gutiérrez, Buenos Aires Argentina*

An one year old had infective myopericarditis with fever, dyspnea and anaemia. No important personal precedents, but both parent infected with human immunodeficiency virus (VIH). He presented with tamponage needing surgical drainage. The analysis of the exuded proved infection VIH. Later the electrocardogram showed a pattern of necrosis. The normal Coronary Angiography and Cardiovascular Magnetic Resonance (CMR) ruled out the isquemic aetiology and showed an Apical Aneurysm of left ventricle (LV). At the age of 3 a perfusion with gated spect and stress test rejected the myocardial ischemia repeating the apical and lateral necrosis, with low systolic function. Today the patient is 12 years old, with normal development, asymptomatic, without disability, treated with hyper-scheme for VIH and anticoagulant. The chest X-ray shows an expanded LV and a calcified image in the top. The Echocardiogram shows expansion of the LV, preserved global function and the apical aneurysm. Holter and exercise test are normal, without arrhythmias or ST disorders in effort. The CMR shows extensive LV and low systolic function and pseudoaneurysm of the top. With this diagnosis, cardiac surgery was indicated. To our knowledge, this is the first case with diagnosis of myocardial infarction with angiographically normal coronary arteries in an infant and sequelae of apical pseudoaneurysm or aneurysm.

P1061

Clinical impact of prophylactic use of aprotinin in cardiac surgery.

S. Olival[1], B. Santos[1], R. Gomes[1], A. Rouge[1], L. Alves[1], M. Freitas[1], R. Vegni[1], W. Homena[1], J. O. R. Brito[1], O. N. Barbosa[1]. *[1]Instituto Nacional de Cardiologia*

Background: Aprotinin therapy has been used for a long time to reduce the need for blood transfusion in cardiothoracic surgery. To date, however, serious questions remain regarding the safety and effectiveness of this agent. Objectives: The objective of the current study is to evaluate clinical outcomes (renal failure, stroke, myocardial infarction, shock, blood transfusion, mortality) in patients undergoing in cardiothoracic surgery who receive aprotinin. **Design: Cohort study Methods:** We followed consecutive patients undergoing cardiothoracic surgery in a single tertiary care center from January 2004 to August 2005. The main outcome measures were odds (expressed as an odds ratio with 95% confidence interval) of developing renal failure (defined as dialysis requirement), stroke, myocardial infarction, shock, excessive blood transfusion (defined as more than 3 units/patient) and mortality after cardiothoracic surgery between groups. The association measures were adjusted to variables that determine decision to use aprotinin. Baseline medical characteristics were compared between the control group and aprotinin group using the chi-square test, Fisher exact test, Mann-Whitney test and multivariate logistic regression. **Results:** We had a total of 987 patients who underwent cardiothoracic surgery. The median age was 58 (48–67 interquartile range) years; 367 (37.2 %) were female and the number of patients per surgery was as follows: 521 coronary artery bypass graft (CABG), 262 valvar surgery (V), 61 CABG + V and 143 other cardiothoracic surgeries. There were no significant differences in outcomes between aprotinin users and non-users: renal failure (OR 1.58; 95% CI 0.85 – 2.93); stroke (OR 2.23; 95% CI 0.90 – 5.52); myocardial infarction (OR 0.90; 95% CI 0.44 – 1.86); shock (OR 1.14; 95% CI 0.75 – 1.73); excessive blood transfusion (OR 0.87; 95% CI 0.60 – 1.24); mortality (OR 1.72; 95% CI 0.96 – 3.09). **Conclusion:** Aprotinin therapy was not statistically associated with renal failure, stroke, myocardial infarction, shock, excessive blood transfusion, or mortality risk in patients undergoing in cardiac surgery.

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Cardiogenic Shock without Acute Cardiac Syndrome: clinical profile of patients, management strategies and prognosis.

I. Wojtkowska[1], M. Banaszewski[2], A. Konopka, M. Marona, J. Stepinska. *[1]National Institute of Cardiology in Warsaw [2]National Institute of Cardiology in Warsaw [3]National Institute of Cardiology in Warsaw [4]National Institute of Cardiology in Warsaw [5]National Institute of Cardiology in Warsaw*

Background: Patients with non- coronary Cardiogenic Shock (CS) are heterogeneous group. There are limited data concerning epidemiology of CS without ACS in patients admitted to CCU. Observational data may improve disease management and guide the design of clinical trials. The aim of the study was to assess clinical profile, management strategies and prognosis of patients with non- coronary CS. **Methods:** A registry of patients with non- coronary CS admitted to CCU from Jan 2000 to Dec 2006. We have analyzed the risk of death according to etiology, comorbidities and treatment. **Results:** During last 6th years, 145 patients was admitted. The mean (SD) age of the pts was 62,2 (17,1) years, 62% were women. Etiology of the non ACS CS was: severe heart failure due to cardiomyopathies - 61pts, severe valvular disease– 43pts, another etiology (e.g. tamponade, pulmonary embolism, sepsis) – 41 pts.Total hospital mortality was 83% with a mortality ratio of 1.15 (95% confidence interval 1.10 to 1.19).; the 7. day mortality was 63%(RR 1.49, 95%CI 1.4 to1.9) and 30.day mortality - 79%(RR1.85,95% CI 1,8 to 3,1). On multiple regression analysis, variables associated with hospital mortality included hypertension, hyperlipidemia, ischemic heart disease, previous MI, smoking habits had no influence on the death rate. Only diabetes significantly decreased survival rate in the whole group ($p<0.03$). Cardiac arrest as a trigger of CS, irrespective of its mechanism, correlated with significantly lower survival rate ($p<0.03$). Mechanical ventilation ($n=128$) and administration of high doses of dobutamine or epinephrine within the first 48 hours of CS correlated with higher mortality ($p<0.001$ for both). IABP were used ($n=24$) and surgical/ percutaneous interventions ($n=17$) were used during CS. Patients with valvular heart disease and cardiomyopathies have a slightly better prognosis than others ($p<0.01$, $p<0.05$). **Conclusions:** Mortality in patients with non cardiogenic shock is still very high. Patients with valvular heart disease and cardiomyopathies have a slightly better prognosis than others, whereas diabetes increases the death rate. Mechanical ventilation and dobutamine/ epinephrine within the first 48- hours of CS reflected the worse outcome. New more effective therapeutic strategies should be established in this group of pts.

P1064

Acute Heart Failure With Preserved Systolic Function in Acute Coronary Syndrome Patients: clinical relevance and outcomes

C. Lourenço[1], R. Teixeira[2], S. Monteiro[3], N. António[4], S. Costa[5], F. Gonçalves[6], P. Monteiro[7], L. Gonçalves[8], M. Freitas[9], L. Providência[10]. *[1]Coimbra University Hospital [2]Coimbra University Hospital [3]Coimbra University Hospital [4]Coimbra University Hospital [5]Coimbra University Hospital [6]Coimbra University Hospital [7]Coimbra University Hospital [8]Coimbra University Hospital [9]Coimbra University Hospital [10]Coimbra University Hospital*

Background: Several studies of acute coronary syndromes (ACS) complicated by heart failure (HF) have focused primarily on patients with systolic dysfunction (left ventricular ejection fraction (LVEF) <50%). Little is known about acute HF with preserved systolic function (PSF) (LVEF ≥50%). Aim: To compare patients hospitalized for ACS with PSF and systolic dysfunction, regarding clinical characteristics, management and hospital outcome. **Methods:** Retrospective analysis of 620 patients hospitalized for ACS in a single centre. Patients were divided into two groups according to LVEF: Group A – LVEF<50 % (n= 474); Group B – LVEF≥50% and Killip>1 on presentation or during hospitalization (n=146). **Results:** Group B had more female patients (36.3 vs 23.4%, $p=0.002$), obesity (58.3 vs 45.5%, $p=0.007$), hypertension, had higher fasting glucose and had been more frequently on calcium channel blockers and nitrates. Moreover, they had higher Killip classes on presentation and during hospital stay, requiring more often treatment with nitrates and diuretics. Group A had a higher incidence of ST elevation acute myocardial infarction (AMI) (35 vs 24%, $p=0.013$), previous AMI (30.4 vs 15.5%, $p=0.001$), left bundle branch block and left anterior descendent stenosis (77.5 vs 55.7%, $p<0.001$). They also had higher levels of myocardial necrosis markers and had been more frequently on beta-blockers (30.1 vs 17.4%, $p=0.020$) and statins (39.1 vs 26.7%, $p=0.035$). They were more often on beta-blockers, both during hospital stay and at discharge. This group had a much higher incidence of in-hospital morbidity (6.9 vs 1.4 %, $p=0.012$) and mortality (5.1 vs 0.0%, $p=0.006$). No significant differences were found regarding lipid profile, renal function, heart rate, TIMI score or length of hospital stay. Multivariate analysis showed that predictors of complications in this population were LVEF<50% ($p=0.02$; OR 5.786), older age ($p=0.036$; OR 4.8) and lower IMC ($p=0.034$; OR 2.601). **Conclusions:** ACS with acute HF and PSF is common and carries a good prognosis. Further studies are warranted to determine the optimal therapeutic approach and long-term prognosis of these patients.

P1065

Ambulatory blood-pressure monitoring in patients with severe aortic regurgitation, before and after treatment with nifedipine

F. Gual-Capllonch[1], A Evangelista[1], JL Tovar[2], T Gonzalez-Alujas[1], M Alvarez[1], P Mahia[1], R Aguilar[1], P Tornos[1]. *[1]Servicio de Cardiologia, Hospital Vall d'Hebron [2]Servicio de Nefrologia, Hospital Vall d'Hebron*

Background: Vasodilator therapy in patients with severe aortic regurgitation (SAR) is designed to decrease regurgitation volume by afterload reduction. Although long-term benefits have been associated with systolic blood pressure reduction, these changes have not been evaluated by ambulatory blood pressure monitoring (ABPM). We aimed to analyse the mean BP and pulse pressure (PP) and their changes after nifedipine treatment in patients with SAR. **Methods:** We assessed 24 consecutive patients with asymptomatic SAR and normal LV function by echocardiography with 2 observer agreement. 24-h ABPM was performed before and 3 weeks after onset of treatment with nifedipine retard 20mg/12 hs. **Results:** Pretreatment mean systolic (SBP), diastolic (DBP) and mean BP (MBP) were 125.3± 11.9 mmHg, 66.8± 6.4 mmHg and 87.1± 6.7 mmHg respectively. Mean PP was 58.5± 11.7 mmHg. PP was correlated with LV end-diastolic diameter ($r=0.48$, $p=0.017$) and age ($r=0.36$, $p=0.08$). Four patients did not tolerate nifedipine. Nifedipine treatment was associated with a slight reduction in SBP (mean -2.7 mmHg, $p=0.037$) and PP (–2.5 mmHg, $p=0.013$), but not in DBP and MBP. SBP decreased > 5 mmHg only in 20% of patients (4/20). No clinical or echocardiographic predictor of SBP reduction was found, but patients with PP > 60 mmHg ($n=12$) showed a tendency to reduce more SBP than patients with PP< 60 mmHg (-3,8 mmHg vs –1,6 mmHg, $p=0,07$). **Conclusion:** Mean SBP and PP in asymptomatic patients with severe AR were lower than expected. Nifedipine treatment reduced SBP slightly, but it was relevant only in a minority of patients.

P1066

The impact of Head-Up Tilt Test (HUT) with nitroglycerine (NTG) provocation on chosen parameters of assessment in the healthy human subject circulation

K. Peczalski , P. Sionek, D. Wojciechowski. *[1]IBBE PAS & Wolski Hospital Warsaw, Poland*

The goal of our study was a complex assessment of the reaction of different vessel beds of circulation system, after administration of NTG during head up tilt test, in the healthy human subject. **Method.** 28 male volunteers was enrolled in this study. The group was divided onto two subgroups: A – 18 subjects (aged 21–44, mean 28.83 SD+/- 6.73) without syncope during HUT with NTG administration and B – 10 subjects (aged 22–40, mean 30.90 SD+/- 5.65) with prodromal syncope during HUT with NTG administration. The test procedure was as follow: - 20 minutes in supine position - 40 minutes in tilt position or to syncope (end of study) Consecutively (in pts without syncope) - NTG administration - 20 minutes in tilt position or to syncope (end of study) - end of study The data were assessed with following schedule: - during first 2 minute in supine position (START) - during first 2 minute after tilt (TILT) - in 40th minute of tilt (END) - in the first and second minute after NTG administration (PROV 1, PROV 2) The following measurements were performed: a. plethysmographic measurements of hemodynamic parameters: systolic & diastolic blood pressures (BP), stroke volume (SV), heart rate (HR), b. EEG: alfa waves frequency, alfa waves amplitude, c. transcranial Doppler: blood max.(Vmax.) & mean velocity (Vmean), Gossling (PI) & impedance factor (II). **Results.** Figure 1. The results of Mann – Whitney U Test for groups A & B In the following parameters HR, SV, frequency of alfa waves, amplitude of alfa waves, V max., V mean and II no significant differences between groups A & B in any data assessment point were found. **Conclusions:** 1. In a group of healthy volunteers no significant correlations of evaluated parameters between brain and central vessels bed were found. 2. It can be postulated that some parameters (i.e. systolic blood pressure) can be taken as a predictor of induced syncope however more study is needed to confirm this finding.

RESULTS

Parameters	Start	Tilt	End	Prov 1	Prov 2
BP syst.	ns	ns	0,10	0,06	0,01
BP dias.	ns	ns	0,08	ns	0,03
PI	0,05	ns	ns	ns	X

ns - non significant, X - no signal assessment

P1068

TYPE 2 DIABETICS WITH HIGH LEVELS OF C-REACTIVE PROTEIN PRESENT A REDUCTION OF HEART RATE VARIABILITY

E. O. Fernandes[1], A. L. A. Branquinho[1], S. M. R. Castro[1], V. A. Leite[1], B. V. França[1], A.L.R.M. Freitas[1], L. C. Silva[1]. *[1]University of Brasilia - UnB, Brazil*

Introduction: High sensitivity C-reactive protein (HSCRP) is an independent risk factor for cardiovascular disease, contributing to the pathogenesis of cardiac autonomic neuropathy, by stimulating vasoconstriction and reduction of the neural blood flow. The cardiac autonomic dysfunction raises cardiovascular mortality in type 2 diabetes patients. The analysis of heart rate variability (HRV) allows the non invasive determination of cardiac autonomic function. **Objectives:** To evaluate heart rate variability in type 2 diabetics and to establish the existence and the type of correlation in accordance to blood levels of HSCRP. **Methods:** 28 type 2 diabetics, of both sexes, aged 43 to 76 years (Mean = 58.4±8.3) were divided, in accordance to HSCRP levels, into the groups: A = low risk (0.18–0.99 mg/dL) with 7 patients; B = moderate risk (1.0–3.0 mg/dL) with 9 patients; and C = high risk (> 3.0 mg/dL) with 12 diabetics. The following frequency domain indices of HRV were obtained through R-R intervals registration during 5 minutes resting in supine position: low-frequency band (LF) (sympathetic modulation); high-frequency band (HF) (parasympathetic activity), varying between 0.04–0.15 and 0.15–0.45 Hz, respectively; and the total power (TP). The statistic analysis was carried on by using the package SPSS v.12, accepting a value of $p < 0.05$ as statistically significant. **Results:** They are described in table - HRV in the three risk groups of diabetics. **Conclusions:** These diabetics at high risk, with higher HSCRP, presented a reduction of cardiac autonomic function when compared with the group at low risk, with smaller HSCRP. It was due to the sympathetic mediation. Between moderate and low risk diabetics, the reduction of HRV was not significant.

	Group A	Group B	Group C	P_1	P_2
LF	234.6±76.5	194.1±84.3	99.4±59.7	0.39	0.01
HF	173.3±110.3	166.9±96.8	107.1±63.0	0.95	0.24
TP	618.9±190.9	562.6±201.7	353.8±177.0	0.55	0.04

P_1 = comparison between groups A and B; P_2 = comparison between groups A and C.

P1069

ARTERIAL HYPERTENSION AND DYSLIPIDEMIA: COMPARISON AMONG ANAMNESIS AND THE RESULTS GOT FROM DIGITAL SPHYGMOMANOMETER AND BIOCHEMICAL MEASUREMENT FROM PERIPHERAL BLOOD

ALP Arnaldo Lemos Porto[1], DMSN Douglas M. Silva Nascimento[2], JPHR João Paulo Hanel Rorato[2], ECAR Eliane Consuelo A. Rabelo[2], CCP Celmo Celeno Porto[2]. *[1]Hospital Santa Helena - Goiânia - GO [2]Faculdade de Medicina - Universidade Federal de Goiás*

Introduction - In Brazil, 2003, 27.4% of deaths was caused by cardiovascular diseases, reaching 37.0% when excluded deaths for undefined causes and for violence. Hypertension and dyslipidemia are major causes of morbidity and mortality throughout the world, therefore, the awareness about having or not these diseases is very important. **Objective** – Evaluate in private hospital workers the awareness about be or not hypertensive and/or carrier of dyslipidemia through anamnesis, and compare it results with arterial pressure measurement using digital sphygmomanometer and with serum cholesterol measurement. **Methodology** – 217 workers of Santa Helena Hospital (Goiânia - Brazil) underwent a clinical evaluation that included a questionnaire about being or not hypertensive and/or carrier of dyslipidemia. After four months, 150 workers of the same group had been evaluated with pressure measurement through digital sphygmomanometer (Omron HEM – 705 CP) and serum cholesterol measurement from capillary blood (Opti-free - Roche). Those with systolic arterial pressure ≥ 140 mmHg and/or diastolic arterial pressure ≥ 90 mmHg had been considered hypertensive, and those with serum cholesterol ≥ 200mg/dL had been considered dyslipidemic. For statistical analysis were used the software SPSS for windows. The Fisher test had been applied to compare the results. The trust level established had been 95 %, and $p > 0.05$ had been considered significative. **Results** – In this population female sex predominates (75.0%), with age varying from 18 to 68 years (mean = 35.07 ± 9.30). 14.3% said yes when asked about be or not hypertensive, and 17.3% was hypertensive, when pressure levels was measured with digital sphygmomanometer ($p = 0.080$). When asked about be or not dyslipidemic, 6.9% said yes. However, significantly more people - 26.7% - had high cholesterol levels in the cholesterol serum measurement ($p < 0.001$). **Conclusion** – Nowadays, because the great prevalence of cardiovascular diseases it's necessary diagnosis and education about cardiovascular risk factors, aiming its suitable control. In this group of hospital workers, we observed a suitable awareness about hypertension, and inappropriate awareness about dyslipidemia. Hence is necessary educate population, principally about cholesterol normal levels and how to reach these aims.

P1070

THE IMPACT OF NURSING CONSULTATION ON THE CONTROL OF INR

F. Silva[1], A. Camara[2], R. Filho[1], C. Barros[1], S. Figueiredo[1], T. Guimaraes[2], I. Santos[1], I. Oliveira[1], M. Bosa[1], R. Silva[1]. *[1]Instituto Nacional de Cardiologia [2]Universidade Federal do Rio de Janeiro*

Patients subjected to valvar exchange, bearers of chronic atrial fibrillation, related to other pathologies or not, with spread out cardiomyopathy, with thrombus in cardiac chamber, deep venous thrombosis, pulmonary embolism, antifosfolipideo antibody syndrome and other pathologies, need the continuous use of the antagonist of vitamin k (also called oral anticoagulant) in the prevention of the thromboembolic phenomenon. The coagulation control of these patients, specially of the INR (International Normalized Ratio) is fundamental to reduce the risk of thrombosis or bleeding. The objective of this study consisted in evaluating compliance with treatment, and consequently, the maintenance of INR, in monitored outpatients of a public hospital specialized in cardiology. The method used was nursing consultation, with appropriate guidance taking in consideration (i) the patients' level of education (59% illiterate), (ii) the required dose size of the medicine (anticoagulant) and daily timetable, (iii) the drug interactions and the intake of food which changes the medications's absorption and, consequently, the action of the anticoagulant. The INR dosage was realized according to the established protocol, which consists of assessing at 30 days intervals, if it is on target, or, at shorter intervals, when the the last measurements indicated that the INR was outside the desired target range. Dose adjustments are (were ?) made by nurses or doctors in these patients' treatment. The compliance to the received guidelines was monitored by oral questions posed to the patients. The effectiveness of the new therapeutic approach was assessed by the results achieved: the 45% rate of INRs measurements inside the desired target verified before the experiment, was increased to 55% after three months. In the following six months they remained around 59%. There was also the decrease of "smaller events" – small bleeding with gum bleeding, epistaxis, echimosis, Uterine bleeding, and urine bleeding: reduction of 21% in the number of events from June 2003 to may 2005 (199 cases); from June 2005 until June 2007 the number of cases fell to 155 cases. **Conclusion:** The multiplicity of information around the health care of patients, who are using the oral anticoagulant, is undoubtedly, a challenge for the multidisciplinary team. Through the nursing consultation, the nurses developed a therapeutic approach that is capable of making the understanding about the treatment of health more effective, decreasing the incidence of small and big complications in patients receiving the oral anticoagulant. Bibliography: - Douketis J.D. Perioperative management in patients who are receiving oral anticoagulant therapy: a practical guide for clinicians. Thrombosis research. 2003; v. 180: p. 3–13. - Watts S. A., Gibbs N.M. Outpatient management of the chronically anticoagulated patient for elective surgery. Anaesthesia and intensive care. 2003; v. 31: p. 145–154. - Becker R.C. Terapia Antitrombolítica. 2004. RJ. - Departamento de Hematologia do Instituto Nacional de Cardiologia

P1071

Lower serum Fetuin-A levels are associated with aortic sclerosis in patients with coronary artery disease and preserved renal function

K. Linhartova[1], J. Veselka[1], G. Sterbakova[2], O. Topolcan[2], R. Cerbak[3], J. Racek[2]. *[1]Cardiovascular Center, University Hospital Motol, Prague, Czech Republic [2]University Hospital Pilsen, Czech Republic [3]Center for Cardiovascular and Transplantation Surgery, brno, Czech republic*

Background: In calcific aortic valve disease, the early sclerotic valve lesion is similar to the atherosclerotic arterial plaque, whereas extensive calcification is the hallmark of aortic stenosis (AS). Fetuin-A is a circulating calcification inhibitor. Our aim was to assess its association with aortic sclerosis, stenosis, and intact aortic valve in patients with significant coronary artery disease and preserved renal function. **Methods:** We prospectively enrolled consecutive patients with angiographically significant coronary artery disease associated either with nonobstructive aortic sclerosis (mean gradient ≤10 mmHg), or with AS (mean transvalvular aortic gradient ≥30 mm Hg) or with intact aortic valve as controls. We compared the serum fetuin-A levels between the three groups. **Results:** We included 39 pts. with aortic sclerosis (28 males), 41 pts. with AS (25 males), and 45 controls (35 males) with intact aortic valve. The patients with

aortic sclerosis were younger than those with AS and controls (68±7 vs. 72±7 vs. 66±5 years; p<0.001 AS vs. controls). The serum fetuin-A levels did not differ between pati ents with aortic sclerosis and AS (0. 58±0.20 vs.0.59±0,20 g/l, ns) but were lower than in pts with intact aortic valve (0.75±0.23 g/l, p<0.001 for both aortic sclerosis and stenosis vs. controls). Between the three groups, there were no statistically significant differences in the creatinine clearance (1.17±0.3 ml/sec), nor in the occurrence of the major cardiovascular risk factors: hypertension, smoking, diabetes, dyslipidemia, and LDL cholesterol levels, body mass index, and high sensitivity C-reactive protein. **Conclusion:** Lower fetuin-A levels are associated with calcified aortic valve in our patients with coronary artery disease and preserved renal function. We did not observe any difference in the serum fetuin-A levels between those with early sclerotic lesion and severe calcific AS. Our results suggest the role of calcium homeostasis dysregulation from the early stage of calcific aortic valve disease in these patients.

P1072

SCIENTIFIC ANALYSIS OF PRODUCTION OF CARDIOVASCULAR NURSING UNDER THE PREVENTION TERTIARY

A. Camara[1–2], C. Barros[1], D. Santoro[2], F. Silva[1], R. Barreiro Filho[1], R. Silva[3], S. Figueiredo[1], T. Guimarães[1], I. Santos[1], L. Campos[1–2]. *[1]INSTITUTO NACIONAL DE CARDIOLOGIA [2]UNIVERSIDADE FEDERAL DO RIO DE JANEIRO [3]UNIVERSIDADE FEDERAL DO ESTADO DO RIO DE JANEIRO*

Background: Perspectives on Cardiovascular Nursing - CV research is difficult to understand when we are focus on limited perspectives. In general cardiovascular diseases are discussed with epidemiologic vision, diagnosis and therapeutic discussion. Selected cardiovascular diseases are described, including hypertension, coronary artery disease, and stroke. know what is the trends of research is significant to understand the development and needs the knowledge. **Objective:** To describe the profile of scientific research about cardiovascular nursing of adult patients requiring tertiary healthcare. **Methods:** We searched MEDLINE using "cardiovascular nursing" as MeSH term, limited to the 1997–2007 period. Inclusion criteria were The variables collected were: country and journal of publication, the gender and ethnicity of the subjects, the basic disease, or risk for cardiovascular disease, comorbidity, type of action, focus of attention and the methodology used. **Results:** Among the 688 returned abstracts, 252 fulfilled inclusion criteria. Most of the studies were published in five countries: USA (63.5%), England (12.70%), Canada (5.1%), Holland (4,7%) and France (4.7%). Included articles concentrated in the 2004–2006 period (45%). The journal articals index with the most publication was J Cardiovasc Nurs (9.5%) followed by the Prog. Cardiovasc Nurs (4.7%) and the European Journal of Cardiovascular Nurse (3.9%). The female gender has been the subject of research in (7.9%) of the articles. The cardiovascular disease (36.9%), followed by lifestyle modification (11.9%) and hypertension (5.9%) were the most frequently researched diseases found. The assessment of risk for cardiovascular disease concentrated (17.06%); Education for health (16.6%); Diagnosis (4.7%); Evaluation and therapy (3.9%), were the main concerns observed as the major approaches that have been taken to the evaluation of nursing (17.85); Abilities and skills (6.7%), followed by Modification risk factors and planning of treatment, both with 5.1% of the studies. As for the method, there was predominance of searches for revision (19.4%). The most studies (31.3%) did not describe the method of search. **Conclusion:** Perspectives about research in CV nursing with terciary prevention demonstrated is need build methodologic capacity for abstract. Research in education to health, diagnosis, therapy evaluation and development of skills and competencies, seem to be a trend in global research in CV. This results indicated it is necessary these productions seek greater emphasis the evidence that will subsidize effectively the actions of nursing in this area.

P1073

Peri-stent Remodeling after Sirolimus-eluting or Paclitaxel-eluting Stent Implantation in Diabetic Patients. A Randomized Serial Intravascular Ultrasound Study.

L.O. Jensen[1], M. Maeng[2], P. Thayssen[1], E.H. Christiansen[2], K.N. Hansen[1], A. Galloe[3], H. Kelbaek[4], J.F. Lassen[2], L. Thuesen[2]. *[1]ODENSE UNIVERSITH HOSPITAL [2]SKEJBY HOSPITAL [3]GENTOFTE HOSPITAL [4]RIGSHOSPITALET*

Background: Patients with diabetes have increased risk of in-stent restenosis after coronary stent implantation due to NIH. The aim of the study was to evaluate neointimal hyperplasia (NIH) and peri-stent remodeling with intravascular ultrasound (IVUS) after implantation of sirolimus-eluting (Cypher) and paclitaxel-eluting (Taxus) stents in diabetic patients. **Methods:** 95 diabetic patients were randomized to Cypher or Taxus stent implantation. IVUS was performed after the percutaneous coronary intervention and at eight-month follow-up. At the follow-up IVUS was available in 74 patients (Cypher=40; Taxus=34). **Results:** NIH volume and volume obstruction were significantly reduced in the Cypher group as compared to the Taxus group [NIH volume: Median (interquartile range): 0.0 mm^3 (0.0 to 0.0) vs. 8.0 mm^3 (0.1 to 33.0), p<0.001 and volume obstruction: 0.0% (0.0 to 0.0) vs. 7.5% (0.1 to 27.0), p<0.001]. Increase of peri-stent external elastic membrane (EEM) volume was more pronounced in the Taxus group (from 292.4±132.6 to 309.5±146.8 mm^3) than in the Cypher group (from 274.4±137.2 to 275.4±140.1 mm^3) (p=0.005). Plaque volume outside the stent increased in the Taxus group (from 152.5±73.7 to 166.1±85.1 mm^3) but was unchanged in the Cypher group (from 153.5±75.5 to 151.5±75.8 mm^3) (p=0.002). Six patients had late acquired incomplete stent apposition (Cypher: n=4 (10.0%), Taxus: n=2 (6.1%): p=0.683). **Conclusion:** In diabetic patients the Cypher stent inhibited NIH formation more effectively than the Taxus stent. Further, Taxus stent implantation was associated with increased peri-stent EEM volume and plaque growth outside the stent.

P1074

The multidisciplinary team care to secondary prevention in a group with resistant hypertension treated in a public institute of cardiology in Rio de Janeiro, Brasil.

A.B. Lima[1], M. Barros[1], V. Verri[1], J.R.M. Pereira[1], C.A.S. Nascimento[1], F.D. Vilela[1], P.R. Benchhimol-Barbosa[1], F.E.S.F. Cruz[1], I. Cordovil[1]. *[1]Instituto Nacional de Cardiologia*

Objective: To assess the compliance to treatment and the impact of morbidity in subjects under a multidisciplinary team care. Material and **Methods:** We interviewed a group of 181 subjects with resistant hypertension. The group was pre-selected to test if the program enrollment contributed to reduce the following conditions: hipertensive crisis, kidney failure, stroke and myocardial infarction. Enrolled subjects were present in monthly meetings and/or that performed the exams at least twice in 2007. **Results:** From a group of 181 patients, 11.6% revealed some out of comorbidity; 51.9% of the patients completely hold on to the program. As of the total 181 subjects studied; 2.8% had myocardial infarction and, 60% of those did not participate on the program; 2.8% has had stroke, 80% of those were not participating the program. From the 3.9% that showed kidney failure, 57.1% weren't engaged the program. There were 5.5% of hospital admission for hipertensive crisis; 30% of those were from patients that had not joined the program. **Conclusion:** We concluded the occurance of cardiacs events were lower among the subjects that were enrolled in the program, suggesting that the investment in a multidisciplinary team showed a positive response and should be addressed as a health strategy for secondary prevention.

P1075

The relationship between angiotensin converting enzyme gene polymorphism and comorbidities in rural community patients with chronic heart failure.

H. Balieiro[1], ET Mesquita[1], TL Balieiro[2], SR Brito[2], RB Moreira[2], RK Osugue[2], SB Pereira[1], AM Domingos[2], AP Moraes[2], G Ribeiro[1]. *[1]Universidade Federal Fluminense [2]Faculdade de Medicina de Valença*

Background: Previous reports have demonstrated that angiotensin converting enzyme Insertion/Deletion (ACE I/D) gene polymorphism influence in the prognosis and therapeutic response in tertiary centers patients(pts) with chronic heart failure (CHF) with depressed left ventricular ejection fraction (LVEF). Urban and rural areas differ on social-economic, cultural and clinical aspects and genetic prevalence. Whether these aspects may influence on CHF characteristics in patients from rural area is unclear. **Objective:** To investigate the association between the ACE I/D gene polymorphisms and comorbidities in patients from rural area with CHF including depressed and preserved LVEF. **Methods:**: We performed a prospective cross-sectional study that included 83 pts with CHF, 42(50,6%) males, 47(56,6%) preserved LVEF and 36(43,4%) depressed LVEF with CHF. The CHF was diagnosed for Boston criteria and submitted to echocardiogram to confirm the diagnostic being considered normal LVEF> 45%. The LVEF was obtained for Simpson method. They were classified into 3 groups using polymerase chain reaction-based protocols: ID(mean age 57,5±15 years, mean LVEF 49±17%), DD(mean age 57,3±15 years, mean LVEF 55±16%) II(mean age 56,9±15 years, mean LVEF 43±16%) genotype. The ACE DD presented high LVEF with significant (p<0,04). The genotype frequencies were compared between the groups of patients with chronic kidney disease (CKD), diabetes mellitus (DM), high blood pressure (HBP), coronary artery disease (CAD), anemia and atrial fibrillation (AF). Statistical analysis was performed using Fisher exact, chi-square to compare the groups. To assess the allele frequencies and probabilities was used Weir and Cockerham, Robertson and Hill, Hardy Weinberg test. The P<0.05 were considered statistically significance. **Results:** The ID genotype in 44 (53%)pts, the DD genotype was observed in 27 (32,5%)pts and the II genotype in 12 (14,5%)pts. There was no significant (ns) difference in mean age among groups. There was no significant allelic difference in ACE gene polymorphism among three groups. **Conclusions:** In patients with CHF from rural area the ACE-DD gene polymorphism was associated with HBP and CAD.

	DM	CKD	Anemia	AF	HPB	CAD
ID	13(29%)	09(20%)	08(18%)	09(20%)	44(100%)	11(25%)
II	02(25%)	01(8,3%)	02(16%)	02(17%)	10(83%)	02(17%)
DD	13(48%)	04(14,8%)	08(30%)	01(04%)	27(100%)	14(51%)
P	ns	ns	ns	ns	<0,001	<0,04

P1076

Successful treatment of endotension and aneurysm sac enlargement with endovascular stent graft reinforcement.

M. Ferreira[1], R La Mura[1], E Ruslender[1], JC Parodi[1]. *[1]FLENI [2]FLENI [3]FLENI [4]FLENI*

Recent reports have raised concern about the percentage of enlarging abdominal aortic aneurysms (AAA) after endovascular repair with the first generation Gore Excluder device (WL Gore, Flagstaff, Ariz). This led to an extensive investigation into potential causes of AAA enlargement, with the conclusion that graft material permeability in the original Excluder device may be the etiology of aneurysm sac enlargement in a significant number of cases. Thousands of patients around the world received this device for their aneurysm repair. Abdominal aortic aneurysm (AAA) enlarges after successful endovascular repair because of endoleak, which is persistent blood flow within the aneurysm sac. However, AAA may still expand, in the absence of detectable endoleak. This situation is called endotension, which is persistent pressurization within the excluded aneurysm. We report three patients who had undergone successful endovascular AAA repair using the first generation Excluder endograft. After three years follow up, delayed aneurysm enlargement developed in all three, due to endotension. Endovascular treatment was performed. A combination of aortic cuff and iliac endograft extenders were inserted into the previously implanted stent grafts to relining, using three different techniques.

The endograft reinforcement procedure was successfully done in all cases, resulted in aneurysm sac regression in all three patients. Our study underscores the significance of increased graft permeability as a mechanism of endotension and delayed aneurysm enlargement after successful endovascular AAA repair. In addition, our cases illustrate the feasibility and efficacy of an endovascular treatment strategy when endotension and aneurysm sac enlargement develops after endovascular AAA repair.

P1077

METHIONINE PRODUCED AN IMPAIRMENT OF CARDIOVASCULAR AUTONOMIC MODULATION IN RATS

G.O. Candido[1], R.H. Mendes[2], R.N. De La Fuente[1], C. Mostarda[1], I.C.M. Silva[1], L. Jorge[1], M.C. Irigoyen[1,2], K. Rigatto[2,3]. *[1]HEART INSTITUTE, UNIVERSITY OF SAO PAULO, MEDICAL SCHOOL [2]CARDIOVASCULAR PHYSIOLOGY AND ACTIVE OXYGEN SPECIES LABORATORY, UNIVERSITY OF RIO GRANDE DO SUL [3]FEDERAL FOUNDATION MEDICAL SCIENCE FACULTY OF RIO GRANDE DO SUL*

Introduction: Homocysteine (Hcy) is a suphur amino acid in methionine-cysteine metabolism. Hyperhomocysteinemia (HHcy) was shown to be an independent risk factor for atherosclerosis. **Purpose:** The objective was to evaluate the effect of methionine (ME) treatment on systolic arterial pressure (SAP), heart rate (HR), baroreflex sensitivity, systolic arterial pressure variability (SAPV), and heart rate variability (HRV) in rats. **Methods:** Male wistar rats (n=5/group) were treated by gavage for five days/week for 9 weeks. Animals received water (CO) or methionine (ME; 0,1g/kg in water). At the end of the treatment, catheters were implanted into the femoral artery and vein for cardiovascular measurements. Baroreflex sensitivity was evaluated by bradycardic and tachycardic responses to phenilephryne and sodium nitroprusside, respectively. Pulse interval and SAP variabilities were evaluated in the time (standard deviation) and frequency-domains using spectral analysis (FFT). **Results:** Our results showed that ME treatment increased the SAP (CO=117.27±8; ME=135.66±9 mmHg $p<0.02$) and there was no difference in HR between groups (CO= 324±13; ME=337±11bpm). Tachycardic and bradycardic responses in ME were decreased (CO=2.44±0.4; ME=1.41±0.6 and CO=1.87±0.5; ME=1.33±0.2, respectively). SAPV in time domain was increased in ME (CO = 5.23 ±1; ME = 7.67 ± 2.6 mmHg $p<0.2$). Additionally, in frequency domain, sympathetic component of SAP (low frequency) was enhanced in ME group (CO=3.6±2 ; ME=9.3±6). The HRV in time domain was not different between groups (CO=9.94±2.56; ME=9.14±3.08 ms). However, the low frequency component of HRV was increased in ME group (CO=18.5±3; ME=52.5± 21%; $p<0.01$) and the parasympathetic component (high frequency) was decreased in ME (CO=81±3; ME=47± 21%; $p<0.05$). Consequently, there was an increase in the autonomic balance in ME group compared to control (CO=0.29±0.1; ME=1.33± 0.99; $p<0.01$). **Conclusion:** These results suggested that ME treatment induced HHcy in rats, producing an increase in SAP and decreased baroreflex sensitivity, leeding to an autonomic modulation impairment.

P1078

IMPACT OF A MANAGED ACUTE MYOCARDIAL INFARCTION (AMI) PROTOCOL IN THE PRESCRIPTION RATE OF ACE INHIBITORS OR ANGIOTENSIN RECEPTOR BLOCKER FOR HOSPITALIZED PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND LEFT VENTRICULAR SYSTOLIC DYSFUNCTION

M R P Makdisse[1], A. Correa[1], S Lagudis[1], S S Morhy[1], F Bacal F[1], **M Knobel**[1], C H Fischer[1], M L C Vieira[1], P V Pires[1], E Knobel[1]. *[1]HOSPITAL ISRAELITA ALBERT EINSTEIN, SÃO PAULO, SP, BRASIL.*

Introduction and objectives. The rate of angiotensin-converting enzyme inhibitors (ACEi/ARB) at discharge is a quality indicator for acute myocardial infarction (AMI) care. The aim of the study was to evaluate changes in drug prescription before and after the implementation of a Managed AMI protocol in patients hospitalized for AMI with moderate to severe left ventricular systolic dysfunction (LVSD). **Patients and method.** A total of 578 consecutive AMI patients (mean age: 68,0±14,4 yrs) were evaluated. Of those, 92 were eligible for ACEi/ARB therapy at discharge (had LVEF <40% and/or narrative of LVSD and/or, did not have a contraindication to ACEi/ARB and had survived their hospital stay without transfer to another facility). The Managed AMI protocol was implemented in a terciary hospital on 03/01/2005. Quality indicators were prospectively followed by a nurse case-manager and periodic performance feedback (reports) were given to local hospital managers and clinical staff. Patients were divided in 3 groups: G1- Pre-protocol (march/04-february/05), G2–1st year post-protocol (march/05- february/06) and G3–2nd year post-protocol (march/06- february/07). Statistical analysis was performed using Chi-square test and Fisher Exact test. A p-value < 0.05 was considered statistically significant. **Results.** Results are shown in table 1. Conclusions. A significant increase in the rate of ACEi/ARB prescription was observed both in the first and the second years after AMI protocol implementation. A trend toward na increase was also observed when the 1st and 2nd year post-protocol are compared. These data suggest that managed protocols which include continuous monitoring of quality indicators are useful tools for implementing cinetific evidence into clinical practice.

Group	n	% ACEi/ARB prescription	p
G1,n=15	8/15	53,3	0,03(G1xG2)
G2,n=31	26/31	83,8	0,0004(G1xG3)
G3,n=46	44/46	95,6	0,05(G2xG3)

P1079

Analysis of possible iPods interference with Pacemakers

M. Benassi[1], E. Valero[2], R Pesce[3], L Jurado[4]. *[1]Independence Clinic, Buenos Aires Aregentina [2]Ateneo Bs. As. Argentina. [3]Fleni Institute. Buenos Aires, Argentina [4]Buenos Aires, Argentina*

Background. According to a study presented by a high school student, during the Heart Rhythm Society Meeting, iPods can cause cardiac implantable pacemaker malfunction due to electromagnetic interference. **Objetives:** This study tested the effect of iPods on patients outfitted with pacemakers to detect electrical interference. **Method:** The effect of the portable music devices: ipod Apple and a generic one with 2GB of storage was tested. Seventy two patients, 39 males and 33 females, mean age was 75±12 years (24–92 years) implanted with pacemakers were studied. Possible electrical interference was studied during on- off maneuvers and when the iPod was held just 5cm from the patient's chest for 5 to 10 minutes, while the technician records the pacemaker telemetry and electrocardiogram. Different models of pacemakers has been analyzed: Bicamerals 2 Axios (Biotronik); 1 Rapsodhy (ELA Medical); 1 Insignia, 4 Intellis II (Guidant); 3 Sigma, 2Vitatron, 1 Kappa, 1 Thera (Medtronic); 3 Afinity, 9 Identity (St Jude); and Unicamerals 5 Axios, 1 Kairos, 27 Pikos E,1 Pikos LPE (Biotronik); 3 Nexus, 1 Insignia (Guidant); 1 Easy (Medico); 2 Vitatron, 1 Preveil (Medtronic); and 2 Verity,1 Identity (St Jude) **Results:** There were neither interference and/or changes of the capture, oversensing of atrial or ventricular events nor inhibition of the pacemakers. **Conclusion:** These study could not detect any alteration in sensing, pacing, programación or inhibition in the pacemakers studied during a careful technical and electrocardiographic control.

P1081

Contemporary management of carotid artery stenosis: carotid endarterectomy is here to stay. Selection of the approach according to patient surgical risk.

M. Ferreira[1], R La Mura[1], E Ruslender[1], JC Parodi[1]. *[1]FLENI*

Objective: Carotid artery angioplasty and stenting (CAS) has been proposed as an alternative therapy for patients requiring treatment of carotid artery stenosis as opposed to the "gold standard" carotid endarterectomy (CEA). Intense debate regarding these therapeutic approaches has centered on their respective safety profiles. Despite multiple studies, no convincing evidence demonstrates the superiority or even equality of CAS to the proven safety, efficacy, and durability of CEA. This paper shows the experience of a group of vascular surgeons in patients with severe carotid artery stenosis, and provides a rationale that, CEA remains the preferred therapy for the majority of patients who require treatment of carotid artery stenosis. **Material and methods:** A retrospective, nonrandomized review of patients undergoing CEA or CAS at FLENI in Buenos Aires was done. From May 2004 to May 2007, 230 patients were treated including 29 CAS and 201 CEA. The patients fulfilled the following inclusion criteria: symptomatic carotid stenosis of at least 50 percent of the luminal diameter or an asymptomatic stenosis of at least 80 percent. CEA was the first therapeutic consideration in all patients. CAS was reserved for high-risk patients. Patients were evaluated by cardiologists and independent neurologists for preoperative selection and postoperative follow up. The primary end point was a composite of death, any stroke, or myocardial infarction. **Results:** The average age was 65.6 years (range 41–91 years) 48 were women. In the endoluminal group, 96.5% of the patients were symptomatic, while in endarterectomy group 51.7%. In the endarterectomy group, patients were treated under general anesthesia. Patch and shunt were used routinely. The procedure was monitored by transcranial Doppler monitoring. In the endovascular group stent was placed in all the cases, using reversal of flow system as a cerebral protection device. Mortality was not registered in any group. The stroke rate in the endarterectomy group was 0.58, without any stroke in the endoluminal group. Median CAS and CEA length of stay was 1 day. In the endarterectomy group, two patients developed a transient neurological event that reverted completely. Other two patients developed hyperperfusion syndrome without evidence of intracerebral hemorrhage. Two patients developed a non-Q MI (one in each group). During the mean follow up of 23 months, the rate of reestenosis was of 1.5% in the endarterectomy group of those only one required to be treated. **Conclusion:** It is important to define the patient's risk to benefit him at the moment to decide their treatment. A multidisciplinary team evaluation, next to a strict preselection, a meticulous either conventional or endovascular technique in a high medical tech operating room allow us to offer a safety treatment to the patients with severe carotid artery stenosis in risk of neurological complications. Main finding of stenting trials that CAS does not appear to be inferior to CEA is not a license for the widespread use of stenting. It should indicate that patients, before stenting, need to be assessed as thoroughly and appropriately as those being considered for endarterectomy.

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The resistant hypertension genotypes of the population resident in Rio de Janeiro

F.D. Vilela[1], P.R. Benchimol-Barbosa[1], C.C. Zeno[1], A.B. Lima[1], M. Barros[1], F.V. Campos[2], C.S, Miranda[2], G.N. Gobbi[2], J. Barbosa-Filho[2], I Cordovil[1]. *[1]Instituto Nacional de Cardiologia [2]Universidade Gama Filho*

Introduction: The Essential hypertension (EH) is a multifactor disorder determined by the interaction of environmental and genetic factors. Some patients with EH have a different response to the appropriate therapeutic (considered as 3 drugs or more, including a diuretic), what is called Resistant Hypertension (RH). The RH could be dependent on the genotypes, and the study of hypertension genes is leading to elucidate the mechanism of RH. **Objective:** The purpose of this investigation was to clarify the genotypes of RH in population of Rio de Janeiro/Brazil. **Methods:** We studied 181 subjects with EH, which were included in the protocol

of treatment of the ambulatory of high blood pressure, in a public institute of cardiology, in Rio de Janeiro/Brazil. The Ambulatory Blood Pressure Monitoring (ABPM) confirmed the diagnostic of RH in 27 subjects. In this group (N=27), the age varied from 39 to 79 years old, with 77,7% females. The mean systolic pressure in 24 hours varied from 212 mmHg to 132 mmHg and the mean diastolic pressure in 24 hours varied from 122 mmHg to 69 mmHg, both measured by ABPM. The following the renin-angiotensin-aldosterone system gene polymorphisms were studied genes like: M235T (Angiotensinogen), A1166C (Angiotensin II type 1 receptor), C344T (Aldosterone Synthase), A4582C (Mineralocorticoid receptor), and Angiotensin Converting Enzyme (ACE) gene (genotyping for insertion and deletion). They were verified using PCR performed by Perkin-Elmer 9600 device and the percentage of each allele and genotype were analyzed on this population. **Results:** The analysis of these polymorphisms demonstrated that in the M235T gene, the genotype frequency was 29,7% TT, 37% MT and 33,3% MM, with the allele frequency of 48% T and 52% M. In the A1166C gene we found 70,37% AA and 29,63% AC, with the allele frequency of 85% A and 15% C. For the C344T gene our results demonstrated the genotype frequency of 29,7% TT, 48,1% TC and 22,2% CC, and the allele frequency of 53% T and 47% C. The A4582C gene had 37% of GC, 26% GG and 37% CC, with allele frequencies of 44,4% G and 65,6% C. And the ACE gene had the genotype frequencies of 48,2% ID, 40,7% DD and 11,1% II; and the allele frequencies of 35% I and 65% D. **Conclusion:** In our study, We managed to identify the frequency of the polymorphisms and the alleles of the population with RH treated at the ambulatory of high blood pressure in the public institute of cardiology in Rio de Janeiro/Brazil.

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GLYCAEMIA AT ADMISSION ACCURATELY PREDICTS IN-HOSPITAL OUTCOME IN ACUTE CORONARY SYNDROME PATIENTS

S. Monteiro[1], S. Costa[1], F. Goncalves[1], P. Monteiro[1], L. Goncalves[1], M. Freitas[1], L. A. Providencia[1]. [1]*Coimbra University Hospital*

Introduction: High glycaemia at admission in acute coronary syndrome (ACS) patients is common and associated with an increased risk of in-hospital and post-discharge death, both in diabetics and non-diabetics. **Aim:** To evaluate, in an ACS population, the relationship between glycaemia at hospital admission and in-hospital mortality. Population and methods: Retrospective analysis of a database containing 1149 consecutive patients admitted to a single coronary care unit for acute coronary syndrome between May 2004 and May 2006. Our population was divided in four groups according to the quartiles of glycaemia at admission (Q1 <5.77, Q2 5.77–7.0, Q3 7.0–9.22, Q4 ≥9.22 mmol/L). **Results:** There were no significant differences between quartiles regarding gender, lipid profile, reperfusion strategies and coronary lesions. Patients with higher glycaemia at admission were older and had higher TIMI risk score, more previous hypertension, dyslipidemia, diabetes, previous treatment with insulin and oral glucose lowering drugs, acute myocardial infarction, heart failure, nephropathy and longer hospitalizations. Higher glycaemia at admission was strongly correlated with higher Killip class, high necrosis and inflammation biomarkers, STEMI, worse metabolic control and lower left ventricle ejection fraction. Glycoprotein IIb/IIIa inhibitors, catecholamines and diuretics were more prescribed in Q4 patients, unlike beta-blockers. In-hospital mortality in the four groups was 0.7%, 5.2%, 5.5%, and 7.6%, respectively (p< 0.001), while morbidity was 1.1%, 5.3%, 5.9% and 8.2%, (p=0.002). After multivariate regression analysis (figure 1), age≥ 72.5 years, Troponin I ≥ 6.1 mg/dl and Killip class > 1 at admission were independent predictors of in-hospital mortality. Hyperglycaemia at admission had a good correlation with fasting glycaemia (r- 0.48) and glycated haemoglobin (r- 0.44). **Conclusion:** These data suggest that, in an ACS population, glycaemia at admission is associated with an increased risk of death and in-hospital complications. Hyperglycaemic patients must be put under close surveillance and optimized therapy, in order to improve their worse in-hospital outcome.

MULTIVARIATE ANALYSES

Variables	Beta	p-Value	OR
Age>=72.5	**1.131**	**0.003**	**3.097 (1.454–6.596)**
Fasting glycaemia >= 144.5	0.761	0.100	2.14 (0.864–5.302)
Troponin I>=6.08	**1.235**	**0.011**	**3.44 (1.327–8.917)**
Diabetes	0.279	0.504	1.322 (0.583–3.001)
Killip class > 1	**1.027**	**0.008**	**2.791 (1.307–5.961)**
STEMI	0.033	0.932	1.033 (0.488–2.19)

c-Statistic 0.814

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Usefulness of multislice computed tomography in the detection of non-suspected coronary and myocardial diseases

M. Falconi[1], D. Perez De Arenaza[1], P. Oberti[1], P. Pollono[1], A. Fernandez[1], F. Abramzon[1], L. Grinfeld[1], R. Garcia Monaco[1], J. Krauss[1], A. Cagide[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction: Multislice Computed Tomography (MSCT) is a useful tool in the diagnosis of coronary artery disease (CAD). However, patients derived for this study may have alternative and unsuspected coronary or myocardial diseases. **Objective:** to evaluate the prevalence of unsuspected findings in patients derived to MSCT test for evaluation of known or suspected CAD. **Methods:** we analyzed data from 61 consecutive patients derived for MSCT scan for evaluation of coronary anatomy. A 64 rows MSCT (Toshiba) was used, and all patients were premedicated with oral and/or intravenous betablockers to achieve a heart rate < 65 beats/minute. Intravenous contrast was used at a flow rate of 4.5–5 ml/sec. All patients gave written informed consent. **Results:** 61 patients were included, 39 (64%) male, mean age 57±17 years (range 16–84 years). Normal coronary arteries were found in 9 (15%) patients, non significant atherosclerotic lesions in 25 (41%) and at least one vessel with >50% obstruction in 27 (44%) patients. Unsuspected findings were found in 6 patients (10%): one patient with Kawasaki like coronary lesions, one patients with asymmetric hypertrophic cardiomyopathy, one patient with interatrial septal defect, one patient with findings compatible with non-compacted cardiomyopathy, one patient with bicuspid aortic valve associated with ascending aortic aneurysm and one patient with a myocardial bridge involving the left anterior descending artery. All these diagnosis were confirmed by alternative methods (echocardiography, cardiac magnetic resonance or coronary angiography). **Conclusions:** although MSCT is a useful tool for the diagnosis of known or suspected CAD, information derived from this technique is not limited to coronary lesions. High quality anatomical and functional information derived from MSCT is useful in other diagnostic situations, as unsuspected non-CAD findings are not infrequent in this population.

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ASSOCIATION BETWEEN PROGNOSTIC FACTORS IN SEVERE IDIOPATIC DILATED CARDIOMYOPATHY AND FIBROSIS EVALUATED BY CARDIOVASCULAR MAGNETIC RESONANCE

M. L. O. Mugnaini[1], D.B. Précoma[1], P.R. Schvartzman[2], L.A.Z. Moura[1], S.H. Barberato[1], G. Lemke[1], P.R. Brofman[1]. [1]*PUC PR* [2]*HOSPITAL MOINHOS DE VENTO*

Introduction: The use of magnetic resonance to evaluate myocardial fibrosis is well estabilished. However, its prognostic value in patients with dilated cardiomyopathy it is not totally comprehensible. **Objective:** To evaluate the probability of association between the presence of myocardial fibrosis (detected by magnetic resonance) and prognostics factors of idiopatic dilated cardiomyopathy. **Methods:** There were studied 21 patients with idiopatic dilated cardiomyopathy. These patients were submitted to magnetic resonance (to evaluate myocardial fibrosis, ventricular function and morphology) and 24 hour ambulatory eletrocardiographic monitoring (Holter – to evaluate ventricular arrhythmias). **Results:** Myocardial fibrosis was detected in 52% of patients with idiopatic dilated cardiomyopathy, and midwall fibrosis was the most common pattern found (54,54%). There is no association between demographic characteristics (sex and age) and fibrosis' presence (p=1,00 e p=0,67, respectively). There is no association neither between ejection fraction (calculated by echocardiography and by magnetic resonance) and myocardial fibrosis (p=0,81 e p=0,19, respectively), nor between left ventricle diastolic diameter (measured by echocardiography and by magnetic resonance) and fibrosis (p=0,39 e p=0,46, respectively). Seventy six percent of the patients presented complex ventricular arrhythmias, however, there is no significant association between this data and myocardial fibrosis' presence (p=0,14). **Conclusion:** In this study there was not significant association between myocardial fibrosis' presence and prognostic factors of idiopatic dilated cardiomyopathy.

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Does symmetry of the aortic outflow velocity profile reflect contractile function in coronary artery disease ? An automated analysis using mathematical modelling

M. Cikes[1], H. Kalinic[2], A. Baltabaeva[3], S. Loncaric[2], C. Parsai[3], J. Separovic Hanzevacki[1], I. Cikes[1], G. Sutherland[3], B, Bijnens[1]. [1]*University Hospital Centre Rebro, Zagreb, Croatia* [2]*Faculty of electrical engineering and computing, Zagreb, Croatia* [3]*St Georges Hospital, London, United Kingdom* [4]*Faculty of electrical engineering and computing, Zagreb, Croatia* [5]*St Georges Hospital, London, United Kingdom* [6]*University Hospital Centre Rebro, Zagreb, Croatia* [7]*University Hospital Centre Rebro, Zagreb, Croatia* [8]*St Georges Hospital, London, United Kingdom* [9]*University Hospital Centre Rebro, Zagreb, Croatia*

Introduction: In LV failure, it has been observed that a lower velocity is often combined with a slower increase in velocity, a more rounded curve form and peak velocity later in systole. From isolated cells, it was suggested that chronic ischemia decreases but prolongs contraction. Additionally, severe aortic stenosis shows, higher but often prolonged outflow velocities. Outflow velocities represent the pressure gradient between LV and aorta and thus influenced by either of them. However, a dynamically increasing resistance in the vessel tree reduces late velocities while late increases should be related to prolonged contraction. We assumed a relationship between the morphology and duration of aortic outflow velocities and myocardial function in coronary artery disease (CAD). **Methods:** We studied 85 patients (pts) undergoing routine dobutamine stress echo (DSE) (40 male, 45 female, mean age 62.4±9.6 years). Pts were divided in 2 groups: group A: 37 pts without evidence of CAD and/or normal DSE, group B: 48 pts with angiographically proven CAD and/or positive DSE. Automated analysis using modeling was applied on digitally stored aortic CW traces. Time from onset of aortic flow to peak flow (Tmax) and ejection time (ET) were calculated both directly from the baseline CW traces as well as from the modeled signal (Tmax mat, ET mat). The asymmetry measure (asymm) was measured from the modeled signal and was defined as the the difference between the areas of the right and left half of the signal. A normal curve was more triangular in shape, with an early peak, while curves of pts with CAD showed typical broadening with a much more rounded shape and later peak. *p<0,02 vs. normal. †p<0,05 vs normal, ‡p<0,02 vs group A. **Results:** Tmax and Tmax mat were the longest in group B, followed by group A and normals (Tmax: 68,54±15,72 ms*, 65,97±16,96 ms†, 58,61±12,46 ms; Tmax mat: 74,26±18,36 ms‡, 65,07±14,43 ms*, 65,79±13,68 ms, respectively). Tmax/ET was the largest in group B (0,23±0,06‡*), followed by group A (0,21±0,06) and normals (0,20±0,04), similarly to Tmax mat/ET mat (group B: 0,24±0,55‡*, group A: 0,20±0,05; normals: 0,21±0,04). Asymm. was the largest in group A: 0,35±0,07, followed by normals (0,32±0,06) while group B had the most symmetrical profiles: 0,31±0,08‡. A broadened profile (symm<0,25) was present in 2,6% normals, 5,4% of group A pts and 25% of group B pts. **Conclusion:** These data show that a symmetrical, late peaking aortic outflow velocity profile is present in an important percentage of CAD patients which might be related to a reduction in global myocardial contractility. Automated analysis using modelling can be used to categorize Doppler data and provides additional clinical information on the functional impact of CAD.

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Absence of electrocadiographic abnormalities in children infected with Trypanosoma cruzi from a rural area of Argentina.

C.D. Lacunza[1], M. Gonzalez[1], A. Alberti[2], R. Cimino[2], V. Pereyra[2], R. Zacca[1], V. Orellana[1], M.A. Basombrío[1], J. Nasser[2], P. Diosque[1]. *[1]Unit of Molecular Epidemiology (UNSa-CONICET-IRD), Institute for Experimental Pathology, Faculty of Health Sciences, National University of Salta, Argentine [2]Chair of Biological Chemistry, Faculty of Natural Sciences, National University of Salta, Argentine*

Thirty children, from Chacabuco department, province of Chaco, between 5 and 14 years old were diagnosed as infected by T. cruzi by conventional serology techniques: Enzime-Linked ImmunoSorbent Assay with recombinant antigens (ELISAr) and Indirect Hemmagglutination (IHA). The reactions were done following standardised instructions from Wiener lab. Subjects were also physically examined and studied by Polymerase Chain Reaction (PCR) according to Britto (1993, with minor modifications) and electrocardiogram (EKG) (a single channel electrocardiograph was used, at 25 mm/s velocity and 1 cm/mv sensitivity). The ECG traces were interpreted by two independent cardiologist. All these children were positive for the two serological tests performed and were treated with benznidazol (5 mg/Kg/day) for 60 days. According to the PCR results only 16 out of 29 (55, 17%) were positive before treatment and after 9 month treatment, all the samples were negative (0/20). However ELISAr reactions were positive both before and up to 2 years post treatment, although the mean OD was reduced from 2.83 ± 0.29 to 2.37 ± 0.79 ($p>0.4$). Regarding IHA, results after 19 months post treatment showed 6 patients maintaining they original titers, 3 with a reduction of 1 fold and 5 with a reduction of 2 fold. EKG were normal, in 29 out of 29 patients, before treatment and in 26 of out 26 patients, after a 9-month follow-up. Absence of electrocardiographic alterations in children of this area differs from reports in other regions. In the northern part of Goias State in central Brazil, de Andrade AL (1998) reported a prevalence of ECG abnormalities of 11.3% among seropositive children between 7 and 12 years old. This epidemiological pattern (absence of electrocardiographic alterations) could be related to different virulence isolates circulating in the endemic are under study. Diosque et al. (2003) characterized these isolates as belonging to T. cruzi I, IId and IIe, with and apparent association between T. cruzi IId and humans. Clinical pictures observed in this children population reinforce the hypothesis that a rapid and early etiological treatement could be very useful in order to avoid possible future chagasic damage.

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HEMODYNAMIC AND AUTONOMIC RESPONSES TO A MENTAL STRESS TEST AND TO AN ISOMETRIC EXERCISE TEST IN OFFSPRING OF HYPERTENSIVE PARENTS.

J. V. Francica[1], M.V. Heeren[1], C. Mostarda[2], M. Sartori[1], M. Tubaldini[1], R.C. Araújo[1], M.C. Irigoyen[2], K. De Angelis[1]. *[1]HUMAN MOVEMENT LABORATORY, SAO JUDAS TADEU UNIVERSITY, SAO PAULO, BRAZIL [2]HYPERTENSION UNIT, HEART INSTITUTE (INCOR), UNIVERSITY OF SAO PAULO MEDICAL SCHOOL, SAO PAULO, BRAZIL*

Family history of hypertension is an important predictive factor for hypertension and is associated with metabolic and hemodynamic abnormalities. The objective of the present study was to evaluate the cardiovascular responses to a mental stress test (MST) and to a maximal isometric exercise test (MIET) in offspring of hypertensive parents. Male offsprings (18–30 years old) of normotensive parents (ON, n=6: 70±4 kg, 174±2cm) and hypertensive parents (OH, n=9: 77±5kg; 174±3cm) were submitted to systolic (SAP) diastolic (DAP) arterial pressure measurements and heart rate (HR) monitoring before, during and after (10 minutes): a mental stress induced by a 3-min Stroop color word test, and a maximal isometric exercise test performed in an isocinetic dinamometer. The heart rate variability was analysed in the time and frequency (FFT) domains. The SBP (ON:113±2 vs. OH:116±3mmHg), the DAP (ON:73±3 vs OH: 75±4mmHg), the HR (ON:76±2 vs. OH:74±3bpm) and the total pulse interval (PI) variance (ON: 4036±423 vs. OH: 3196± 487ms2) were similar between groups at rest. However, there were an increase in low frequency (LF) component of PI (ON: 62±3% vs. OH: 79±3%) and an reduction in high frequency (HF) component of PI (ON: 38±3 vs. OH: 21±3%), as well as an increase in LF/HF (ON: 1.75±2 vs. OH: 4.7±0,8) in OH group as compared to ON group at rest. OH subjects (93±5bpm) presented an increase in the HR observed in the first minute of the MST in relation to ON subjects (78±2bpm) and in comparison to resting HR of both groups. In the post-MST, HR was higher in OH group (79±3 bpm) than in the ON group (68±3 bpm). Correlations were obtained between the HR in the first minute of the MST and: a) the post-test HR ($r=0.8$); b) the SBP in the minute 3 of the MST ($r=0.8$); c) the total PI variance ($r=-0.68$). During and after the MIET no differences were observed in SAP, DAP and HR between studied groups. However, after both tests (MST and MIET) there were and increase in LF component of PI and in LF/HF only in ON group in relation to its basal values. The results showed that young offspring of hypertensive parents despite did not present AP increase at rest demonstrated: increased sympathetic and reduced parasympathetic cardiac modulation at rest; exacerbated chronotropic responses to a mental stress test, that was negatively associated with the basal HRV; after a mental or a maximum isometric exercise test did not showed an enhacement in cardiac sympathetic modulation, as observed in normotensive offsprings, suggesting a pre-sympathetic overactivity in hypertensive offsprings. In conclusion, these results suggesting an application of these maneuvers of sympathetic stimulation to detect early physiological alterations that can be important in the management of the hypertension development risk in genetically predisposed populations.

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Population awareness on cardiovascular risk factors: a developing country experience PrevenAção

A Avezum[1], H Guimarães[1], A Brasileiro[1], P Esteves[1], A Neto[1], M Bertolami[1], C Serrano[1], L Maia[1], A Marco[1], F Nobre[1]. *[1]Brazilian Cardiology Society*

Introduction: The vast majority of actions in prevention is effective and applicable even in limited-resource scenarios. The gradual implementation of evidence-based interventions allows the most relevant contribution to the prevention and control of CVDs. Integrated actions in all Latin America, conducted by Medical Societies, Foundations, Government and Private Companies, represent the success of such actions.PrevenAção Program was developed to brigde-up scientific information to implementation in clinical practice in order to reduce cardiovascular diseases. **Purpose:** to evaluate the spontaneous awareness of the Brazilian population on cardiovascular risk factors (CRF) in comparison to their clinical impact from the InterHeart Study in Latin America and knowlegde about recommmended guidelines values related to CRF in order to guide future populational interventions to reduce CV death. **Methods:** A questionnaire involving questions related to CRF and mortality were applied between january to september 2006, by means of a structured interview, 2,012 persons included, evaluating spontaneous knowledge about mortality cause and the following CRF: smoking,hypertension, diabetes, obesity, lipid abnormality, physical activity,stress/depression, and consumption of vegetables/fruits. A sample size calculation was performed in order to assure a sample error of 2% being representative of the Brazilian population, concerning geographical area, gender, social-economic status (SES) and age.About 48% were male and median age was 37 yrs. **Results:** Smoking was the principal CRF related to cardiovascular disease (CVD) according to the population knowledge: 31%,stress/depression 23%, hypertension 18%, lipid abnormality 10%, diabetes 5%, physical inactivity 17%,abdominal obesity 13%,consumption of fruit/vegetables 10% and unknown 19%. The degree of awareness was lower according to the SES (28% for SES D and E), age between 18–24 years old (27%) and Northwest geographic area (27%). In comparison with the INTERHEART LA, risk factors as lipid and obesity have a large impact to cause acute myocardial infarction(AMI). The vast majority of population is unaware about the recommended values of important risk factors. Only 4%, 5% respectively male and female provided a correct answer regarding HDL cholesterol and 10% regarding LDL-cholestrerol. Mortality data extracted from the Brazilian Registry(2005) compared with the spontaneous knowlewdge of population showed a significant difference of perception.**Conclusion:** There is a clear and substantial lack of perception about robustly known CRF among Brazilian population. Despite the availability of scientific evidence of CRF, from the population standpoint, little has been done in order to reduce the CVD burden.This observation lead us to re-think the current strategies to CVD prevention in the developing world, specially due to the continuous,crescent and epidemic proportion of deaths and disabilities in such regions. Knowledge about recommended values according to currents guidelines are poorly understood by the population, demonstrating the insufficiency of scientific information dissemination to the population

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264 DAYS ON BIVENTRICULAR MECHANICAL ASSISTANT SUPPORT AS BRIDGE TO TRANSPLANTION IN A 31 MONTH OLD PATIENT

H. Vogelfang[1], G. Naiman[1], A. Villa[1], A. Charroqui[1], G. Moreno[1], R. Magliola[1], L. Quiroga[1], G. Burlli[1], D. Haag[1], M. De La Riba[1]. *[1]Cardiac Trasplant Unit. Hospital" [2]Prof.Dr.J.P.Garrahan" [3]. Argentina*

Background: In August 2004 a 24 month old baby had been listed for heart transplantation due to a Restrictive Cardiomyophaty. Heart failure and systemic repercussion were controlled with medical treatment. Pulmonary pressure levels were 40%–50% of systemic levels. **Matherial and Results:** After 750 days in waiting list, Pulmonary Hypertension had reached systemic levels. Concomitant signs of worsening cardiac output and systemic perfusion and early signs of organ dysfunction, despite maximal medical management, were criteria for a biventricular assit device implantation. A 30 ml. size pump with left atrial and aorta cannulae had been implanted for supporting left ventricle and a 25 ml. size pump and right ventricle and pulmonary artery cannulae had been implanted for supporting right ventricle. Indication of assistance was not only for bridging to trasplantation. The aim of implanting the biventricular assistance device was to achieve reduced levels of pulmonary pressure and the improvement of organ dysfunction, too. Patient was extubated 48 hs. after implant and anticoagulation therapy with heparin was started. Manteinance was done with oral anticoagulation, antiaggregation and antiadhesion drugs. Early mobilization and phisyotherapy had been important factors taken into consideration for the treatment. Permanent psychological assesment was established to improve this already stressful experience allowing parents and patient to have a more comprehensive approach to the situation. No psychological disorders had been detected. Pulmonary pressure had decreased to 40% after 45 days of assistance. Organ function and nutritional situation had been restored. Despite infections and anticoagulation disorders, no pump and cannulae changes were required. After 264 days a suitable donor had appear and heart trasplantation had been performed. Cannulae and pumps had been explanted with the heart after establishing by-pass. With the begining of the immunosupression therapy a severe infection had been developed. Positive blood cultures for acynetobacter. Lost of tissular substance in the chest wall due to necrotic areas where cannulae had been placed required a plastic surgical treatment, covering contiuity solution areas with abdominal muscles flaps. Catheterism shows pulmonary pressure 40% of systemic; normal coronary arteries; good cardiac function and no rejections signs in the anatopathological study. Sixty days after trasplantation the patient had been discharged. **Conclusion:** a 31 month old girl, with restrictive cardiomyophaty, organ dysfunction and pulmonary hypertension, in systemic levels, had been successfuly assisted during 264 days with a biventricular mechanical support, reducing pulmonary hypertension and restoring organ function. The Berlin Heart Excor Assist Device may be a successful resource for bridging children to trasplantation even during a long term assistance.

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NORMOTHERMIC CARDIOSURGERY. THE COMPARATIVE ANALYSIS OF HEMODYNAMIC IN AORTO-CORONARY BYPASS SURGERY

R. S. Ovchinnikov[1], L.A. Bockeria[2], V.A. Lischouk[2], I.U. Sigaev[2], D.S. Gazizova[2], L.V. Sazukina[2], V.E. Volgushev[2]. *[1]Clinic of emergency and cardio-vascular surgery [2]Scientific Center of cardio-Vascular Surgery, A.N. Backulev*

Objectives: In recent years an actual theme is carrying out hemodynamic parameters in case of normothermal or hypothermal cardio surgery. Aim of study: carrying out changes in

hemodynamic parameters in case of using different types of cardioplegia and artificial blood circulation in normothermal or hypothermal cardio surgery. **Methods:** In 2000–2007 years in study where we used mathematical model and monitor-computerized system "Aibolit" were enrolled 270 patients with ischemic heart disease, whom were operated in Baculev Institute. First group included 150 patients, whom were performed pharmacohypothermal cardioplegia with crystalloid solution #3 and hypothermal artificial blood circulation. Second group included 60 patients, whom were performed pharmacohypothermal cardioplegia with solution "Custodiol" and hypothermal artificial blood circulation. Third group included 60 patients, whom were performed normothermal artificial blood circulation and normothermal cardioplegia with normothermal solution for cardioplegia. **Results:** Cardiac index after cardiopulmonary bypass (CB): first group 2.5±0.1 l/m2, second group 2.4±0.4 l/m2, third group 3.1±0.4 l/m2 ($p<0.05$) (picture 1). Increase of LVSWI after cardiopulmonary bypass: first group 0.1±0.002 din*cm/m2, second group 0.8±0.003 din*cm/m2, third group 1.2±0.002 din*cm/m2 ($p<0.05$). Time of cardiopulmonary bypass: first group 146.4±9.3 min, second group 119.5±10.1 min, third group 101.8±9 min ($p<0.05$). **Conclusion:** Normothermal cardio surgery with help of normothermal artificial blood circulation and normothermal cardioplegia causes less pathological changes in hemodynamic, comparison to hypothermic group. So, this method can improve prediction and can be recommended for complicated patients.

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Hypertension Screening with a New Digital Blood Pressure Device Named "Rastreometer"

A.D.M. Feitosa[1], V. R. Lafayette[1], L.B.N.C. Magalhaes[2], M.A.M. Gomes[3], **R. D. Miranda[4]**. *[1]RealCor - Portuguese Hospital [2]CentroCor [3]UNCISAL - Medical School [4]UNIFESP - Federal University of Sao Paulo*

Background: Effective hypertension diagnosis and control can reduce cardiovascular morbidity and mortality. Appropriated hypertension screening by health agents is an important strategy to provide that. With this background, a new screening digital equipment has been developed, the "Rastreometer". **Objectives:** Evaluate a new digital blood presssure equipment called Rastreometer, to be used by health agents as a hypertension screening device. **Methods:** The Rastreometer is a portable digital sphygmomanometer, that shows only if the blood pressure (BP) is normal (NBP) or abnormal (ABP) which cut-off used was >135mmHg, for systolic pressure, or >85mmHg, for diastolic pressure. The gold standard was the digital sphygmomanometer Omron 750CP. We enrolled 101 participants of both sexes and measured BP four times with each device. A questionnaire had been fulfilled by an observer. The BP used in this analysis was the mean value of the last three measurements and had been considered abnormal if the systolic pressure was >139 mmHg or the diastolic pressure was >89 mmHg. When the Rastreometer was used the blood pressure had been considered as abnormal if there was, at least, two ABP in the three last measurements. **Results:** In the whole group, sensitivity was 89.7%, specificity was 91.7%, positive predictive value was 88.6%, negative predictive value was 95.6% and Kappa was 0.789 ($p<0.001$). The accuracy was 91.1%. **Conclusion:** The preliminary evaluation of the digital Rastreometer suggests that it is an appropriated hypertension screening equipment with high sensitivity, specificity and a very good accuracy.

P1093

Latvian bifurcation lesion registry – IVUS results

A. Erglis[1], I. Kumsars[1], I. Narbute[1], D. Sondore[1], S. Jegere[1], A. Dombrovskis[1], A. Lismanis[1], I. Olina[1]. *[1]Latvian Centre of Cardiology, Pauls Stradins Clinical University Hospital*

Background: Stenting in bifurcation lesions still associates with high restenosis and target lesion (TLR) rates even in drug eluting stents (DES). **Purpose:** This study was performed to evaluate eight months follow-up IVUS results of our bifurcation lesion registry **Methods:** We investigated subgroup (n=62) of patients from ongoing bifurcation registry of 363 consecutive patients, in whom IVUS 8 months follow-up were performed. **Results:** In our group of interest lesions were located as follows: 51(82%) on LAD – diagonal 5 (8%) on LCX-marginal, 2(3%) on RCA, 4 (7%) LM. Both branch stenting were performed in 35 (56%), but only main branch stenting in 27 (44%) cases. All stents implanted were DES. If two stent strategy were used stent implantation technique were as follows: crush 20 (57%), provisional T 12 (34%), Cullote 3(9%). Lesion pre-treatment with CB in MB was performed in 17 (63%), but in SB in 6 (22%) cases in one stent group vs 11 (31%) and 6(17%) in two stent group p=ns. Final "kissing" balloon performed in 15 (56%) cases in one branch stenting and in 35 (100%) cases in both branch stenting p=0.07. There were no significant differences detected in terms of patients clinical characteristics in both groups. Eight months IVUS results showed no significant differences in terms of luminal measurements in both groups either in main or side branch (See Table).

TABLE. EIGHT MONTHS IVUS RESULTS OF MAIN BRANCH

Parameter	1 stent (n=27)	2 stents (n=35)	P value
Minimum lumen area (mm^2)	5.4±1.4	5.5±1.4	0.720
Minimum stent area (mm2)	5.5±1.4	5.7±1.3	0.504
%Neointimal volume obstruction (%)	0.6±2.1	0.9±3.2	0.734

Conclusions: Two branch stenting does not associates with significantly larger luminal dimensions after eight months in IVUS measurements

P1094

Amplitude of in-hospital glycaemia variation: a new prognostic marker in acute coronary syndromes?

S. Monteiro[1], N. Antonio[1], S. Costa[1], C. Negrier[1], R. Teixeira[1], F. Goncalves[1], P. Monteiro[1], L. Goncalves[1], M. Freitas[1], L. A. Providencia[1]. *[1]Coimbra University Hospital*

Introduction: Hyperglycaemia in hospitalized acute coronary syndrome (ACS) patients, with or without previous diagnosis of diabetes, is associated with an increased risk of death and in-hospital complications. However, little is known about the prognostic value of the amplitude of glycaemia variations during an ACS. **Aim:** To evaluate the relationship between the amplitude of glycaemia variation during hospitalization and in-hospital mortality and morbidity, in two ACS populations – with and without previous diagnosis of diabetes. Population and methods: Retrospective analysis of a database containing 1210 consecutive patients admitted to a single coronary care unit for acute coronary syndrome, between May 2004 and July 2007. Our population was divided in two subpopulations: patients with previous diagnosis of diabetes (n=386) and non-diabetics (n=824). Each of these subpopulations was divided in four groups, according to the quartiles of glycaemia variation (Q1 <14, Q2 14–30, Q3 30–60, Q4 ≥60 mg/dl). **Results:** There were no significant differences between groups regarding gender, risk profile, known coronary artery disease, reperfusion strategies and coronary anatomy. Patients with higher glycaemia variation were older and had higher TIMI risk score and Killip class at admission. Higher glycaemia variation was strongly correlated with higher necrosis and inflammation biomarkers, STEMI, worse metabolic control, lower left ventricular ejection fraction and lower hemoglobin and creatinine clearance. Glycoprotein IIb/IIIa inhibitors, catecholamines and diuretics were more prescribed in Q4 patients, unlike beta-blockers. Although no significant differences were found between groups regarding morbidity (2.6 vs 3.4 vs 2.9 vs 5.9%) and mortality (3.9 vs 3.4 vs 2.9 vs 2.9%), length of stay (4.37±2.4 vs 4.96±2.1 vs 5.26 ±2.5 vs 5.77±3.0; $p<0.001$) significantly increased along the quartiles of glycaemia variation. **Conclusion:** In both diabetic and non-diabetic ACS patients, amplitude of glycaemia variation during hospitalization is associated with a worse clinical profile, thus determining a longer length of stay. Therefore, this novel risk marker can be useful in the hospital management of ACS patients. Further studies are warranted to study its impact in post-discharge outcome in these populations.

	TIMI 3	STEMI	Killip class 2	ß-blockers	Trop. I	PCR	Creat. clearance	EF
	%	%	%	%	mg/dl	mg/dl	ml/min	%
Q1	18.2	17.3	5.5	87.2	12.0	3.0	71.0	55.6
Q2	19.3	20.6	11.2	85.5	22.0	5.0	73.8	53.4
Q3	31.4	32.2	19.3	84.1	42.0	7.0	68.2	49.8
Q4	30.0	34.0	24.3	75.4	46.0	9.0	65.7	48.9
p	< 0.001							

P1095

THE EFFECTS OF RESISTANCE EXERCISE ON PLASMA KINETICS OF AN ARTIFICIAL NANOEMULSION THAT BINDS TO LOW-DENSITY LIPOPROTEIN RECEPTORS

J. L Silva[1], C.G. Vinagre[1], A.T. Morikawa[1], R.C. Maranhao[1]. *[1]Heart Institute, Medical School Hospital, University of Sao Paulo*

Introduction: The exercise has shown beneficial effects on lipoproteins. The aim of this study was to evaluate the effects of resistance exercise on plasma removal from a cholesterol-rich nanoemulsion (LDE), similar to low-density lipoprotein (LDL). **Methods:** LDE plasma kinetic was evaluated in 22 men, 11 sedentary (S) and 11 resistance exercise trained individuals (RE). LDE nanoemulsion labeled with ^{14}C-cholesteryl ester (^{14}C-CE) and ^{3}H-cholesterol (^{3}H-C) was injected intravenously. After the injection, blood samples were collected in pre-determined intervals (5 minutes, 1, 2, 4, 6, 8 e 24 hours) and the radioactivity was determined in each sample. Plasma decay curves of the labels were traced and it was calculated their fractional clearance rate (FCR), by compartmental analysis. **Results:** Plasma levels of total cholesterol (RE: 166 ± 12; S: 158 ± 9 mg/dL), LDL-C (RE: 106 ± 13; S: 98 ± 7 mg/dL), HDL-C (RE: 39 ± 5; S: 44 ± 4 mg/dL) and triglycerides (RE: 102 ± 10; S: 79 ± 11 mg/dL), and the FCR-^{3}H-C (RE: 0.0360 ± 0.0070; S: 0.0384 ± 0.0130) were similar in both groups. However, FCR-^{14}C-CE was higher in resistance exercise group compared to sedentary group (RE: 0.0686 ± 0.0064; S: 0.0374 ± 0.0085; P<0,05). **Conclusion:** The higher FCR-CE showed that the practical of resistance exercise accelerates LDL plasma removal and, consequently, it can be important in coronary artery disease prevention.

P1096

Cardiac Magnetic Resonance in heterozygotes females with Anderson-Fabry disease

L. Dragonetti[1–2], C Rivas[2], F Corbella[2], E Eyheremendy[2], Adellfa[3]. *[1]Diagnóstico Médico [2]Hospital Alemán*

Anderson-Fabry disease (AFD) is a genetic disorder of glycosphingolipid metabolism caused by the deficiency in alpha-galactosidase A activity, resulting in accumulation of GB3 in cerebral, renal and cardiac tissues. The cardiac involvement is common and represents one of the severest aspects of this disease. **Purpose:** The aim of this study was to find out by CMR the occurrence of late-enhancement (LE) in the myocardium of AFD patients as a marker of myocardial fibrosis. **Method:** 23 heterozygotes females with AFD (mean 39,6 years) 19 were adults and 4 children, underwent cine and late gadolinium CMR on a 1,5T Somatom Symphony (Siemens – Erlangen-Germany). The study was conducted in a single-blinded prospective fashion. **Results:** Left ventricular hypertrophy was presented in 11of 19 adults (57,9%)and in a one girl, the rest of the children had normal cardiologic and CMR exams. Late enhancement of left ventricular myocardium was detected in 9/19 patients (47,4%). These areas were located at the basal and lateral segments of the left ventricle, in the middle of the myocardium but unlike myocardial infarction, it was not

sub-endocardial. Left ventricular mass was higher in late enhancement than negative patients. **Conclusion:** Cardiac MRI offers a rapid and non-invasive method for the detection of myocardial involvement in AFD. LE located in the basal and lateral wall of LV might be considered as a specific sign of myocardial fibrosis in AFD patients and could represent an important non-invasive marker of the severity of cardiac involvement considering that this abnormality is associated with cardiac failure, sudden death and arrhytmias.

P1097

EXERCISE TRAINING INDUCED AUTONOMIC IMPROVEMENT WAS ASSOCIATED WITH METABOLIC AND RENAL DYSFUNCTIONS ATTENUATION IN AN EXPERIMENTAL MODEL OF METABOLIC SYNDROME AND MENOPAUSE.

K. Ponciano[1], J Brito, I Sanches, M Heeren, MC Irigoyen, K De Angelis. [1]*Sao Judas Tadeu University* [2]*Hypertension Unit, Heart Institute (InCor), Medical School, University of Sao Paulo* [3]*Metrocamp University*

The mechanism that underlies the exercise training (ET) benefits in the cluster of physiological alterations observed in metabolic syndrome is not clear, mainly in post-menopausal women. The aim of this study was to investigate the effects of ET in metabolic, cardiovascular, autonomic and renal profile in ovariectomized rats (OVX) submitted to a fructose overload in drinking water. The OVX rats were divided into: sedentary control (SO) and sedentary fructose (FSO) and trained fructose (FTO, ET on a treadmill, 8 wks). The exercise capacity, body weight, plasmatic glucose (G) and triglycerides (TG) and the constant rate of glucose disappearance (KITT) during insulin tolerance test were measured. The baroreflex sensitivity was evaluated by the tachycardic (TR) and the bradycardic responses (BR). Vagal (VE) and sympathetic effects (SE) were evaluated by parasympathetic and sympathetic blockade. Renal function was evaluated through biochemistry parameters. Fructose overload induced reduction in exercise capacity and increase in body weight, G and TG in sedentary animals. The exercise capacity was increased in FTO group as compared to sedentary groups. The ET reduced body weight (FTO: 329±1.5 vs. FOS: 365±3.4 g), G (FTO: 81.20±0.99 vs. FOS: 90.08±0.85 mg/dL) and TG (FTO: 117.88±4.8 vs. FOS:194.50±5.11 mg/dL), insulin resistance and heart rate. The FTO group presented improvement in TR and BR in relation to sedentary groups. The VE was increased in FTO animals (76±12 bpm) as compared with OS (44±2 bpm) and FSO animals (45±7 bpm). The SE was enhanced in FSO rats (54±10 bpm) in relation to SO (31±6 bpm) and FTO rats (20±3 bpm). The ET induced reduced protein excretion in FTO group in comparison to FSO group. Correlations were obtained between: 1) VE with the KITT ($r=0.75$) and protein excretion ($r=-0.77$); 2) SE with BR ($r=-0.8$) and protein excretion ($r=0.84$); 3) TR and BR with protein excretion ($r=-0.77$ and $r=-0.82$). These results demonstrated that metabolic, cardiovascular, renal dysfunctions attenuation were associated with autonomic function improvement after training in OVX-fructose fed rats, suggesting an important role of exercise training induced-automonic improvement in the management of post menopausal women with metabolic syndrome.

P1098

BODY MASS INDEX AND IN-HOSPITAL ACS OUTCOME: THE MIDDLE IS THE PLACE TO BE!

S. Monteiro[1], S. Costa[1], F. Goncalves[1], P. Monteiro[1], L. Goncalves[1], M. Freitas[1], L. A. Providencia[1]. [1]*Coimbra University Hospital*

Introduction: Obesity is a major risk factor for cardiovascular disease and is associated with increased cardiovascular morbidity and mortality. Its prognosis value in acute coronary syndromes (ACS) remains controversial. **Aim:** To evaluate, in an ACS population, the relationship between body mass index (BMI) and risk factors, therapeutics strategies, in-hospital complications and mortality. Population and methods: Retrospective analysis of a database containing 1250 consecutive patients (pts) admitted to a single coronary care unit for ACS between May 2004 and December 2006. Our population was divided in four groups, according to the quartiles of BMI (Q1 18.5–24.5, Q2 24.5–27, Q3 27–29.4, Q4 ≥29.4 Kg/m2). **Results:** There were no significant differences regarding gender, TIMI risk score at admission, reperfusion strategies and prescribed medication. Patients in the lowest BMI quartile were the eldest and those with BMI≥29.4 Kg/m2 were the youngest. This later group had worse lipid profile, and higher fasting glucose, HbA1c and blood pressure. Higher BMI was associated with more previous hypertension, dyslipidemia, diabetes and previous treatment with insulin and oral glucose lowering drugs. Morbidity and mortality was higher in Q1 and Q4, in elder patients and those with severe cardiac damage and higher C- reactive protein, fasting glucose and creatinine. Patients without complications had worse lipid profile, creatinine clearance, systolic and diastolic blood pressure and ejection fraction. After multivariate regression analysis (figure 1), age≥70.5 years, BMI Q1 and Q4 and Killip class >1 were independent predictors of in-hospital mortality and complications. On the other hand, BMI Q2 and Q3 were independent predictors of good prognosis. **Conclusion:** Obese patients with acute coronary syndrome are younger and have a higher risk profile. BMI has a good correlation with risk profile, being intermediate quartiles independent predictors of more favourable prognosis, unlike low and high-end ones.

MULTIVARIATE ANALYSES

Variables	p-Value	IC 95% of OR
Female	0.651	(0.627–2.111)
Age>=70.5	**0.001**	**(1.735–7.412)**
Diabetes	0.119	(0.882–3.035)
Hipertension	0.402	(0.659–2.832)
Killip Class>1	**<0.001**	**(1.78–6.018)**
TIMI>3	0.732	(0.561–2.274)
Q2 vs Q1	0.057	(0.166–1.027)
Q3 vs Q1	*0.017*	*(0.146–0.828)*
Q4 vs Q1	0.471	(0.361–1.602)

c-Statistic 0.793

P1099

Anaemia and renal failure – a deadly duet in Acute Coronary Syndromes

S. Monteiro[1], S. Costa[1], F. Goncalves[1], P. Monteiro[1], L. Goncalves[1], M. Freitas[1], L. A. Providencia. [1]*Coimbra University Hospital*

Introduction: Anaemia and renal failure are common comorbidities in patients with acute coronary syndrome (ACS), being associated with adverse outcomes. Aim: To determine, in an acute coronary syndrome (ACS) population, the impact of anaemia and renal failure regarding in-hospital mortality. **Population and methods:** Retrospective analysis of a database containing 475 patients consecutively admitted to a single coronary care unit for ACS between May 2004 and December 2006. Our population was divided into two groups: A - patients with (n=249), and B - patients without anaemia and renal failure (n=226). **Results:** Group A patients were more elderly and had more frequently higher TIMI score, diabetes, heart failure, valve disease and previous myocardial infarction, stroke, nephropathy or peripheral neuropathy. These patients had more severe acute events, showed by higher Killip class, peak levels of necrosis and inflammation biomarkers, worse metabolic control, lower left ventricular ejection fraction and longer hospitalization. Morbidity and mortality were significantly higher in this group. After multivariate regression analysis (figure 1), Killip class >1, BMI < 24.5 Kg/m2 and the association anaemia and renal failure were independent predictors of in-hospital mortality. **Conclusion:** In ACS, anaemia and renal failure is associated with a worse clinical profile, being an independent predictor of in-hospital mortality.

MULTIVARIATE ANALYSES

Variables	p-Value	Beta	OR	IC 95% of OR
Female	0.477	0.382	1.465	(0.512–4.192)
Diabetes	0.799	0.141	1.152	(0.389–3.412)
Killip class > 1	**0.034**	**1.123**	**3.074**	**(1.087–8.698)**
BMI < 24.5	**0.021**	**1.242**	**3.464**	**(1.203–9.971)**
Anaemia + Renal failure	**0.035**	**1.659**	**5.254**	**(1.126–24.515)**

c-Statistics 0.815

P1100

Using a fiber and phytonutrient combination therapy to control hypercholesterolemia in an African American community

L. Njord[1], R. Njord[1], W. Cooper[2], PJE Verdegem[1]. [1]*Unicity International, Orem, UT, USA* [2]*WellStar Kennestone Hospital, Atlanta, GA, USA*

Introduction: African Americans living in the American south are the highest risk ethnic group for heart disease, the leading cause of mortality in the United States. Currently, statin medications are the most common intervention used by physicians to mitigate hypercholesterolemia. There are some patients who cannot or will not take statin medications due to associated side-effects or desire to use diet-based products to improve health. This study evaluates a fiber and phytonutrient combination therapy to mitigate moderate hypercholesterolemia in an African American population in Roswell, GA. **Methods:** 85 subjects were enrolled from an African American community living in Roswell, GA. Each participant added the supplement containing a total of 6.6 g of soluble dietary fiber, 1.67 g phytosterols, 12 mg policosoanol, 25 mg Chrysanthemum morifolium and a mixture of vitamins and minerals close to the RDA level to their diet, split into 2 portions taken shortly before their two largest meals. Participants' lipid levels were evaluated at four, eight and twelve week intervals. They were advised not the change their lifestyles, including diet. **Results:**

		week 4					week 8					week 12				
Parameter	Subgroup	BL	t=4	N	%	p	BL	t=8	N	%	p	BL	t=12	N	%	p
TC	Total	197	196	85	-0.5	ns	189	214	55	13.2	<0.001	180	202	39	12.2	<0.01
TC	>200	241	228	42	-5.4	<0.05	238	251	23	5.5	ns	239	236	14	-1.3	ns
HDL	Total	47	45	85	-4.3	ns	45	48	55	6.7	ns	44	44	39	0.0	ns
HDL	<40	31	36	32	16.1	<0.01	32	41	24	28.1	<0.001	33	42	21	27.3	<0.01
TG	Total	158	154	85	-2.5	ns	157	119	55	-24.2	<0.01	154	128	39	-16.9	ns
TG	>150	261	189	33	-27.6	<0.01	261	159	21	-39.1	<0.001	277	149	14	-46.2	<0.01
LDL-M	Total	133	122	85	-8.3	<0.01	135	126	55	-6.7	ns	125	130	39	4.0	ns
LDL-M	>130	166	139	43	-16.3	<0.001	167	142	30	-15.0	<0.0001	170	166	16	-2.4	ns
LDL-M	>160	191	137	20	-28.3	<0.0001	189	155	14	-18.0	<0.01	191	167	8	-12.6	ns

Discussion and conclusion: The enriched fiber and phytonutrient dietary supplement (marketed worldwide as Bios LifeTM) is effective in lowering LDL-M and triglyceride levels while raising HDL levels simultaneously. The test product was shown to be most effective in groups with HDL levels < 40 mg/dl, TG levels > 150 mg/dl and LDL-M levels > 160 mg/dl in 8 to 12 weeks, providing patients an alternative for cholesterol control. This product may prove to be a clinically relevant alternative to pharmaceutical lipid lowering for moderately raised lipid levels.

P1101

CORONARY ACUTE SYNDROME IN PATIENTS ADMITTED TO THE EMERGENCY IN THE CENTRAL HOSPYTAL OF THE SOCIAL INSTITUTE PREVISI®N

F. Fernandez Chamorro[1], C. Saldivar, L. Fatecha, M. Centurión, J. Paredes, L. Bell, A. Villamayor, V. Marmol, J. Gonzalez, S. Aguirre. [1]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [2]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [3]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [4]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [5]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [6]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [7]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [8]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [9]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS* [10]*CARDIOLOGIA-HOSPITAL CENTRAL DE IPS*

Objectives: 1- Prevalence of Coronary Acute Syndrome (CAS) in patients(pt) admitted to the Emergency Department classified by sex and age. 2- To assess the therapy they received

according to the type of CAS diagnosed. 3- Identify the main risk factors related to high risk non-ST elevation coronary acute syndrome (HR Non-STECAS). **Methods:** Prospective, observational study of consecutive patients admitted to the Emergency Department of the IPS Central Hospital from June 1st to December 31st, 2006. Inclusion criteria were: confirm diagnosis of CAS and technical data sheet fulfilled by trained physicians. Exclusion criteria: Any doubts on CAS diagnosis or impossibility to collect the technical data sheet. Statistical analyses were perform using the SPSS 13 version, software. **Results:** Of 33813 patients admitted to the E.R., 2629 had cardiac diseases, 266 of them were diagnosed of CAS and 24 were excluded according to exclusion criteria. Thus, 242 patients was the study population. Classified by sex: male/female M/F 123(50,8%)/119(49,2%) p:ns. Subgroup: ST-ECAS 55pt, M/F 37(67,2%)/18(32,8%) p: 0,005, RR 1,99.; HR nomSTECAS 124 pt, M/F 62/62, LR nomSTECAS 63 pt, M/F 24(38%)/39(62%) p: 0,01, RR 0,6. Classified by age: M/F 66,2 ±13,3/67,1 ±12,2; ST-ECAS M/F 69±12,5/67±12,5; HR nomSTECAS: M/F 68±12,3/68±11,7; LR nomSTECAS M/F 69 ± 12,5/66 ± 13,1. Administered therapy: Drug therapy: ST-ECAS Enoxaparine 100%, Atorvastatin 100%, AAS 96,3%, Clopidogrel 91%. HR nomSTECAS: Enoxaparine 99%, AAS 93%, Atorvastatin 91%, Clopidogrel 81%. Reperfusion therapy: ST-ECAS: 29/55(52,7%); primary angioplasty (PTCA) 2/55(3,6%), both with STEMI of the LAD territory. Thrombolysis (27pt): with reperfusion criteria 19/27(70,3%), without reperfusion criteria 8(29,7%) p 0,02, RR 2,38. Patients with reperfusion criteria, 16/19(84%) received sterptokinase between the first 6 hr. Then between 6 to 12hr 2/19(10,5%), 12–24hs 1/19(5,5%). Non thomobolized (26pt): out of window period: 16/26(61,5%), absolute contraindications: 7/26(27%), relative contraindications: 3/26(11,5%). Overall Mortality: 5/55(9%): of 29 who underwent reperfusion therapy: 3 died, and of 26 non thrombolized 2, p NS. In HR nomSTECAS the stronger risk factor related to coronary lesion identified by angiography was: troponin I, p: 0,02. Random combination of 2 risk factors: troponina I + ECG=89,5% and Troponina I + Persistent Angor=83,5%. **Conclusions:** The most frequent diagnosis was HR nomSTECAS. Male sex prevalence is significant for the STECAS and female for LR-nomSTECAS. Drug therapy for SCA in the E.R of our hospital is according to the current international guidelines. Reperfusion therapy is effective in the first 6hr for the thrombolysis. Among the risk factors for the HR-nomSTECAS the troponin I was the only independent predictor of coronary lesions

P1102

Predictors and Clinical Relevance of Troponin Elevation following percutaneous Aortic Valve Replacement

H Jilaihawi[1], T Spyt[1], E Logtens[1], JC Laborde[2], D Chin[1], J Kovac[1]. [1]*Glenfield Hospital, Leicester, UK* [2]*Clinique Pasteur, Toulouse, France*

Background: Troponin rise is often seen after interventional cardiology procedures, but is frequently of questionable significance. We sought to quantify and determine the aetiology of any troponin rise observed after percutaneous AVR (pAVR) and also assess its clinical relevance. **Methods:** As part of the first UK experience of this technology, pAVR via femoral route was performed in 12 elderly (mean age 84.5 SD 4.8) patients using the (CoreValve) 18 Fr revalving system. All patients treated had severe calcific degenerative aortic stenosis (calculated effective orifice area 0.7 cm^2 - SD 0.14). Troponin I was measured between 20–24h and its relationship to a number of demographic and clinical variables assessed using standard univariate statistical methods. We examined the long term clinical relevance of any troponin rise by comparing biplane EF pre procedure and at 1 month follow up. **Results:** Troponin generally peaked at 20–24 hours with a mean troponin of 1.60 μg/L (SD 1.72). CEOA increased to 1.5 cm^2 (SD 0.22) ($p<0.001$). Biplane EF at baseline was 52.9 % (SD 7.7) and at 1 month 56.0% (SD 6.9) p=NS. Troponin rise was unrelated to change in EF, age and sinus geometry including annulus size, sinus of valsalva width, sinus height and (sinus width minus annulus width). It was however related to LVOT width at baseline p= 0.026; r=0.662 and also to native leaflet thickness measured immediately preprocedure by TEE p=0.003 ; r=0.926. **Conclusion:** Troponin rise is observed in percutaneous aortic valve replacement but is of questionable long term significance with no associated reduction in EF. Troponin rise appears associated with native leaflet thickness.

P1103

ENDOVASCULAR RECONSTRUCTION BY MEANS OF STENTS OF SYMPTOMATIC INTRACRANIAL STENOSIS

P. Lylyk[1], C. Miranda[1], R. Ceratto[1], A. Ferrario[1], J. Vila[1], C. Ingino[1]. [1]*ENERI Medical Institute*

Background. Intracranial atherosclerotic disease carries a risk of stroke of 8%–22% per year and it has been estimated that it is the cause of approximately 5%–10% of all strokes. Oral anticoagulation has been the treatment of choice in the last years. But with the results from the Warfarin Versus Aspirin for Recurrent stroke Study (WARSS) and from the Warfarin Versus Aspirin for Symptomatic Intracranial Disease Study (WASID), it is known that medical therapy is poorly effective for large vessels atherosclerotic stenosis and that aspirin is better than warfarin in cerebrovascular atherosclerotic disease. **Purpose.** The authors describe their experience with intracranial stents for treatment of patients (pt) with symptomatic atherosclerotic stenosis despite better medical treatment. **Methods:** From May 1996 to December 2006, one hundred and fourty four pt with recurrent signs and symptoms of cerebral ischemia despite optimal medical therapy underwent stent-assisted angioplasty. Location and degree of stenosis, preprocedural regimen of antiplatelet drugs, type devices implanted, procedure-related complications and adverse events, were recorded. Neurological and radiological outcomes was obtained by independent neurologist. **Results:**. One hundred and fourty four patients (64,5% males; age ranged from 54 to 73 years, mean 59 years) were retrospectively evaluated. In the posterior circulation were detected 62.5% of the cases and stenosis before treatment was 75.4%. After stent placement, residual stenosis was lower than 30% in all cases. One stent was implanted in 73%. Coronary stents were used up to neurovascular self-expanding stents were available in 2004. Angiographic follow-up was available in 79 pts (55%.) and re-stenosis rate was 14.5%. Clinical outcome with m-Rankin scale was 1–2 in 68.2%, 3–4 in 14.4%, 5 in 3%, and 6 in 14.4%. Procedure related morbidity and mortality rate were 2,7% and 2,8%, respectively. One year morbi-mortality rate was 9,5%. **Conclusion.** Endovascular reconstruction of intracranial arteries by means of stents is technically feasible, effective and a safe procedure in patients with symptomatic intracranial stenosis. Limitations of coronary stents in terms of navigability and deployment were improved by neurovascular technology. Long-term patency and clinical results of intracranial stent placement remain to be determinate.

P1104

Diabetes: a coronary artery disease equivalent revisited in acute coronary syndrome patients

S. Monteiro[1], N. Antonio[1], S. Costa[1], C. Negrier[1], R. Teixeira[1], F. Goncalves[1], P. Monteiro[1], L. Goncalves[1], M. Freitas[1], L. A. Providencia[1]. [1]*Coimbra University Hospital*

Introduction: It has been demonstrated that diabetes confers a risk equivalent to the presence of established coronary artery disease (CAD), as prognosis in patients with type 2 diabetes is comparable to that non-diabetic subjects with prior myocardial infarction (MI). This concept has been recently challenged by some authors and its validation for in-hospital outcomes is not well established. **Aim:** To evaluate, in an acute coronary syndrome (ACS) population, the impact of previous diagnosis of diabetes versus previous MI regarding in-hospital morbidity and mortality. Population and **Methods:** Retrospective analysis of a database containing 763 consecutive patients admitted to a single coronary care unit for ACS, between May 2004 and July 2007. Population was divided in two groups: patients with a previous diagnosis of diabetes (Group A, n = 394) and non-diabetic patients with prior MI (Group B, n = 369). **Results:** Group B had higher TIMI risk score, more prior angina and heart failure symptoms, and had more previous treatment with ACE-inhibitors, beta-blockers, anti-platelet agents, lipid lowering drugs, nitrates, percutaneous coronary intervention and coronary artery bypass surgery. They had lower creatinine clearance and left ventricular ejection fraction. Group A included more women and patients with ST-elevation MI. There were no significant differences regarding age, risk profile (hypertension, dyslipidemia and smoking), necrosis biomarkers, reperfusion strategies as well as number and type of coronary lesions, in-hospital mortality (7.6% vs 7.0%; p=0.76) and morbidity (7.9% vs 6.5%; p=0.49). **Conclusion:** Our data supports the hypothesis that, even in ACS patients, diabetes is an MI equivalent, as clinical and risk profile, coronary anatomy and in-hospital prognosis was similar between diabetic patients with a first ACS and non-diabetics with previous MI.

	Female	STEMI	TIMI>3	Killip class 3	Creat. clearance	EF	PTCA	CABG
	%	%	%	%	ml/min	%	%	%
A	36	22.9	23.1	0.8	65.5	51.3	8.5	4.4
B	22	15.9	30.6	2.8	60.0	46.7	42.2	15.6
p	< 0.001							

P1105

Cardiac abnormalities in patients with HIV-related malignancies in Sub-Saharan Africa

C. Onen[1]. [1]*Gaborone Private Hospital*

Cardiac abnormalities in patients with HIV-related malignancies in Sub-Saharan Africa (SSA). Churchill Lukwiya Onen, FRCP Gaborone, Botswana. **Background:** It is estimated that HIV/AIDS has now infected 50 million Africans, of whom 22 million have died. Many countries in SSA have HIV prevalence rates exceeding 25–33% among their adult populations. Little is known about cardiac abnormalities associated with HIV-related malignancies, despite the region being home to two thirds of the world's HIV-infected population. **Methods:** Medline search (January 1980 to September 2007) and reference lists on HIV/AIDS, the heart, HIV-related malignancies of clinical reports, case-control studies, autopsies and cancer registries from SSA. **Findings:** Cardiac manifestations in patients with HIV-associated malignancies are non-specific and multifactorial and do not appear to have paralleled the pandemic of HIV/AIDS in SSA. These disorders include infective pericardial diseases, myocarditis, endocarditis, nutritritional deficiencies, drug-related cardiotoxicity, pulmonary embolism, primary pulmonary hypertension and HIV-related vasculopathies. Direct cardiac involvement by malignancies are rare, often manifesting as serous or haemorrhagic pericardial effusions with or without tamponade in patients with Kaposi's sarcoma or non-Hodgkin's lymphoma. Cardiotoxicity with cytotoxic agents and radiotherapy appear to be dose, age and sex-related but these also seem to be rare. Non-AIDS defining malignancies such as lung and breast cancers affect the heart through metastatic processes or treatment-related complications. **Interpretation:** Reasons for the seemingly low prevalence of cardiac involvement in African patients with HIV-related malignancies include low index of suspicion, lack of diagnostic tools, overlap with other cardiac disorders, underreporting, competing mortality from non-HIV and HIV-related disorders and shortened life expectancies resulting from HIV/AIDS. Lifestyle risks for acquiring oncogenic viruses (EBV, HPV, HHV-8), host responses, degree of immunosuppression, duration of HIV infection, antiretroviral and anticancer therapy are important determinants of prognosis.

P1106

Angiopoietins mediate monocyte adhesion to endothelial cells and have pro-inflammatory actions independent of VEGF

R. Potluri[1], T Fujisawa[2], K Chudasama[1], S Ahmad[2], P Hewett[2], M Cudmore[2], A Ahmed[2]. [1]*The Medical School, University of Birmingham, United Kingdom* [2]*Department of Reproductive and Vascular Biology, University of Birmingham, United Kingdom*

Introduction: - Angiopoietins (Ang1 and Ang2) and Vascular Endothelial Growth Factor (VEGF) are growth factors with complementary roles in the process of pre-natal and postnatal vascular

development known as angiogenesis. Angiopoietins are thought to be specific to the vascular endothelium and have their angiogenic effects through a receptor tyrosine kinase, Tie2. VEGF is thought to act by binding to the FLT receptor. However, early studies in mouse skins have also shown that overexpression of VEGF increases leukocyte rolling and adhesion, vascular leakage and inflammation. Subsequent leukocyte adhesion experiments have shown that Ang1 reduces VEGF induced leukocyte adhesion to endothelial cells and led to the conclusion that Ang1 counteracts VEGF induced inflammation, hence having anti-inflammatory properties. It was also suggested that Ang2 might display pro-inflammatory activities, since it negatively controls vascular maturation by antagonizing the effects of Ang1. More recently, adhesion assays have suggested that both angiopoietins possess a similar agonistic capacity to mediate neutrophil adhesion onto activated endothelial cells and may have a role in inflammation10. **Materials and Methods:** - Conduction of monocyte adhesion assays on Human Umbilical Vein Endothelial cells (HUVECs) activated with Ang1 400ng/ml, Ang2 400ng/ml and VEGF 20ng/ml. **Results:** - Both Ang-1 (29.4 cells/field ± 1.11 SE of mean) and Ang-2 (21.6 ± 1.07) as well as VEGF (16.6 ± 2.33) induced monocyte adhesion to HUVECS compared to the control (8.10 ± 0.36) [n = 4]. Interestingly, co-stimulation with angiopoietins and VEGF decreased the adhesion to the level of VEGF alone (Ang1 + VEGF 17.0 ± 0.22; Ang2 + VEGF 17.1 ± 0.78). Furthermore, the HUVECs were stimulated in the presence of the growth factors and soluble FLT (sFLT - which renders the action of VEGF) [n = 2]. sFLT (8.45 ± 0.67) and sFLT + VEGF (9.39 ± 0.83) did not show difference in adhesion compared to control whereas combinations of sFLT + VEGF + Ang1 (27.8 ± 2.28) and sFLT + VEGF + Ang2 (22.9 ± 0.61) still produced the same amount of monocyte adhesion as Ang1 and Ang2 alone. **Conclusions** - VEGF induced monocyte adhesion is through the FLT receptor and Ang1 does not counteract this response as previously suggested9. Moreover, we can confirm that Ang1 and Ang2 have pro-inflammatory actions in endothelial cells. independent of VEGF. The physiological significance of this phenomenon is not known and may extend beyond angiogenesis and could possibly involve the pathogenesis of atherosclerosis.

P1107

HOW DO PARENTS AND RESPONSIBLE OF SCHOLARS DEAL WITH TONSILLITIS AND RHEUMATIC FEVER IN RIO DE JANEIRO?

R. Müller[1], M.F.M.P. Leite[2], D.L. Sampaio[3], M.C.C. Kuschnir[1], M.J.L.M. Silva[1], A.S. Souza[3], R. Thurler[3], R. Bedim[3], F.F. Nascimento[1], R.M.A. Xavier[1]. *[1]PREFERE Program – Program of Prevention of Rheumatic Fever– National Institute of Cardiology – Brazilian Health Minister - Rio de Janeiro – Brazil [2]Bonsucesso General Hospital – Brazilian Health Minister – Rio de Janeiro- Brazil [3]UNIGRANRIO University – Rio de Janeiro – Brazil [4]PREFERE Program – Program of Prevention of Rheumatic Fever– National Institute of Cardiology – Brazilian Health Minister - Rio de Janeiro – Brazil [5]National Institute of Cardiology – Brazilian Health Minister - Rio de Janeiro – Brazil [6]NIGRANRIO University – Rio de Janeiro – Brazil [7]NIGRANRIO University – Rio de Janeiro – Brazil [8]NIGRANRIO University – Rio de Janeiro – Brazil [9]National Institute of Cardiology – Brazilian Health Minister - Rio de Janeiro – Brazil [10]National Institute of Cardiology – Brazilian Health Minister - Rio de Janeiro – Brazil*

Introduction: Rheumatic fever (RF) is the most common cause of acquired heart disease among children and young adults worldwide. In Brazil RF remains a major problem, responsible for high morbid-mortality rates. Difficulties in early recognition of RF and adequate treatment of streptococcus tonsillitis contribute to maintain this disease. The most devastating effects are on children and young adults in their most productive years (WHO 2004). **Objective:** to investigate the knowledge of parents and responsible of scholars about streptococcal tonsillitis and RF, and their current practices with their children's sore throat. **Methods:** cross-sectional survey with parents/ responsible of students of 2 schools for professors/ staff children of UNIGRANRIO University in Rio de Janeiro: 1st. school located in Duque de Caxias, a suburb of Rio (Group A), and 2nd one in Lapa in centre of Rio (Group B). A self-administered questionnaire with 11 multiple choice and categorical (yes/ no) questions was applied in May/ October 2006. Statistical analyses considered significance p value< 0,05. **Results:** Group A -142 participants; Group B- 44. Most respondents didn't know that tonsillitis could cause heart disease (Group A: 55,6% / Group B 63%), and just 39,4% -Group A and 54,5% - Group B knew the symptoms of RF. Group B referred more cases of relatives/ friends with RF (26% x 45,4% - p-0,024), but only 20,4% of these respondents knew how to treat RF. Main reasons for taking children with sore throat to doctor were in Group A / B: high fever: 81,7% x 100% (p-0,005); tonsillar exudates: 54,9% x 52,3%; cervical adenopathy: 38,7% x 43,2%; food refusal: 20,4% x 38,6% (p-0,024). Parents/ responsible current practices for sore throat: 1) take children to doctor- 67,6% x 88% - p- 0,05; 2) give antibiotics without medical prescription- 13,3% x 2,3%; 3) gargle and other medicines without prescription- 25,3% x 16%. Group A 39,4% x Group B 70,4% took children to doctor in every tonsillitis event last year (p-0,0006). Medical prescription for tonsillitis weren't different: 1) intramuscular benzathine penicillin - 11,2% x 9%; 2) oral antibiotics 5–7 days- 53,5% x 47,7%; 3) oral antibiotics 10 days- 31% x 45,4%; 4) other medicines- 7% x 11,3%; 5) stay at home the day after appointment- 30,9% x 36,3%. **Conclusions:** Practices among parents/ responsible showed few differences between groups, perhaps related to difficulty in accessing local healthcare. Medical prescription was not different, but inadequate in more than half of cases. Knowledge and practice of both groups as well as medical attitude towards tonsillitis and RF management were considered poor. Although RF is still a prevalent disease in Rio, very low-level awareness of the disease and its consequences were observed. Further regular education and dissemination of adequate information are required for reducing undesirable differences in practice and help in controlling this preventable disease in Brazil.

P1108

Long-term (up to five years) Clinical Outcomes of On-label versus Off-label Patients in the DESIRE (Drug Eluting Stents In the REal world) Registry

J. Costa Jr[1], A. Sousa[1], R. Costa[1], A Costa[1], M Cano[1], G Maldonado[1], O Berwanger[1], R Pavanello[1], M Barbosa[1], J Eduardo Sousa[1]. *[1]Hospital do Coração - Associação do Sanatório Sírio*

Background: Regardless of the FDA strict indications for drug-eluting stent (DES) deployment, cardiologists have expanded the formal recommendations and treated more complex patients (pts) and lesions not previously included in randomized trials. We sought to evaluate the clinical outcomes of DES in the off-label scenario. **Methods:** Between May 2002 and May 2007 all consecutive pts treated solely with DES were prospectively enrolled in the single center DESIRE registry and grouped according to their "label" status. Pts with acute myocardial infarction and lesions in grafts were excluded. On-label pts had stable angina or silent ischemia caused by a single, de novo lesion <30mm in length and located in a native coronary artery of 2.5 to 3.5mm in diameter. All remaining pts were classified as off-label. Our primary objective was to compare the incidence of in-hospital and long-term MACE and stent thrombosis (ST) in the 2 groups. ST was classified according to the ARC definition. Pts were clinically evaluated at 1, 3 and 6 months and then annually up to 5 years. **Results:** Most of the enrolled pts were off-label [1,533 (76%) of 2,014]. The table displays in-hospital and long-term events. At 5 years, 95% of on-label pts and 92% of off-label were free of MACE (p= 0.02). ST was observed in 3 (0.6%) on-label pts vs. 28 (1.8%) off-label (p<0.001). **Conclusion:** In the DESIRE registry, DES in pts with increased complexity profile (off-label indications) was associated with low rates of MACE (<10%) and ST (<2.0%) up to 5 year- follow-up; however, the outcomes in this subset are still inferior compared to those with strict indications for DES (on-label).

Clinical Outcomes	On-label (n= 481)	Off-label (n=1,533)	p-value
In-hospital			
- Myocardial infarction	6 (1.2%)	36 (2.3%)	0.02
- TLR	1 (0.2%)	0 3 (0.2%)	0.9
- Cardiac death	0		0.9
Cumulative long-term (2.6± 1.2 years)		36 (2.3%)	0.07
- Myocardial infarction	8 (1.6%)	46 (3.0%)	0.1
- TLR	11 (2.3%)	41 (2.7%)	<0.001
- Cardiac death	5 (1.0%)		
Cumulative MACE	24 (5.0%)	123 (8.0%)	0.02

P1109

Angiotensin-(1–7) inhibits angiotensin II-stimulated phosphorylation of extracellular signal-regulated kinases (ERK) 1/2 in rat heart in vivo.

JF Giani[1], MM Gironacci[1], MC Muñoz[1], D Turyn[1], **FP Dominici**[1]. *[1]IQUIFIB Facultad de Farmacia y Bioquímica Universidad de Buenos Aires*

Angiotensin (ANG) II contributes to cardiac remodelling after myocardial infarction by stimulating myocyte hypertrophy and myofibroblast proliferation. In contrast, ANG-(1–7) infusion after myocardial infarction reduces myocyte size and attenuates ventricular dysfunction and remodelling. The effects of ANG II are mediated by the G protein-coupled receptor AT1 (AT1R). Downstream signaling effectors of the AT1R that participate in the growth-promoting and proliferative effects of ANG II include the signal transducers and activators of transcription STAT 3 and 5 and mitogen-activated protein (MAP) extracellular signal-regulated kinases (ERK 1/2). ANG-(1–7) is produced in the heart, although its effects on the ANG II stimulation of the STAT and MAP kinase (MAPK) signaling pathways are unknown. Accordingly, in the current study, we examined whether ANG-(1–7) affects ANG II-mediated STAT and MAPK signaling pathways in rat heart. Our hypothesis was that ANG-(1–7) might exert its anti-proliferative effects by inhibiting these pathways, suggesting that it acts as a counterregulatory factor to ANG II in the heart. Male Sprague-Dawley rats at 2 months of age were used. *In vivo* stimulation of the heart was obtained by the injection of solutions of normal saline (0.9% NaCl) into the vena cava containing ANG II (8 pmol/Kg) plus ANG-(1–7) at increasing doses (0.08–800 pmol/Kg). The effects of ANG-(1–7) on ERK 1/2 and STAT 3 and 5 phosphorylation were determined by immunoprecipitation followed by immunoblotting with phospho-specific antibodies. Results were compared with those obtained by stimulation with either ANG II or ANG-(1–7) in an 8 pmol/Kg dose. ANG II and ANG-(1–7) stimulated the phosphorylation of STAT3 and 5 to a similar extent (2.1 ± 0.2 fold increase over saline for STAT3; 2.2 ± 0.2 fold increase over saline for STAT5; $p < 0.05$, $n = 5$ for both proteins). However, only ANG II stimulated the phosphorylation of ERK 1/2 (2.0 ± 0.1 fold increase over saline, $p < 0.05$, $n = 5$). ANG-(1–7) prevented the ANG II-mediated phosphorylation of ERK 1/2 in a dose dependent manner. In summary, we have shown that similarly to ANG II, ANG-(1–7) induces the activation of STAT3 and 5 in the heart. On the other hand ANG-(1–7) failed to stimulate ERK 1/2 phosphorylation and inhibited the ANG II-stimulated phosphorylation of ERK 1/2. This result could represent a mechanism for the anti-proliferative effects of ANG-(1–7) in the heart, reinforcing the notion that production of this hormone in this organ may have a protective role by counteracting the proliferative effects of locally generated ANG II.

P1110

MICROVASCULAR DIABETIC COMPLICATIONS ARE MORE PREVALENT IN INDIA COMPARED TO MAURITIUS AND THE UK DUE TO POORER DIABETIC CONTROL

R. Potluri[1], Y Purmah[1], N Sewpaul[1], M Dowlut[1]. *[1]The Medical School, University of Birmingham, United Kingdom*

Introduction - Type 2 diabetes mellitus (T2DM) is a growing worldwide problem with WHO estimates suggesting that 300 million people will be affected by 2025. T2DM could result in both microvascular and macrovascular complications but the presentation of these complications could vary globally and be influenced by diabetic control. **Method** - We investigated the prevalence of these complications by surveying 787 patients of south-asian origin in diabetic clinics in the UK (n=351), Mauritius (n=173) and India (n=263). **Results** - We found the prevalence of microvascular complications such as retinopathy (India 16.3%; Mauritius 2.3%; UK 2.6%), nephropathy (India 20.5%; Mauritius 10.5%; UK 2.3%) and neuropathy (India 8.4%; Mauritius 1.2%; UK 5.1%) complications to be significantly higher in India compared to Mauritius and the UK ($p<0.05$). Interestingly, macrovascular complications such as cardiovascular disease were significantly more prevalent in Mauritius and the UK compared to India ($p<0.05$). The use of diabetic medication such as Metformin, Sulphonylureas and Insulin was significantly higher in the UK and Mauritius compared to India ($p<0.05$). The mean HbA1c was

significantly higher in India compared to the UK (India 8.68%; UK 8.30%). **Conclusion** - Our results suggest that microvascular complications are higher in India due to poorer diabetic control. Our findings could be explained by late-onset presentation of diabetic patients in India due to the lack of primary care initiatives to screen and monitor treatment of T2DM. Furthermore, the poor diabetic control in India could reflect a dearth of clinical, evidence-based-knowledge regarding diabetic medication amongst Indian physicians. In view of the global increase in T2DM, this is a major concern for Indian healthcare

P1111

Electrocardiographic patterns and coronariographic correlation in patients with STEMI that underwent Percutaneous Coronary Intervention on admission to hospital.

I. Santos-Rodriguez[1], M.J Ruiz-Olgado[1], V. Ramirez-Castro[1], J. Rodriguez-Collado[1], M. Cascon-Bueno[1], A. Perez-Bueno[2], V. Leon-Arguero[1], I. Cruz-Gonzalez[1], F. Martin-Herrero[1], M. Diego-Dominguez[1]. *[1]Department of Cardiology, University Hospital [2]Faculty of Biology. University of Salamanca*

Background.- The ECG is the most old and frequently used noninvasive tool in the diagnosis and location of myocardial infarction(MI). However on the basis of correlations with modern cardiac imaging techniques, differences in the location and extent of MI have been reported. **Objetive.**- ECG changes in STEMI provides an optimal opportunity to describe location of infarction and its correlation with the Ischemic Responsible Artery(IRA) in patients with STEMI that underwent Percutaneous Coronary Intervention(PCI) on admission to hospital. We analyse this correlation. **Methods.**- 186 consecutive patients, 81% male, mean age 65±13, admited to the hospital with acute STEMI that underwent PCI 23±60 hours from symtoms-onset, we classify the ECG infarction location on the basis of the ST-segment deviation or abnormal new Q waves in 6 electrocardiographics patterns as follows: Anterior Pattern(Ant): The ECG shows ST Elevation(STE) and/or new Q waves in 5 or 6 precordial leads; Septal Pattern(Sep): The ECG shows STE/Q waves in leads V1 and V2; Apical-Pattern(Ap): There are abnormal STE/Q waves in leads V5 and V6; Extensive Anterior Pattern(eAnt): the ECG shows abnormal STE/Q waves in the precordial leads and leads aVL and I. Lateral Pattern(Lat): STE/Q waves in lead I and aVL. Inferior Pattern(Inf): STE/Q waves in leads II, III and aVF. IRA assessed by coronariography was classified as left anterior descending(LAD), left circunflex(LCX), and right coronary artery(RCA). Although similar considerations may be applied for relations with descent ST-segment deviation this report focuses only on STE and Q location of the QRS-complex as indicative of MI. **Results** The relation of IRA with ECG changes (P value=0,000) are shown in Table: **Conclusions:** The anterior and extensive anterior patterns of ECG in patients with STEMI were almost always related to LAD as IRA. The Septal pattern, isolated or in association with Lateral pattern were related to LAD or LCX. The Septal pattern in association with Inferior pattern was related to RCA, excepted in one case. The Lateral pattern was related to LCX and less frequently with LAD artery. The Inferior pattern was related to RCA (most frequently), but also with LCX (in cases of dominant or co-dominant left circunflex) or with RCA. Apical pattern was present always in association with Inferior or Lateral pattern.

Patterns	LAD n=90	LCX n=22	RCA n=69
Ant n(%)	22(24,4)	0	0
Sep n(%)	27(30)	1(4,5)	0
Ap n(%)	0	0	0
eAnt n(%)	16(18)	0	0
Lat n(%)	2(2)	2(9)	0
Inf n(%)	4(4)	11(50)	44(64)
Ant+Lat	8(9)	1(4,5)	0
Ant+Inf n(%)	3(3)	0	2(3)
Sep+Inf n(%)	1(1)	0	8(12)
Sep+Lat n(%)	5(6)	1(4,5)	0
Inf+Lat n(%)	0	2(9)	1(1,4)
eAnt+Inf n(%)	2(2)	0	0
Inf+Ap n(%)	0	4(18)	14(20)

P1113

"ASSESSMENT OF ATRIAL SYSTOLE WITHIN THE FIRST 24 HOURS AFTER CARDIOVERSION IN PATIENTS WITH ACUTE ATRIAL FIBRILLATION"

G. Rodriguez Botta[1], E. Escudero. *[1]Magister en Ultrasonido en Cardiología, Universidad Nacional de La Plata [2]Magister en Ultrasonido en Cardiología, Universidad Nacional de La Plata*

Introduction: Atrial Fibrillation (AF) is a frequent arrhythmia and a frequent cause of stroke. Guidelines for the management of patients with AF recommend anticoagulation therapy for patients with AF of 48-hours duration or longer, but there is evidence to expect that not all patients with acute AF have low risk of thrombus formation. Cardioversion is associated with an increase of stroke risk because of a transient mechanical dysfunction of atrium termed atrial stunning. Thus, restoration of sinus rhythm (SR) in the first 48 hours of initiation of AF should not determine the recovery of atrial systole and the end of thrombo embolic risk. The aim of the present study was to assess the recovery of the systolic function of the left atrium (LA), using Doppler echocardiography, within the first 24 hours after cardioversion in patients with acute AF. **Material and Methods:** 40 patients with non valvular AF and normal left ventricular systolic function were evaluated. 10 patients had spontaneous recovery of SR, 5 patients were performed electric cardioversion and 25 patients were performed pharmacological cardioversion (intravenous Amiodarone). Patients underwent a transthoracic echocardiography evaluation and transmitral inflow velocity of atrial wave (A-wave) was assessed by pulsed Doppler, within the first 24 hours after cardioversion. **Results:** Peak A-wave velocity was identified in all patients. Age and Left Ventricular Mass Index (LVMI) had a positive linear correlation with peak A-wave velocity ($r = 0.327$; $p < 0.05$ and $r = 0.313$; $p < 0.05$, respectively). The other variable associated with differences in peak-A wave velocity was sex. Peak A-wave velocity was higher in women than in men (0.80 ± 0.22 m/sec vs. 0.61 ± 0.24 m/sec; $p < 0.05$). That finding could be explained by the fact that women were older than men (76.2% of women were 60 years old or more, 42,1% of men were 60 years old or more ($P < 0.05$)). It was observed a non significant lower Peak A-wave velocity among those patients treated with electric cardioversion (0.53 m/sec) compared with those who were treated pharmacologically (0.72 m/sec) or had a spontaneous recovery of SR (0.74 m/sec) (p=0.29). **Conclusions:** These data suggest that, in patients with acute FA, LA mechanical function is recovered within the first 24 hours after cardioversion with all the cardioversion modes studied.

P1114

Obesity as a predictor of mayor cardiovascular risk factors- Chilean policemen cohort.

F. Vilchez[1], **P Varleta**[1], B Clericus[1], P Salvo. *[1]Hospital de Carabineros*

Obesity as a predictor of mayor cardiovascular risk factors- Chilean policemen cohort. F Vilchez, P Varleta, B Clericus, P Salvo Hospital Dipreca Santiago, Chile. Medicina Preventiva, Carabineros de Chile **Background:** Obesity is one of the most common worldwide health problem and is recognized as an epidemic. Nevertheless in our country we lack information about the magnitude of obesity in young population and its association with other risk factors. **Objective :** Our goal was to determinate the prevalence of obesity in a young population and if its correlate with traditional cardiovascular risk factors. **Methods** Cross sectional study design, conducted from January to December 2003, done in a primary cardiovascular prevention unit. We evaluated a policemen population cohort of 8614 individuals referred to a preventive medicine control, along our country. In all patients we evaluated body mass index (BMI), systolic and diastolic arterial blood pressure, lipid profile (LP), fasting plasma glucose (FPG) and we consult about smoking habit. Lipid profile was analyze with Gemini® automatic analyzer and FPG with Fusion® automatic analyzer. For the analysis we separate the population in obese and non-obese; considering obesity a BMI over or equal to 30 kg/m2. The SPSS 13.5 program was used for the statistics analysis. Categorical data were analyzed by chi- square and parametrical continuous variables with t student test between the groups. **Results** Of the total population, 97 individuals information was incomplete. The total population analysis was done on 8517. Mean age 34 ± 8 years, 94,3 % male, and 46,6 % smokers. The prevalence of obesity was 15,1 %.,with difference between sex (7,9 % obese in female versus 15,6 % in male, p<0.001). The results are show in table 1 The smoker in the obese population was 43,1 % versus 47,2 % in non-obese population (p<0.016) **Conclusion:** Obesity is highly prevalent in this young working population and presents a good correlation with traditional cardiovascular risk factors in this Chilean cohort. We consider important to reinforce the impact of obesity in cardiovascular health and to make efforts to control this condition.

TABLE 1

	Obese	Non-Obese	P
Age	36,18	33,46	<0,001
BMI	32,254	25,794	<0,001
DBP	81,32	77,64	<0,001
SBP	129,92	124,43	<0,001
Total Cholesterol	213,51	205,25	<0,001
HDL-Cholesterol	45,17	45,80	0,019
LDL-Cholesterol	134,16	129,65	<0,001
Triglyceride	183,00	156,31	<0,001
Fasting plasma glucose	97,66	92,16	<0,001

P1115

Predictive Value of Cardiac I Troponin for High Risk Anatomy in Acute Coronary Syndromes without ST Segment Elevation.

D. Di Nanno[1], L. Lopez[1], A. Torterola[1], A. Bordenave[1], M. Consoli[1], C. Pasinato[1], R. La Greca[1], S. Chekherdemian[1]. *[1]HOSPITAL CHURRUCA. BUENOS AIRES. ARGENTINA.*

Background: Cardiac I troponin is an excellent predictor of outcome in acute coronary syndromes without ST segment elevation (NSTEMI). Its value is related to plaque vulnerability and subsequent events like acute myocardial infarction and death. But there is not enough evidence to consider that the increase cardiac I troponin is related with the severity and the number of vessels compromised. In this study we consider this issue and try to link cardiac I troponin with high risk coronary anatomy. **Methods:** We included 132 consecutive patients admitted with a diagnosis of NSTEMI within 24 hours since the onset of chest pain. Cardiac I troponin was determined in all patients after at least 8 hours since the onset of symptoms. We established two groups considering a cardiac I troponin cut off value of 0.2 nanograms per mililiter (ng/ml) (Group A) and 1.0 ng/ml (Group B) for the analysis. We performed cardiac catheterization in all patients within 48 hours since the admission. High risk anatomy was defined as left main disease (>50% stenosis) and/or three vessels and/or two vessels with proximal left anterior descending artery disease (>70% stenosis). **Results:**

GROUP A

	High risk	Low risk	
TnI> 0.2 ng/ml	44	44	88
TnI< 0.2 ng/ml	20	24	44
	64	68	132

p= ns. Sensitivity: 68%. Especificity: 35%. Positive redictive value: 50%. Negatvie predictive value: 54%. Positive likelihood ratio: 1.04. Negative likelihood ratio: 0.91.

GROUP B

	High risk	Low risk	
TnI >1 ng/ml	26	29	55
TnI <1 ng/ml	44	33	77
	70	62	132

p= ns. Sensitivity: 37%. Especificity: 53%. Positive predictive value: 47%. Negative predictive value: 57%. Positive likelihood ratio: 0.78. Negative likelihood ratio: 1.18.

Conclusions: In our study cardiac I troponin was not related with high risk anatomy.

P1116

Heart rate variation disturbance followed by right ventricle acute systolic strain after pulmonary embolisms

M. Palinsky[1], J. Petrovicova[2], P. Mitro[1], M. Szakacs[1]. [1]*Teaching hosp.* [2]*ULI UPJS*

There is no doubt, that diagnosis of pulmonary embolism (PE) is very difficult to make, although PE is one of frequent diseasese which causes sudden noncardriac death.Ventilatory-perfusion pulmonary scan (VPSP) and pulmonary computer tomography with spirala are golden standard of PE diagnosis without required efectiveness. Right ventricular disturbance significantly influenced heart rate variation (HRV) how was asserted before. **Aim:** To determine useful of HRV variables for making the PE diagnosis by analyzing data of 24 hour Holter ECG monitoring. **Method:** 34 women patients at an age from 24 to 59 years, with average 42 years, were devided into two groups. First group accounts 16 pts with PE, the diagnosis were made from positive VPSP and improve of clinical state following aticoagulant therapy, the second group conists of 18 pts with negative VPSP. Every group includes women without different age, frequency of diabetes mellitus and high blood pressure. Women with coronary artery disease or myocardiopathy, valvae disease were excluded from statistical account. Antiarythmic therapy and beta blocking agents were removed during Holter ECG monitoring. All the women were at low risk of sudden death. All variables obtain from Holter ECG report were statistical procesed by unpaired Students t-test and Mann – Whitney U test. **Results:** there were differences between the PE v. s. control group in mean heart frequency (89±15 v.s. 77±6 bpm, p< 0,01), maximal heart frequency (153,4 ± 19 v.s. 136,4 ± 18, p=0.0108), rMSSD awake (19,6±6 v.s. 26,4±9 ms, p<0,01) pNN50awake (3,0±2,3 v.s. 6,8±6 %, p=0,02), rate 5min QTY from 80 – 120 frequency (190±224 v.s. 32±39., p<0,01), VLF 24 hour (1342±717 v.s. 1880±807 ms2, p<0,05), ULF (10,9±6,1 v.s.18,3±12, ms2, p<0,05), HF (147±127 v. s. 271±192 ms2, p<0,05), and VLF/5min asleep (1121±741 v. s. 1653±647,ms2, p<0,05). Without significantly differences in another aquired parameters. The outcomes were less significant in analysed HRV in subgroups with single VPSP or only clinical positive results v.s. control group. **Conclusion:** acute submasive pulmonary embolism deteriorates the right ventriculare function, and outcomes the HRV changes mainly over day. Perhaps, the HRV analysis makes us capable of recognizing the submasive PE at an early stage at which VPSP still negative. VPSP and HRV analysis together increase making diagnosis at early stadium of PE. In practice are important: maximal HR: > 136 bpm., main HR: > 81 bpm., rMSSD awake < 19ms., pNN50 awake < 2%, 5min QTY (80 -109) > 45., VLF total < 1295 ms2, 5min VLF asleep< 1571 ms2, ULF < 7,6 ms2, HF <52 ms2.

P1117

EXCELLA First-in-Man STUDY : SAFETY AND EFFICACY OF ELIXIR NOVOLIMUS-ELUTING STENT IN THE TREATMENT OF PATIENTS WITH DE NOVO CORONARY LESIONS

A Abizaid[1], **J. Costa Jr**[1], R Costa[1], F Feres[1], D Siqueira[1], P Fitzgeral[2], R Staico[1], D Siqueira[1], A Sousa[1], J Eduardo Sousa[1]. [1]*Instituto Dante Pazzanese de Cardiologia* [2]*Stanford University Medical Center*

Background: First generation DES have markedly reduced restenosis. However, there is a major interest in developing new DES with greater flexibility, radiopacity and safety profile. The Elixir Medical Drug Eluting Stent is a novel DES that combines a chromium-cobalt plataform with Novolimus (a Sirolimus-analogue antiproliferative drug) and a methacrylate polymer. As potential advantages, it carries less drug when compared to Cypher® (84μg of Novolimus vs. 140 μg of Sirolimus) requiring less amount of polymer. We sought to evaluate the safety and efficacy of this novel device in reducing neointimal hyperplasia as assessed by QCA and IVUS. **Methods:** In March 2007 a consecutive cohort of patients with de novo lesions <14 mm in length, located at native coronaries of diameter from 3.0 to 3.5mm were consecutively enrolled in this First-In-Men study. By protocol, angiograph and IVUS should be done at baseline and repeated at 4 and 9 months. Dual antiplatelet therapy was kept for 6 months. Primary endpoint was QCA lumen loss at 4-month follow-up. Secondary endpoints included MACE, in-stent neointimal obstruction by IVUS and device success. **Results:** A total of 15 patients were included. Most of them were female (67%) and diabetes was detected in 47% of the cohort. Angiographic and procedural successes were achieved in all patients. At 4-month angiographic follow-up there was minimum in-stent lumen loss (0.17±0.12 mm) by QCA and % of obstruction (3.9 ± 2.8) by IVUS. Vascular positive remodeling and late ISA were not observed among these patients. No MACE was evidenced up to sixth month of follow-up. Nine month QCA and IVUS results will be presented at the meeting. **Conclusions:** In this first-in-man study, implantation of Novolimus-eluting stent was proven to be feasible, safe and elicited minimum neointimal proliferation. Additional large clinical trials are required to confirm these promising results.

P1118

Association of alanine aminotransferase with cardiovascular risk factors in 40 years old subject from Slovak general population

B. Vohnout[1], J. Gasparovic[1], Z. Basistova[1], S. Wsolova[1], L. Fabryova[1], K. Raslova[1]. [1]*Slovak MedPed FH group at Slovak Medical University, Bratislava, Slovakia*

Alanine aminotransferase (ALT), a marker of non-alcoholic fatty liver disease has been associated with atherosclerosis, incidence of type 2 DM and has been shown as a predictive factor for coronary events, independently of traditional risk factors and the features of the metabolic syndrome. We have evaluated association between ALT and cardiovascular risk factors in a Slovak subjects without risk factors or more than 3 risk factors. **Methods:** We have included subgroup of 454 subjects (61.4% females) involved in a cross-sectional screening of risk factors in Slovak 40 years old general population. Three hundred and thirty subjects (72.7%) were free of risk factors and 124 subjects (27.3%) suffered on 4 or more risk factors (RF4). Six risk factors were defined as: dyslipidemia (if at least one of chol>=5.0, HDL<+1.0 males, HDL<+1.2 females, LDL>=4.0 or Tg>2.0 mmol/l), obesity (at least one of BMI>30, waist >102 cm in males and 88 in females), blood pressure (if systolic BP> 140 and/or diastolic BP > 95 mmHg), smoking, positive family history of premature cardiovascular disease and diabetes or fasting glycemia >=6.0 mmol/l. ALT was divided according to tertiles and OR with 95% CI as a expression of risk of suffering on at least 4 risk factors was calculated using regression analysis. **Results:** Basic characteristic of the population is in the table. Subjects without risk factors have significantly lower mean serum ALT levels (mean±SE, 0.34±0.01 vs 0.54±0.02 μkat/l, p<0.0001, adjusted for sex) than RF4 subjects. As compared with the first tertile, sex adjusted ORs (95% CI) for suffering on at least 4 risk factors were 2.6 (1.3–5.2) and 12.3 (6.4–23.7) for subjects in the second and third tertile of ALT, respectively. **Conclusion:** The result of our study shows that ALT is a suitable predictor of patients with high prevalence of cardiovascular risk factor. Subjects even in the upper part of normal range of ALT might be thus considered for screening for presence of cardiovascular risk factors.

TABLE. CHARACTERISTICS OF THE POPULATION

Chol (mmol/l)	4.6±0.8
TG	1.2±0.7
HDL C	1.5±0.4
LDL-C	2.6±0.7
Glycemia	5.1±1.2
ALT (μkat/l)	0.38±0.27
1th tertile	< 0.25
2nd tertile	0.25–0.38
3rd tertile	> 0.38
Systolic blood pressure (mmHg)	118±16
Diastolic blood pressure	77±11

means±SD

P1119

Restenosis of Drug-eluting stents: a Currently Unsolved Issue?

J. Costa Jr[1], A Sousa[1], R Costa[1], A Moreira[1], G Maldonado[1], M Cano[1], E Romano[1], C Jardim[1], C Campo[1], J Eduardo Sousa[1]. [1]*Hospital do Coração - Associação do Sanatório Sírio*

Background: Despite the marked reduction in restenosis rates following drug-eluting stent (DES) use, this complication still happens in 5–15% of the cases. The natural history and the best treatment for DES in-stent restenosis (ISR) are yet to be defined. We sought to evaluate the long-term clinical outcomes of a non-selected population with DES ISR treated with another DES deployment. **Methods:** Between May 2002 and March 2006, 2,081 consecutive patients were treated with DES in a single center. All consecutive cases of DES ISR treated with another DES deployment were enrolled in this registry. The type of DES to be deployed (Cypher vs. Taxus) to treat the ISR was at operator's discretion. Follow-up (FU) was obtained at 1, 3 and 6 months and then annually up to 5 years. The primary endpoint of this study was to assess the incidence of target-lesion revascularization (TLR), stent thrombosis and cardiac death. Stent thrombosis was classified according to the ARC definition. **Results:** A total of 61 pts (2.9%) evolved with ischemia-driven DES ISR. Sixteen of them were referred to CABG. Of the 45 patients (65 lesions) submitted to new PCI, 30 (66.6%) were men with a mean age of 60 ±9 years. Mean follow-up time was 2.7±1.1 years. Diabetes mellitus was observed in 64% (n=29) pts. Unstable angina was the clinical presentation in 27% of them. Notably, 5 pts (11.1%) presented myocardial infarction as the restenosis clinical manifestation. Right coronary artery was the culprit vessel in most cases (32%). Most DES ISR cases were focal and occurred more frequently following the use of Taxus (1.6% vs. 1.3%, p=NS). No type IV ISR (total occlusion) was observed in this population. Reference vessel diameter and lesion length were 2.8mm±0.5mm and 16mm±7.1mm, respectively. Mean stenosis diameter was 66.9%±11.4%. Switch to a different type of DES was done in only 10% of the cases. In consequence, most of the time, DES ISR was treated with the deployment of the same type of DES. More than one DES was required in 10.7% of the cases. Direct stenting was performed in 67% of the procedures. At long-term follow-up no death/stent thromboses were evidenced. However, 6 patients (13.3%) presented ischemia-driven TLR (recurrence of ISR). **Conclusions:** Although infrequent, DES ISR still has poor long-term clinical outcome, mostly due to the recurrence of treated-lesion ischemia. Different strategies should be tested in this high-complexity clinical scenario.

P1120

Preliminary Results of the Hydroxyapatite Non-Polymer-Based Sirolimus-Eluting Stent for the Treatment of Single De Novo Coronary Lesions – A First-In-Human Analysis of a Third Generation Drug-Eluting Stent (DES) System

A Abizaid[1–2], **J. Costa Jr**[1–2], R Costa[1–2], F Feres[1], R Graebin[1], R Staico[1], L Fernando Tanajura[1], A Abizaid[1], A Sousa[1], J Eduardo Sousa[1]. [1]*Instituto Dante Pazzanese de Cardiologia* [2]*Cardiovascular Research Center*

Background: Recent concerns regarding DES long-term safety have been raised. Synthetic polymers have been associated with an intensive inflammatory response. Animal histopathology and ex-vivo model analysis have shown exacerbated positive vessel remodeling possibly caused by local response to the polymer presence. Importantly, the association between exacerbated vessel enlargement and very late DES thrombosis has been recently demonstrated. Newly developed, the Vestasync™ Eluting Stent (VES) combines a stainless steel

platform with a nanothin-microporous hydroxyapatite surface coating impregnated with a polymer-free Sirolimus formulation (55μm) that elutes drug for more than 40 days. Hydroxyapatite has excellent biocompatibility and occurs naturally in the body. We sought to investigate the safety, performance and efficacy of this third generation polymer-free DES. **Methods:** In May 2007, 15 patients with single de novo lesion located in native coronary arteries with 3.0–3.5mm diameter and ≤14mm in length were consecutively enrolled. Primary endpoints were 30 days MACE (safety), and in-stent late lumen loss at 4 and 9 months (efficacy). All quantitative angiography and IVUS analysis were performed at independent core laboratories. **Results:** Baseline characteristics included mean age of 63 years, 33% women, and 16% diabetics. LAD was the prevalent target vessel (56%). Reference diameter was 2.8 ± 0.3mm, lesion length was 9.8 ± 2.0mm, and %DS was 62.8 ± 10.3. Pre dilatation was mandatory. VES was successfully implanted in 100% of lesions with final TIMI 3 flow obtained in all cases. Overall, mean stent size was 3.28±0.26mm with 19mm length. Post dilatation was required in 56% of the cases. There were no procedure and in-hospital complications (0% in-hospital MACE). Lifelong aspirin and 6-month clopidogrel were prescribed to all patients. At 4-month follow-up all patients were asymptomatic and returned for invasive follow-up. In-stent and in-segment late loss were 0.27 ± 0.27mm and 0.18 ± 0.31mm, respectively. In-stent volume obstruction measured by IVUS was 2.8%. **Conclusions:** The 3rd generation DES VES demonstrated safety and excellent short-term results in the treatment of de novo coronary lesions. Complete (9-month) clinical, angiographic and IVUS follow-up will be presented at the meeting.

P1123

The use of PICC in Infectious Endocarditis Treatment

P. Silva[1–2], A. Silva[1–2], C. Barros[1], G. Carvalho[1–2], L. Campos[1–2], P. Mota[1–2], P. Marinho[1–2], R. Barreiro Filho[1], R. Silva[2], T. Guimarães[1–3]. *[1]INSTITUTO NACIONAL DE CARDIOLOGIA [2]UNIVERSIDADE FEDERAL DO ESTADO DO RIO DE JANEIRO [3]UNIVERSIDADE FEDERAL DO RIO DE JANEIRO*

Introduction: The use of new types of materials and intravenous catheters in venous therapy is certainly an important technological advance, intend not only to ensure the survival but also the quality of care provided and to minimize the suffering of the patient. In Brazil, the Cateter Central of Insertion Peripheral (PICC) began to be known in 1993, initially brought by professional nurses and doctors, which returned from overseas travel. It is increasing the use of this device as at sectors of hospitalization as in intensive care to patients who need prolonged intravenous therapy. Today it is often used in the Infectious Endocarditis' (IE) treatment in hospitalized patients. The IE is the involvement of infectious endocardium, caused by bacteria (> 95% of cases) or fungi. The infection usually occurs on the endocardium valvar, but can acometer other structures, such as endocardium interventriculars communications, with aortic coarctation and valvar prothesis, resulting in hemodynamic instability as congestive heart failure, regurgitation, obstruction and valvar deterioration and condution disturbes ventricular atrium. **Objective:** To analyze the feasibility of the PICC in patients in prolonged antibiotic for infectious endocarditis. **Methodology:** The present study is descriptive, exploratory of quantitative analysis and retrospective character. It was realized in a Cardiology National Institute, in the state of Rio de Janeiro, Brazil. The sample was composed of 46 patients between 18 and 78 years, admitted in different wards and intensive care of the hospital, in the period May 2006 to August 2007. The inclusion criteria were: adult patients over 18 who received PICC for the infectious endocarditis treatment. The data collecting instrument was the implantation protocol of PICC used in the hospital. The data were analyzed by descriptive statistics and provisions as its absolute frequency (N) and relative (%), it will be organized and presented in graphics. **Result:** It was inserted 46 catheters for the treatment of IE, which 57% were removed only after the end of treatment that means therapeutic success, followed by remove of the catheter with fever associated to local hyperaemia (16%), catheter exteriorization (13%), obstruction of the catheter (7%) and 7 % associated to the patient's death or transfer to others hospitals. The average time permanence ranged from 06 to 52 days, with prevalence of 2–3 weeks with 52% and 44% more than four weeks. **Conclusion:** The use of the PICC in patients with infectious endocarditis, to prolonged antibiotic use has been shown effective and beneficial treatment option. In most cases, the catheter remains until final treatment, avoiding repetitive vascular punction, providing comfort and safety to the patient, and more practicality to the team. This fact shows the importance of the training of nurses to the insertion of the PICC and the permanent education of the team of nursing in the maintenance of this device.

P1125

Long-term results of drug-eluting stents for the treatment of saphenous vein grafts: What we learned from the DESIRE-SVG (Drug-Eluting Stents In REal world - Saphenous Vein Graft) Registry

J. Costa Jr[1], A Sousa[1], A Moreira[1], R Costa[1], G Maldonado[1], M Cano[1], E Egito[1], A Cury[1], O Berwanger[1], J Eduardo Sousa[1]. *[1]Hospital do Coração - Associação do Santório Sírio*

Background: Even in the DES era, PCI of saphenous vein graft (SVG) remains challenging due to the higher incidence of acute complications and unclear long-term results. We sought to evaluate the clinical results of consecutive "real-world" patients (pts) treated with these new devices. **Methods:** Since May 2002, 134 consecutive pts with SVG disease treated with DES were prospectively enrolled in the DESIRE-SVG registry. In our Institution all pts with lesions at SVG are pre treated with Enoxiparin (1mg/kg subcutaneous 2 BID), clopidogrel (loading dose of 600mg followed by 75mg/day), and aspirin (200mg/day) for 3 to 5 days before PCI. Distal protection was not used in these pts. Dual antiplatelet therapy was prescribed for 6 months. Clinical follow-up was obtained at 1, 3 and 6 months and then yearly, up to 5 years. **Results:** The mean age of the studied population was 68 ± 10 years with a predominance of male gender (83.6%). Diabetes (32%), acute coronary syndrome (39%) and multivessel disease (80%) were often noticed among these pts. Mean age of the grafts was 10 years. Reference vessel diameter and lesion length were 3.05±0.6mm and 14.5±6.6mm, respectively. Procedural success was achieved in 99%. Cumulative clinical outcome data is displayed in the table. **Conclusion:** The anti-thrombotic regimen prior PCI of SVG was associated with excellent acute results despite the non use of distal protection. However, after one year of follow-up, there was a clear deterioration of these results regardless of the use of DES.

Events	In-hospital	Up to 1 year	> 1 year
Cardiac death	2 (1.5%)	3 (2.2%)	6 (4.4%)
ST elevation MI/non ST elevation MI	0 / 8 (6.0%)	0 / 8 (6.0%)	2 (1.5%) / 10 (7.5%)
New PCI/ CABG	1 (0.7%) / 0	3 (2.2%) / 0	12 (8.9%) / 1 (0.7%)
Cumulative MACE	11 (8.2%)	14 (10.4%)	31 (23.1%)
Stent thrombosis	0	1 (0.7%)	2 (1.5%)

P1126

Tilt test in the investigation of exercise-induced syncope of unknown origin

A. Nobrega[1], R. Castro[2], A Souza[3]. *[1]Fluminense Federal University/Pro-Cardiaco Hospital [2]Fluminense Federal University/Pro-Cardiaco Hospital [3]Fluminense Federal University/Pro-Cardiaco Hospital*

Exercise-induced syncope (EIS) represents a great clinical challenge as it may be caused by benign conditions or by life-threatening diseases. Although tilt table testing is established as a useful tool for evaluation of unexplained syncope related to prolonged orthostatism, its role in the investigation of EIS is still unknown. **Purpose:** To determine the profile of responses to tilt test in patients with unexplained EIS. **Methods:** Patients (n=18, 12 men, age 46±22 years) with EIS, in whom no cardiac or other causes could be detected despite comprehensive clinical and laboratorial investigation, were submitted to a passive tilt test in the morning after overnight fasting. They were taking no medications and avoid tobacco and caffeine for 24 h before. Tilt test was performed after 20 min supine to 70 degrees rest using an electrically-controlled table. After 20 min without any symptoms, nitroglycerin (400 mcg, sub-lingual) was administered to increase the test sensitivity. During the whole test, continuous 12-lead surface ECG (HW, Brazil) and continuous blood pressure (digital infrared photoplethysmography ; Finometer®, Finapres, Netherlands) were recorded. The study was approved by the Institional Ethics Committee and all patients signed an informed consent form before entering the study. **Results:** Most patients (61.1%) presented neurocardiogenic syncope during tilt test – distributed between cardioinhibitory (27.3%), vasoplegic (9.1%), and mixed response (63.6%). Other patients presented the following results to tilt test – physiologic response: 27.3%, Postural Orthostatic Tachycardia Syndrome: 5.5%, dysautonomic profile: 0.6%, and postural hypotension: 5.5%. **Conclusion:** Tilt test identified the cause of syncope in 72.7% of this group of patients with EIS of previously unknown origin, being neurocardiogenic the most common mechanism. Thus, in subjects presenting with exercise-induced syncope, where cardiac or other causes have been excluded, tilt table testing seems to be useful to identify the mechanism responsible for the syncope.

P1127

Differential influences of high fat diet on cardiac remodeling from normotensive and spontaneously hypertensive rats

S. A. Oliveira Júnior[1], A. P. Lima-Leopoldo[1], P. F. Martinez[1], D. H. S. Campos[1], M. M. Sugizaki[1], M. P. Okoshi[1], K. Okoshi[1], C. R. Padovani[2], M. Dal Pai-Silva[2], A. C. Cicogna[1]. *[1]Botucatu Medical School, São Paulo State University - UNESP, Brazil. [2]Botucatu Biosciences Institute, São Paulo State University - UNESP, Brazil.*

Objective: High fat diet has been shown to induce cardiac remodeling in normotensive rats. In this study, we examined the influence of a high fat diet (HFD) on nutritional parameters and cardiac remodeling in normotensive Wistar Kyoto (WKY) and spontaneously hypertensive rats (SHR). **Methods:** Sixty-day-old WKY (n=20) and SHR (n=20) were fed a control diet (C, 3.15 Kcal/g) or a HFD (HFD, 4.61 Kcal/g) for 20 weeks. Systolic blood pressure (SBP) was measured before and after diet intervention. Cardiac structure and function were assessed by echocardiogram, and glycemia was evaluated by glucose test tolerance. Contractile proteins composition, particularly myosin heavy chain, was analyzed by sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE). Association between body weight and visceral, epididymal and retroperitoneal adipose depots was evaluated by Pearson's linear correlation. Nutritional variables and SBP were analyzed by two-way MANOVA in repeated measures model. The other parameters were analyzed by two-way ANOVA and Tukey test. **Results:** HFD induced an increase of body weight in both strains (WKY-C 481.6±39.4 g; WKY-HFD 611.4±48.2 g; $p<0.05$; SHR-C 370.3±16.0 g; SHR-HFD 410.8±9.3 g; $p<0.05$). All adipose depots were increased with the HFD ($p<0.05$) in both strains and the WKY-HFD presented greater values of fat depots than the SHR-HFD. Alimentar efficiency was increased only in the WKY-HFD group and glycemic tolerance was impaired after HFD in both strains. The correlations between adipose depots and body weight were significant ($p<0.05$) in both strains. However, in the SHR-HFD, there was no significant correlation between body weight and retroperitoneal fat. SBP was greater in the SHR groups than in the WKY and did not change after the HFD. The left ventricular mass/body weight ratio was greater in SHR groups compared to the WKY groups and did not change after HFD. The left ventricular function was improved in both SHR strains compared to the WKY. HFD increased the posterior wall diastolic thickness only in the SHR strain (SHR-C 1.84±0.13 mm; SHR-HFD 1.95±0.16 mm; $p<0.05$) and elevated the left ventricular fractional shortening only in the WKY strain (WKY-C 44.8±3.1; WKY-HFD 49.8±5.3; $p<0.05$). The beta-myosin/alpha-myosin ratio was increased within WKY strain (WKY-C 0.934±0.432; WKY-HFD 1.453±0.265; $p=0.006$) and unchanged in the SHR (SHR-C 0.667±0.086; SHR-HFD 0.782±0.083; $p>0.05$). **Conclusion:** A high fat diet induces cardiac remodeling in both strains. In the WKY, the HFD increased the left ventricular fractional shortening and the beta-myosin/alpha-myosin ratio toward a fetal gene program. In the SHR, the HFD increased the posterior wall diastolic thickness.

P1128

Impact of Invasive Strategy in elderly patients presenting with non-ST elevation acute coronary syndromes

C. Lourenço[1], R. Teixeira[2], N. António[3], S. Monteiro[4], S. Costa[5], F. Gonçalves[6], P. Monteiro[7], L. Gonçalves[8], M. Freitas[9], L.A. Providência[10]. *[1]Coimbra University Hospital [2]Coimbra University Hospital [3]Coimbra University Hospital [4]Coimbra University Hospital [5]Coimbra University Hospital [6]Coimbra University Hospital [7]Coimbra University Hospital [8]Coimbra University Hospital [9]Coimbra University Hospital [10]Coimbra University Hospital*

Background: In acute coronary syndromes (ACS), prognosis after primary percutaneous coronary intervention (PCI) in ST-elevation myocardial infarction has been extensively studied. Outcomes of patients who undergo early PCI for non-ST ACS are less well established. Because elderly patients are more prone to procedure-related complications, the best approach in the management of this population in still matter of debate. Aim: To compare in-hospital outcome of elderly patients submitted or not to coronary angiography and PCI. **Methods:** Retrospective analysis of 307 patients hospitalized for non-ST ACS, aged over 75. Patients were divided in two groups: A (n=91) – early invasive strategy (during index hospitalization) and B (n=216) – conservative strategy. **Results:** Group A patients were older (81.44±3.94 vs 79.79±3.23Y, p<0.001), had higher proportion of women (49.1 vs 36.3%, p=0.039), higher levels of myocardial necrosis markers and were more often treated with diuretics during hospitalization. Group B presented more often on Killip class I (86.4 vs 73.1 %, p=0.013), had higher prevalence of previous angina (80.2 vs 64.6 %, p=0.009), was more often treated with clopidogrel and enoxaparin, had a longer hospital stay (5.8±3.1 vs 4.9±2.6 days, p=0.012) and a higher rate of in-hospital morbidity (13.6 vs 4.9%, p=0.009); patients in this group were also more likely to undergo coronary artery bypass grafting after ACS. There were no differences between groups regarding cardiovascular risk factors, TIMI score, previous hospitalization or medication, hemoglobin or creatinine levels, ejection fraction or in-hospital mortality. Multivariate analysis showed that performance of coronary angiography or PCI were independent predictors of in-hospital morbidity (p=0.015, OR=3.549), as were female gender (p=0.024, OR=0.25) and Killip Class >1 (p=0.005, OR=4.556). **Conclusions:** Unlike younger ACS patients, in this elderly population an invasive strategy was associated with worse in-hospital outcome, probably due to procedure-related complications, thus determining higher length of stay. Further studies are therefore needed to determine the risk/benefit ratio of an invasive strategy in a non-ST ACS elderly population.

P1129

NON ST-SEGMENT ELEVATION ACUTE CORONARY SYNDROMES. ANTECEDENTS, CLINICAL PRESENTATION AND PREDICTORS OF PROGNOSIS BY MULTIVARIATE ANALYSIS

H. Pomés Iparraguirre[1–2], **G Calderón**[1], W Santander[2], JH Leguizamón[1], O Paredes[2], G Kuhn[1], A Arias Posada[2], L Ferrer[1], R Aguero[1], G Valeriano[2]. *[1]SANATORIO FRANCHIN, BUENOS AIRES, ARGENTINA [2]INCOR, LA RIOJA, ARGENTINA*

Objectives: to analize the clinical presentation and prognosis in patients with non-ST elevation acute coronary syndromes (ACS). **Methods:** 503 consecutive patients were retrospectively studied (378 men and 125 women, mean age: 59.8 ± 11.6 years). We evaluated the association of gender, age, previous history, clinical presentation (unstable angina or NSTEMI), high risk (HR) stratification at admission (ACC/AHA criteria), ST-depression at initial ECG (↓ ST), and response to treatment (refractory angina -REF-) with inhospital outcome by univariate analysis (chi square, Kruskal-Wallis test): mortality (MORT), (re)-infarction (reINF), mortality and (re)-infarction (M/reINF), and combined events (CE): MORT, reINF, angina and revascularization. The independent predictors of outcome were obtained by multivariate analysis (logistic regression). **Results:** the outcomes were as follows: MORT: 1%; reINF: 3.4%; M/reINF: 4.4%; and CE: 28,4%. The associated variables were as follows: to reINF: NSTEMI (14.6% vs 2.2%, p= 0.001); HR (5.5% vs 2%, p= 0.042); REF (13.8% vs 2.7%, p=0.013), and there was a trend for ↓ ST (6.6% vs 2.4%, p= 0.07); to MORT: REF (6.9% vs 0.6%, p=0.029) and there was a trend for previous heart failure (HF: 4% vs 0.7%, p= 0.08) and HR (2% vs 0.3%, p= 0.08); to M/reINF: NSTEMI (16.7% vs 3.1%, p=0.0001); ↓ ST (8.3% vs 3.2%, p= 0.05); HR (7% vs 2.6%, p= 0.025); REF (17.2% vs 3.6%, p= 0.006), and there was a trend for inhospital HF (12.5% vs 4%, p= 0.08); to CE: gender (men: 32.5% vs 16%, p< 0.001); smokers (33.8% vs 24.5%, p< 0.03); recent onset angina (ROA: 33.3% vs 24%, p< 0.02); NSTEMI (47.9% vs 26.4%, p< 0.004), and HR (39.2% vs 21.4%, p< 0.001). The independent predictors of outcomes were as follows: MORT: previous HF (p= 0.046) and REF (p= 0.015); reINF: NSTEMI (p= 0.002) and there was a trend for REF (p= 0,068); M/reINF: NSTEMI (p=0.002) and there was a trend for REF (p= 0.062); CE: gender (men, p= 0.016), HR (p= 0.0007) and there was a trend for ROA (p= 0.06). ECG without ST-T changes was an independent predictor of absence of CE (p= 0.002). **Conclusions:** 1) the rates of inhospital events were similar to the international registries. 2) Men, smokers and patients with recent onset of angina, NSTEMI, ↓ ST and high risk at admission, and lack of response to treatment had more events during hospitalization. 3) Whereas gender (men), previous history of heart failure, clinical presentation as NSTEMI, high risk stratification at admission and REF were independent predictors of worse prognosis, the absence of ST-T changes at initial ECG was predictor of uneventful outcome.

P1130

Exercise antioxidant protective effect improves cardiovascular and renal function in diabetic hypertensive rats

T. S. Cunha[1–2], R. H. Mendes[3], M. Bertagnolli[3], G. Cã,ndido[2], J.P. Aguiar[2], K. Flues[2], K. De Angelis[4], F.K. Marcondes[1], A. Belló,-Klein[3], M.C. Irigoyen[2]. *[1]Physiological Sciences, Dental School of Piracicaba, UNICAMP, Piracicaba, SP, Brazil [2]Hypertension Unit, Heart Institute, School of Medicine FMUSP, SP, Brazil [3]Laboratory of Cardiovascular Physiology, Department of Physiology, Basic and Health Science Institute, Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil [4]Human Movement Laboratory, Sã,o Judas Tadeu University, SP, Brazil*

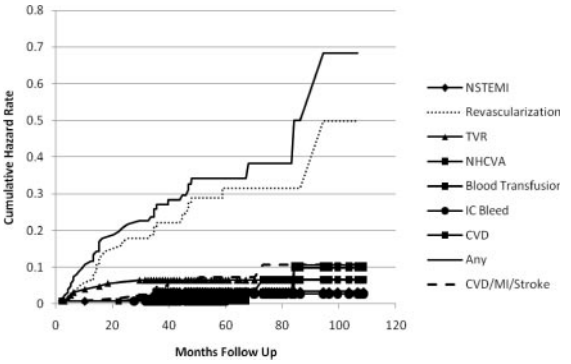
Increased oxidative stress has been proposed to play a major role in the pathogenesis of cardiovascular and renal complications of diabetes and is also involved in the pathogenesis of hypertension. On the other hand, previous studies showed that moderate exercise training decreases oxidative stress, improving physiological and functional capacity of these systems under pathological conditions. Therefore, the aim of this work was to determine the effect of moderate exercise training on renal function and oxidative stress under concurrence of diabetes and hypertension. Spontaneous hypertensive rats (SHR; 3 months old) were made diabetic with an injection of streptozotocin (STZ, 50 mg/Kg), and randomized into 2 groups: sedentary diabetic SHR (S, n=8) and trained diabetic SHR (T, n=8). Moderate exercise training was performed on a treadmill (1 h/day, 5 days/week, 10 weeks), and after 10 weeks on physical training, mean arterial pressure (MAP), blood glucose, 24 hr urine volume and proteinuria were evaluated. Kidney was excised for measurement of oxidative damage (lipoperoxidation – LPO) and antioxidant enzymes activity (superoxide dismutase – SOD, catalase – CAT, and glutathione peroxidase – GPX activity). Data were compared by unpaired Student's t-test (p<0.05). Exercise training reduced MAP (T= 103 ± 5 vs. S=125 ± 5 mmHg), blood glucose (T= 390 ± 30 vs. S=455 ± 16 mg/dL), urine volume (T=81 ± 7 vs. S=104 ± 2 mL/24h) and proteinuria (T=0.20 ± 0.03 vs. S=0.42 ± 0.07 g/L). Renal LPO was markedly reduced after physical training (51% reduction; T=1104 ± 178 vs. S=2257 ± 304 counts per second/mg protein) and antioxidant enzyme analysis showed that physical training significantly increased SOD (T=10.5 ± 0.6 vs. S=8.4 ± 0.4 U/mg protein), CAT (T=224 ± 23 vs. S=160 ± 16 pmol/mg protein) and GPX (T=7.8 ± 0.6 vs. S=6.6 ± 0.5 nmol/min per mg protein) activity in renal tissue. Our data show that moderate exercise training reduces oxidative stress in renal tissue from diabetic SHR rats, decreasing LPO and increasing antioxidant enzymes activity. As shown on this study, the antioxidant protective effect of moderate exercise training seems to have an important influence on blood pressure and renal function in this animal model, and possibly may be one of the target systems on the treatment of diabetic hypertensive patients. Financial Support: FAEPEX - UNICAMP, CNPq.

P1131

Chronic Clopidogrel and Aspirin Therapy for Coronary Artery Disease: A 10 year Clinical Follow-Up

S. Krishna[1], **R. Suneja**[1], P.C. Chabot[3], N. Kleiman[2]. *[1]CARDIOLOGY CENTER OF HOUSTON [2]CARDIOLOGY CENTER OF HOUSTON [3]MINIMAX CONSULTING, LLC [4]METHODIST DEBAKEY HEART CENTER*

Background: Clopidogrel(CL) and Aspirin (ASA) use as therapy for Coronary Artery Disease(CAD) has thus far been studied for only up to 3 yrs. Our study objective was to assess the efficacy and safety of CL and ASA concomitant use as therapy for CAD from 36 months up to 110 months. **Methods:** Patients from a clinical cardiology practice treated for CAD defined as having a history of Coronary Intervention and/or Coronary Artery Bypass Graft Surgery (CABG) treated with CL and ASA from 36 up to 110 months were identified through systematic chart review. All patients received ASA 81mg and CL 75 mg in addition to medical therapy for CAD. Major adverse cardiovascular events (MACE) defined as cardiovascular death (CVD), nonfatal myocardial infarction (MI), cerebrovascular events (CVA) and revascularization(percutaneous and/or surgical), were identified. Bleeding complications defined as Blood Transfusion greater than or equal to 2units and/or Intracranial bleed were also calculated. Statistical analysis was done using Kaplan Meier equation. **Results:** 129 patients with a median age of 66 yrs (range 47–89 yrs) were treated with CL and ASA for a total of 7862 months (median 58 months, range 36–110 months). The annualized combined event rate for MACE and bleeding complications was 8.44%, CVD was 0.53%, MI was 0.73 % (all non ST elevation) and CVA (all Transient Ischemic Attacks) was 0.71%. Annualized event rate for Intracranial hemorrhage (all non fatal and subdural) was 0.35% and blood transfusion was 0.35%. **Conclusion:** Our observations suggest CL and ASA can be safely administered as chronic therapy for CAD with low long term MACE and acceptable low bleeding complications.



P1132

Role of M-mode septal to posterior wall motion delay as predictor of response to cardiac resynchronization therapy

N. António[1], L. Coelho[1], S. Costa[1], H. Vieira[1], R. Martins[1], M. Ventura[1], J. Cristóvão[1], L. Elvas[1], L. Gonçalves[1], L.A. Providência[1]. [1]*Coimbra University Hospital and Medical School*

Background: The cardiac resynchronization therapy (CRT) has emerged as an important resource in the management of patients with advanced heart failure, severe left ventricular (LV) dysfunction and LV dyssynchrony inferred by the QRS duration. However, it is known that the correlation between QRS duration and LV dyssynchrony is poor. The M-mode septal-to-posterior wall motion delay (SPWMD) is available in current echocardiographic equipments and has been described as predictor of response to CRT. Purpose: To evaluate the feasibility of SPWMD assessment in a population with dilated cardiomyopathy (DCM). We also aimed to identify its probabilistic value as predictor of response to CRT. **Methods:** We studied 59 patients (pts) with DCM, mean age 61.7 ± 11.1 years-old, 36 (61.0%) male, 22 (37.3%) with ischemic etiology, before and 3 months after CRT. SPWMD was calculated in parasternal long axis view, by M-mode, at a sweep speed of 100 mm/s, between the point of greater excursion of the intra-ventricular septum and the LV posterior wall. SPWMD > 130 ms values were considered predictors of response, while a positive response to CRT (responder) has been considered if functional class improved by at least one and ejection fraction increased by more than 10 %, three months after the biventricular "pacemaker" implantation. **Results:** The SPWMD was not measurable in 28 (47.5%) pts, 9 (32.1%) of them had ischemic etiology. Only 31 patients (52.5%), mean age 61.0 ± 10.5 years-old, 13 (41.9%) male, 13 (41.9%) with ischemic etiology, NYHA class 3.2 ± 0.6, LV ejection fraction 23.4 ± 7.7 %, had unequivocal M-mode registers. Among these, 17 (54.8%) revealed SPWMD > 130 ms. After CRT, 9 (52.9%) of these pts fulfilled responder criteria. A SPWMD > 130 ms showed a sensitivity of 71.4% and a specificity of 52.9% to predict response to CRT. **Conclusions:** Ischemic etiology seems to be less important than previous admitted. When measurable, what happened in half of the pts, a cut-off of 130 ms was associated to acceptable levels of sensitivity and specificity. So, it should not be excluded when selecting pts to CRT.

P1133

Is an invasive strategy useful in women with non-ST acute coronary syndrome?

R. Teixeira[1], C. Lourenço[2], N. Antonio[3], S. Monteiro[4], S. Costa[5], F. Gonçalves[6], P. Monteiro[7], L. Gonçalves[8], M. Freitas[9], L.A. Providencia[10]. [1]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [2]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [3]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [4]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [5]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [6]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [7]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [8]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [9]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL* [10]*COIMBRA UNIVERSITY HOSPITAL AND MEDICAL SCHOOL*

Background: Previous investigators have reported gender differences in the management of patients with acute coronary syndrome (ACS). The majority of trials comparing an invasive strategy with a conservative one for the management of unstable angina (UA) and non ST elevation myocardial infarction (NSTEMI) have demonstrated a benefit for men. Nevertheless, in females results have been conflicting and no consensus has yet been settled. Purpose: To assess the impact of an invasive versus a conservative strategy in the in-hospital outcome in women admitted for UA/NSTEMI. **Material and Methods:** Retrospective analysis of 347 female patients admitted to a single coronary unit between May 2004 and July 2007. Patients were divided in 2 groups, group A (n=197) – conservative strategy; and group B (n=150) – invasive strategy. **Results:** Group A was older (74.49 ± 10.15 vs 66.23 ± 11.62, p<0,001), had higher incidence of type 2 diabetes (36.2 vs 23.6%, p=0.029), atrial fibrillation, and received more diuretics during hospital stay. Patients in this group also had significantly higher inflammatory markers, lower creatinine clearance (50.7 ± 32.8 vs 63.1 ± 35.3, p<0.001), decreased ejection fraction (52.83 ± 9.59 vs 56.65 ± 8.29, p=0.001) and shorter hospital stay (4.6 ± 2.4 versus 5.2 ± 2.6, p=0.017). Group B had more previously known coronary heart disease (71.1 vs 59.3%, p=0.023), presented more often on Killip class I (84.6 vs 70.1, p=0.002), had lower TIMI risk scores, received more anti-platelet therapy and at discharge were more often on B-blocker and dual anti-platelet therapy. There were no differences between groups concerning previous medications and cardiac biomarkers. The type of strategy used in this population did not significantly influence in-hospital mortality, morbidity and readmission rates, which were similar in both groups. **Conclusions:** Our results support the hypothesis that women may not benefit as much as men from an invasive strategy in the setting of an UA/NSTEMI. Long-term follow-up of this population will enable us to determine the long-term outcome of both these groups. In the meantime, adequate risk/benefit evaluation is critical in both male and female patients to ensure optimization of short and long-term prognosis after an ACS.

P1134

Very long-term clinical outcomes of a consecutive high-complexity population treated with drug-eluting stents: Results of the DESIRE (Drug Eluting Stents In the REal world) Registry

J. Costa Jr[1], A Sousa[1], R Costa[1], A Moreira[1], M Cano[1], G Maldonado[1], C Jardim[1], M Helena Dib[1], C Campos[1], J Eduardo Sousa[1]. [1]*Hospital do Coração - Associação do Sanatório Sírio*

Background: Regardless of the FDA strict indications for drug-eluting stent (DES) deployment, cardiologists have expanded the formal recommendations and treated more complex patients (pts) and lesions. However, long-term efficacy and safety of the "off-label" use of these new devices is yet to be demonstrated. We sought to evaluate the early and late (> 1 year) clinical outcomes of DES in "real world" pts. **Methods:** The DESIRE registry is a prospective, open-labeled, non-randomized registry with 1,522 consecutive pts treated solely with DES between May 2003 and March 2007. Virtually all subsets of pts and lesions are represented in this study. Stent thrombosis was classified according to the Academic Research Consortium definition. Pts were clinically evaluated at 1, 3 and 6 months and then annually up to 4 years. **Results:** Cypher™ was the predominant DES in this registry (83.5%). The mean age of the sample was 64 + 11years. The majority of the pts were male (76%) with multivessel disease (54%). Diabetes was detected in 31% of them and 39% presented with acute coronary syndrome. 6.5% of the treated lesions were located in SVGs and 4.5% were ISR. A total of 2,170 stents were used to treat 2,002 lesions in 1,808 vessels. Stents were directly deployed in 59% of the cases. Reference vessel diameter was 2.75 +0.5mm and lesion length was 16 +7.8mm. Clinical follow-up was obtained in 98.6% of the patients (mean follow-up time was 2.5 ±1.1 years). The long-term cumulative events are described in the table.

Adverse Events	1 month n= 1,501	Up to 1 Year* n= 1,476	> 1 year* n=1,015
Non Q-wave	22 (1%)	26 (1.8%)	29 (2.8%)
Q-wave	3 (0.2%)	6 (0.4%)	10 (1.0%)
TLR-PTCA	2 (0.1%)	19 (1.3%)	40 (3.9%)
TLR- CABG	1 (0.05%)	12 (0.8%)	15 (1.5%)
Cardiac death	9 (0.5%)	20 (1.3%)	36 (3.5%)
MACE	37 (2%)	83(5%)	130 (12.8%)
Stent thrombosis			
- Definite	3 (0.2%)	9 (0.6%)	10 (0.7%)
-Possible	1 (0.06%)	7 (0.5%)	13 (1.1%)

TLR- target lesion revascularization; PTCA- percutaneous transluminal coronary angioplasty; CABG- coronary artery bypass graft; MACE major adverse cardiac events.

* Cumulative events

Conclusion: The use of DES in a "real world" population is associated with long-term safety and effectiveness with acceptable low rates of adverse clinical events.

P1135

Vascular risk factors in perimenopausal female physicians in Argentina

H. Z. Zylbersztejn, Horacio[1], A.M. Mulassi, Andres[2], A.C. Cardone, Alberto[3], A.P. Picarel, Anibal[4], A.R. Robilotte Analia[5], E.P. Pautasso, Enrique[6], S.K. Kusznier, Silvia[7], C.B. Belziti, Cesar[8]. [1]*Research Area and Epidemiology Council. Argentine Society of Cardiology* [2]*Research Area and Epidemiology Council. Argentine Society of Cardiology* [3]*Research Area and Epidemiology Council. Argentine Society of Cardiology* [4]*Research Area. Argentine Society of Cardiology* [5]*Research Area. Argentine Society of Cardiology* [6]*Research Area. Argentine Society of Cardiology* [7]*Research Area. Argentine Society of Cardiology* [8]*Research Area. Argentine Society of Cardiology*

Objective: To evaluate the prevalence of vascular risk factors (VRF) in female physicians aged >46 years in Argentina. Material and **Methods:** Cross sectional study. Female physicians of >46 years of various medial specialties (enrolled in TAMARA study, 2004) were interviewed. We measured the prevalence of VRF and its likely association with the presence of menopause. The following were assessed: age; body mass index > 25 (BMI > 25); arterial hypertension (AH); diabetes (DM); hypercholesterolemia (hyperchol); nicotine addiction-current smoking (CS) and sedentary lifestyle (SL). **Results:** n = 637; age: 51.5+5.4; menopause: 56.3%

Variables	No Menopause (%)	Menopause (%)	O.R.	p
Age (y)	49±3 y	53±6 y		<0.00001
BMI =>25 (24.5%)	28.8	38.9	1.58 (1.09–2.29)	0.01
AH (20.7%)	16.1	24.2	1.65 (1.06–2.58)	0.01
DM (2.1%)	1.2	2.8	2.37 (0.58–11.3)	0.18
Hypercol (20.7%)	15.4	24.8	1.81 (1.16–2.85)	0.005
CS (36.9%)	35.3	38.2	1.13 (0.79–1.62)	0.48
SL (52.8%)	50.0	54.9	0.82 (1.58–1.16)	0.24

Conclusions: A high prevalence of SL and NA was observed in the studied population. Menopausal physicians showed a higher prevalence of AH, elevated BMI and hypercholesterolemia, with a higher tendency to DM. No statistically significant differences were observed in respect to NA or SL.

P1136

RISK OF HEMODIALYSIS AFTER HEART SURGERY

B. Santos[1], S. Olival[1], R. Gomes[1], A. Rouge[1], L. Alves[1], M. Freitas[1], R. Vegni[1], W. Homena[1], J. O. R. Brito[1], O. N. Barbosa[1]. [1]*Instituto Nacional de Cardiologia*

Background: Renal failure requiring hemodialysis increases mortality, hospitalization length and costs, and worsens quality of life among patients who undergo heart surgery. **Objective:** To assess factors associated to hemodialysis requirement after heart surgery. Design: Non-concurrent cohort study. **Methods:** Patients who underwent heart surgery from January 2002 to August 2005 were consecutively sampled. We analyzed the association between hemodialysis and 25 preoperative, 4 peroperative and 9 postoperative variables. Univariate analysis was performed using t, Mann-Whitney, chi-squared and Fisher exact tests. Variables which attained p values less than 0.25 were tested in a multivariate logistic regression model. We also used an exhaustive CHAID (chi-squared authomatic interaction detection) algorithm to build a classification tree of hemodialysis requirement. **Results:** We analyzed 2007 patients. Sample median age was 58 (interquartile range: 48–67) years; 739 (36.8%) patients were women. Surgeries included 1282 coronary bypasses, 684 valve surgeries and 250 other surgeries; 206 patients underwent combined surgeries. Hemodialysis was needed in 83 (4.1%) patients. The final logistic regression model was discarded due to overfitting. CHAID algorithm identified a risk of dialysis over 10% in patients with EuroSCORE > 6 or EuroSCORE 3 to 5 associated with postoperative atrial fibrillation. Risk of dialysis was very low (0.15%) in patients with EuroScore < 2 who received less than five blood component units during surgery and were hemodynamically stable postoperatively. **Conclusion:** The analysis of only four variables

(EuroScore, blood transfusion during surgery, postoperative shock and postoperative atrial fibrillation) provided a good risk classification for hemodialysis requirement after heart surgery.

P1137

SYNCOPE WITH INJURY. DIAGNOSTIC AND OUTCOME

N. Galizio[1], L. Soriano[1], G. Fava[1], J.L. Gonzalez[1], L. Medesani[1], P. Montoya[1], S. Schanz[1], R. Ramon[1], H. Ramirez[1]. [1]*FUNDACION FAVALORO*

Introduction: Syncope is a common problem. Capturing the cause of syncope is difficult. The causal origin is often presumptive. A syncope with injury has been associated with poor outcome. Thus, the primary purpose of the evaluation is to determine if they have an increased risk of death. Objective: To assess causes and outcome of patients with syncope with injury or car accident. **Methods:** From May 2003 to October 2007, 316 p with syncope were prospectively evaluated. One hundred and one p (31,9%) had syncope with injury, defined as an episode of syncope causing significant injuries or car accident. A diagnostic algorithm based in the initial evaluation (history, physical examination, blood pressure, ECG, carotid sinus massage) and the selection of specific tests from this baseline information was performed. Patients were divided into 2 groups: Group A (GA) Structural heart disease and/or abnormal ECG (77 p; 76,2%). Group B (GB) without structural heart disease and normal ECG (24 p; 23,7%). Baseline characteristics: Mean age: 66"b16 years; Male: 57%. GA: abnormal ECG 23 p, ischemic myocardiopathy 26 p, dilated myocardiopathy 26 p, systemic amiloidosis 1 p, pulmonary hypertension 1 p. Seven p (7%) had a car accident during syncope episode. The follow up was 27"b15 month. **Results: 1)** Diagnosis: At least one cause of syncope was found in 89% of the p (GA 88% vs GB 91,6%). Arrhythmic syncope: GA 61% vs GB: 20%. Neurally-mediated syncope (NS) and orthostatic hypotension: GA 23% vs GB 71%. **2)** Recurrence: Recurrent syncope was observed in 7 p (6,9%). GA 5 p (6,5%), 3 p with previous diagnostic of NS and 2 p with arrhythmic syncope treated with permanent pacemaker. GB: 2 p (8,3%) who had previous diagnostic of NS. All new episode of syncope was considered as NS. **3)** Mortality: GA 16 p (20,7%) vs GB 0%. The death was non cardiac in 11 p (14,2%) and cardiac in 5 p (6,5%). All patients with car accident had arrhithmic syncope. Four p received AICD and 3 p pacemaker. They did not have recurrent syncope nor death with the stablished treatment. **Conclusion:** The principal cause of syncope was arrhythmic in GA and NS and/or orthostatic hypotension in GB. The rate of recurrence was low in both groups. The mortality in GA was 20,7%, mainly by non-cardiac cause. Patients with car accident had arrhithmic syncope. They were diagnosed and treated properly, without suffering recurrence or death.

P1139

Diagnosis of the Metabolic Syndrome and its Relation with Insulin Resistance.

G. Giunta[1], L. Cuniberti[2], C. Escarain[1], N. Pizzi[1], S. Lynch[1], A. Miranda[1], A. Christen[1], G. Yannarelli[2], R. Sanchez[1], H. Baglivo[1]. [1]*FAVALORO FOUNDATION* [2]*UNIVERSIDAD FAVALORO*

Insulin Resistance (IR) is postulated as a main factor for cardiovascular risk. Metabolic Syndrome (MS) is supposed to be the clinical manifestation of IR. Few data confirm the relationship between the presence of MS, diagnosed by ATP III chriteria, and IR. **Objectives** a) To evaluate the association between MS, defined by ATP III criteria, and IR measured by the Homeostasis Model Assessment for IR (HOMA –IR), b) establish the prevalence of different subtypes of MS and individual patterns of IR, c) to demonstrate that MS is an heterogeneous syndrome. **Materials and Methods** Consecutive patients (Pat) from our database were selected for the analysis. Diabetes, hypothyroidism, chronic renal failure and chronic hepatopathy were considered as exclusion criteria. Presence of MS was assessed by ATP III criteria. Diagnosis of dyslipemia consisted in low HDL and/or high triglycerides. MS Pat were therefore classified in six groups according with the diagnostic criteria: Group1: Hypertension (HT), Elevated plasma Glucose (GLU), and presence of dyslipemia (DLP); Group 2: HT, GLU and abdominal obesity (ABD); Group 3: HT, ABD and DLP; Group 4: ABD, DLP and GLU; Group 5: HT, DLP, ABD and GLU. An additional Group (6) was created to include MS Pa with both, low HDL and high triglycerides, and one more criteria. IR was defined by HOMA-IR. **Results** Data were achieved from 309 Pat, of whom 175 were men (56.6%). The mean age was 51 $\pm$ 13 years. Only 5.8% (18 Pat) had antecedents of vascular events, and 43% (133 Pat) fulfilled MS criteria. Table 1 shows de prevalence of Groups with MS, glucose (mg/dL), insulin(mg/dL) and HOMA-IR levels. When difference between groups was assessed by Tukey post-ANOVA all pairwise comparison Test, Group4 and Group5 revealed more elevated HOMA-IR than all the other Groups ($p<0,05$). **Conclusion** The different subclasses of MS showed different prevalence and patterns of IR. Our results confirm that MS is heterogeneous with regard to glucose intolerance.

	No MS (%)	Group1	Group2	Group3	Group4	Group5	Group6
Prevalence	176(57)	9(2.9)	16(5.2)	45(14.6)	8(2.6)	36(11.6)	19(6.1)
Glucose+	91.2±0.7	106.8±3.3*	105.6±2.4*	89.7±2.5	107.4±3.3*	116.8±1.7*	92.4±2.3
Insulin+	7±0.4	10.1±1.8*	7.9±1.3	9±0.7*	14.2±1.6*	11.8±0.8*	8.5±1.11*
HOMA-IR+	1.5±0.1	2.6±0.5*	2±0.35*	2±0.2*	3.8±0.45*	3.5±0.2*	1.9±0.3*

* $p<0.05$ versus control (t-test), + $p<0.001$ (ANOVA).

P1140

C Reactive Protein and Cardiac I Troponin. Two Sides of the Same Medal ?

D. Di Nanno[1], L Lopez[1], M. Consoli[1], F. Petrolito[1], A. Costa[1], L. Saclietti[1], C. Pasinato[1], S. Chekherdemian[1].

Background: Cardiac I troponin (TnI) and C reactive protein (CRP) are well known cardiac risk markers at short and mid term for major events in patients with acute coronary syndromes without ST segment elevation (NSTEMI). These markers represent different pathophysiologic mechanisms. This difference opens the question about their relationship in the evolution of NSTEMI. Aim: To determine the association between TnI and CRP in patients admitted with NSTEMI. **Methods:** We included 141 patients with NSTEMI within 24 hours of the last chest pain. We measured TnI with at least 8 hours after the last episode of chest pain. The cut off value for our method was 0.05 nanograms per mililiter. CRP was measured at 24 hours after admision and the cut off value was 1 miligram per liter. **Results:** The mean value of TnI in our population was 0.33 nanograms per mililiter and CRP 5.2 miligrams per liter. We did a linear regression analysis and the we obtained $r= 0.32$ and $r^2= 0.10$. **Conclusions:** In our population the correlation coefficient was very low concluding that CRP measured at 24 hours since the admision had poor association with TnI.

P1141

A new Strategy for Rheumatic Fever Prevention through Health Education – PREFERE Program, Rio de Janeiro, Brazil

R.E.M Regina Elizabeth Muller[1], M. C. K. Maria Cristina Kuschnir[1–2], B.R.T. Bernardo Rangel Tura[1], R. M. A. X Regina Maria Aquino Xavier[1], M. J. L. S Maria José Lucas M. Da Silva[1], A. L. S Ana Lucia Schilke[3], F. F. N. Fabiana F. Nascimento[3], A. E. A. S Anna Esther Araújo E Silva[3], A. B. L. Ana Beatriz Lima[1], M. F. C. M[arcia Fernanda De Carvalho[4]. [1]*National Institute of Cardiology, Brazil* [2]*Rio de Janeior State University, Brazil* [3]*PREFERE Program, Brazil* [4]*Rio de Janeiro Federal University, Brazil*

Introduction – Rheumatic fever (RF) is the most common cause of acquired heart disease in children and young adults all over the world. In Brazil RF remains as major problem, responsible for high mortality and morbidity rates and for big social impact over the society. WHO technical report, in 1999, is considered prevention of RF priority, as it causes 400.000 deaths/year worldwide. The prevalence in children ando adolescents reaches 1%. The proposed strategy is based on an anterior experience related to Iyengar et al in India. **Objective** – To create a Rheumatic Fever Prevention Program (PREFERE) by construting an information network about streptococcal tonsillitis and rheumatic fever in schools as the main strategy. Suspected cases of streptococcal pharyngitis and acute RF would also be recognized and refered to health centres or hospitals for diagnosis and treatment. **Methods** –It is a prospective cohort. We elaborated pedagogic material and training for "key teachers" to disseminate information about RF in schools. They should also refer suspected cases of pharyngitis and RF for diagnosis. To train health professionals in diagnosis and adequate treatment of streptococcal pharyngitis with special attention for the use of benzathine penicillin as first choice for treatment. **Results** – as a result of an initial intervention in a period of 6 month, 30 teachers and 136 health professionals, from 25 health centres, were trained. Teachers started working in 30 primary schools, conveying information about the disease to 15.000 pupils. Several diverse materials were designed by the pupils as result of pedagogic projects among the schools, and they were exposed in public exhibitions. Regular surveying meetings were organized in which only the "key teachers" took part. An investigation form for streptococcal tonsillitis and RF was created, but not widely implemented. In some health units there was only an slight increase in laboratorial diagnosis and use of benzathine penicillin. Teachers and healthy professionals were stimulated to organize common sessions and activities including pupils relatives and the community in general, but it happened seldom. **Conclusions** – The strategy based on dissemination of information about streptococcal tonsillitis and RF through pedagogic projects in schools leads to population awareness of the risks related to sore throat infections. The relation between health promotion, diseases prevention and the school, create an adequate attitude among the new generations that can be responsible for the control of RF in Brazil. Our initial experience showed good results with the "key teachers" acting as health promotion agents, working enthusiastically. The strategy of training "key workers" in education should be extended to the health professionals, who need more close survey and stimulus to develop a common work with the schools and community. Emergency units should be included in training program now they attend most cases of tonsillitis and RF.

P1142

Angiographic and ultrasonographic comparison of Sirolimus and Novolimus-eluting stents for the treatment of coronary lesions

J. Maia[1], J. Costa Jr[1], A Abizaid[1], D Chamie[1], F Feres[1], R Costa[1], R Staico[1], D Siqueira[1], A Sousa[1], J Eduardo Sousa[1]. [1]*Instituto Dante Pazzanese de Cardiologia*

Background: Despite the marked efficacy of first generation drug-eluting stents (DES) in reducing neointimal (NIH) formation and therefore the need for repeat lesion revascularization, concerns regarding their long-term safety have been recently raised stimulating the development of new DES systems. Reduction in the dose of the anti-proliferative drug, leading to less local adverse effects, might represent an alternative to improve the safety profile of these new devices. Recently developed, the Novolimus-eluting stent (NES) combines a stainless steel platform with a methacrylate polymer eluted with a Sirolimus-analogue anti-proliferative drug, the Novolimus. As potential advantages, it carries less drug when compared to Cypher® (84μg of Novolimus vs. 140 μg of Sirolimus) requiring less amount of polymer. We sought to compare the efficacy of this device to the Cypher® (SES). **Methods:** A total of 15 pts were consecutively treated with NES and compared to our 15-patient historical first-in-men cohort treated with SES. As inclusion criteria, only single, de novo, $<$ 15mm lesions in native coronary arteries of 2.7 to 3.5 mm in diameter were included. The primary goal was to compare lumen loss by QCA and % of obstruction by IVUS at 4-month follow-up. **Results:** Baseline clinical and angiographic characteristics were similar between the groups. Overall mean age was 61 years with 47% of diabetics. QCA and IVUS data are shown in the table **Conclusion:** This preliminary analysis demonstrates the equivalence between the two DES in reducing neointimal formation. The decrease in the dose of the anti-proliferative drug in the NES did not seem to impact its efficacy. These preliminary enthusiastic results should be confirmed in more complex populations.

	NES	SES	p-value
Reference Vessel Diameter, mm	3.01 ± 0.4	2.98 ± 0.4	0.85
Lesion length, mm	11.6 ± 2.5	12.9 ± 1.9	0.13
In-stent Late loss, mm	0.17 ± 0.12	0.09 ± 0.3	0.34
Binary restenosis, n (%)	0	0	N/A
IVUS NIH volume, mm^3	5.0 ± 3.1	3.0 ± 4.8	0.18
IVUS % obstruction	3.9 ± 2.8	2.5 ± 3.6	0.26

P1144

Mitochondrial ATP-Sensitive Potassium Channel Participation in Spironolactone Preconditioning

C.C. Lores[1], L.F. Rodrigues Jr[1], A.C.A Carvalho[1], A.C.C. Carvalho[1], J.H.M Nacimento[1].
[1]Instituto de Biofísica Carlos Chagas Filho/ UFRJ

The ischemic preconditioning (IPC) is a phenomenon where one or more small periods of ischemia and reperfusion induce protection against subsequent and prolonged myocardial ischemia. It was also described that the perfusion of some substances before the prolonged ischemia can cause cellular alterations capable of protecting the heart. Spironolactone, a mineralocorticoid receptor antagonist, used in hypertension treatment because of their potassium spare diuretic characteristic, had its utilization augmented after demonstration that its addition to standard care of severe heart failure diminishes morbidity and mortality of patients, suggesting cardioprotection. In the present study we investigated the action of 5-hydroxydecanoic acid (5-HD) a selective mitochondrial ATP-sensitive potassium channel (mitoKATP) blocker on spironolactone induced cardioprotection against ischemia-reperfusion injuries in isolated rat hearts. Isolated male Wistar rat hearts were retrograde perfused with Krebs-Henseleit solution in modified Langendorff apparatus. A water-filled latex balloon was placed in the left ventricle to measure the left ventricular pressure (diastolic and developed pressure). After finishing the experimental protocol, the hearts were sliced and stained with TTC for infarct area analysis. The experimental groups were: I) CONTROL: the hearts were subjected to ischemia-reperfusion (I/R) protocol: global ischemia during 30 min. followed by 120 min. reperfusion, II) ISCHEMIC PRECONDITIONING (IPC): the hearts were subjected to 3 x 5 min. global ischemia and 5 min. reperfusion, followed by I/R. III) ESP-PRE: 1 μM spironolactone were perfused during 10 min. before the I/R. IV) 5-HD: 5 min. 5-HD (100 μM) perfusion followed by 10 min. 5-HD and spironolactone perfusion before I/R. Results: (mean ± SEM): left ventricular end-diastolic pressure measured at 60 min. reperfusion was lower in IPC (52.7 ± 6.0 mmHg) and ESP-PRE (53.69 ± 5.31 mmHg) groups compared to CONTROL group (84,96 ± 5,10 mmHg). The increase of end-diastolic pressure was not attenuated in 5-HD group (90.07 ± 6.14 mmHg). Left ventricular developed pressure recovery after ischemia was higher in IPC (53.9 ± 5.7%) and ESP-PRE (56.2 ± 5.5%) groups compared to CONTROL group (24.87 ± 4.80%). 5-HD group (18.49 ± 4.44%) had end-diastolic pressure similar to CONTROL. The infarct area values were reduced in IPC (11.39 ± 1.45%) and ESP-PRE (14.24 ± 1.25 %) groups compared to CONTROL group (32.33 ± 4.66 %). The infarct area in 5-HD group (36.22 ± 4.92%) was not different from CONTROL group. We concluded that 5-HD perfusion blocked the spironolactone induced cardioprotection against ischemia-reperfusion injuries in isolated rat heart, suggesting the participation of mitoKATP in this mechanism.

P1145

RESTRICTIVE CARDIOMYOPATHY: ETIOLOGIES AND OUTCOME IN A SINGLE CENTER EXPERIENCE

V. Gregorietti[1], M Peradejordi[1], A Bertolotti[1], M Diez[1], L Favaloro[1], L Talavera[1], C Vigliano[1], **R Laguens**[1], R Favaloro. *[1]Favaloro Foundation*

Objetives: To assess the etiologies and the prognosis of patients (pts.) with EMB diagnosed RCM during a 15-year follow up in only one center. **Material and Methods:** We analyzed retrospectively 583 EMB performed between September 1992 to September 2007, All of them were performed for cardiomyopathy diagnosis in patients referred to our Heart Failure Clinic. Fourty two (7,2%) of this 583 EBM were diagnosis as RCM. Mean follow up was 51 months. **Results:** The mean age of the population was 46±21years; 50% were females. The etiologies were as follows: amyloidosis 42.9% (18 pts.) endomyocardial fibrosis 47.6% (20 pts) and others 9.5% (4 pts.): Pompe's Disease (1), fibroelastosis (2) and mitochondrial abnormalities with restrictive features (1). Eight pts. underwent transplantation(7 endomyocardial fibrosis and 1 amyloidosis) and 1 patient is on waiting list for heart transplant. The mortality rate for the amyloidosis group was 72% (13 pts.) and for the fibrosis group was 40% (8 pts.) during follow up (p:0.04). A higher mortality rate was observed among male pts: 66% vs. 33%; p: 0.03. The survival rate based on the Kaplan Meier curve after the diagnosis of RCM reached 89% at one year, and 50% at 5.6 years. **Conclusions:** In our experience amyloidosis and endomyocardial fibrosis were the most frecuent ethyologies in patient with RCM. After diagnosis the mean survival rate was 50% at 5.6 years, being amyloidosis related with worse prognosis.

P1146

EQUIPLANARITY OF ECHOCARDIOGRAPHIC, SPECT AND CARDIAC MAGNETIC RESONANCE IMAGING PLANES. TO WHAT EXTENT ARE THE AHA STATEMENTS FOR SEGMENTATION AND NOMENCLATURE PRACTICABLE?

R. Asbot[1], K. Sugar[1], I. Balogh[1].

The American Heart Association published a Statement unifying segmentation and nomenclature of planes in cardiac imaging (Circulation 2002:105). It may asked however, to what extent are able these different modalities to give fitting, i.e. equivalent planes. **Methods:** We determined on a patient-to-patient base the limitations of each method on defining their imaging planes in space to each other, or to external reference systems, as described in guidelines and as done in practice of SPECT and MRI, and we measured the spatial localization of these planes by our 3-dimensional photographic method in echocardiography. Intra- and interobserver variability were calculated, and theoretical considerations were done, regarding spatial fitting of the corresponding planes. **Results:** Our methods showed an excellent intraobserver and where applicable, interobserver variability in these selected imaging series. (CV=s/X M, <10%). The AHA recommendations however (rectangular horizontal and vertical planes, short axis planes all paralell to each other and all rectangular to the long axis) were fulfilled only by MRI. There are considerable differences in defining the true long axis in SPECT as well as in the rectangularity of the (vertical and horizontal) long axis planes (90+/-15°) and in the paralellity of the short axis planes (0+/-10°) in echocardiography. **Summary:** Ad 1. The aims as recommended in the AHA Statement are only partly applicable. Ad 2. The cardiac planes produced by different imaging methods of the whole heart are not identical. Ad 3. The quantitative evaluation in the cardiac imaging planes as recommended by the AHA should imply the knowledge of the methodological differences. Ad 4. Series of short axis planes which is the "working horse" of the cardiac imaging, gives with all methods a complete overview of the cardiac segments, but a real parallelism of these planes is not obtainable by echocardiography.

P1147

THE GOOD SCORE'S QUALITY OF LIFE IS A MARKER FOR THE GOOD CONTROL ON BLOOD PRESSURE IN HYPERTENSION PATIENT?

G. M. Guerra[1], E. O. Freitas[2], P. L. Silva[3], D. M. A. Giorgi[4], E. M. Krieger[5], H. F. Lopes[6].
[1]Heart Institute of Medicine School of Sã,o Paulo University [2]Heart Institute of Medicine School of Sã,o Paulo University [3]Israelita Albert Ienstien Hospital [4]Heart Institute of Medicine School of Sã,o Paulo University [5]Heart Institute of Medicine School of Sã,o Paulo University [6]Heart Institute of Medicine School of Sã,o Paulo University

Arterial hypertension is a public health problem and patient adherence to treatment is challenging. The aims of this study was: to analyze correlation between the values of casual arterial blood pressure (BP) and auscultatory and ambulatory blood pressure monitoring (ABPM) with good score's quality of life (QL), and if is a marker to good control of BP in hypertension patient. **Method:** The short version of (WHO Quality of life (WHOQOL-BREF) questionnaire was used to assess means in four single domains (physical, psychological, social, and enviromental) and one overall domain (global value). The range of each domain of WHOQOL is from 0–100. In 60 patients with hypertension (43 female, 60"b12 years, and BMI 30,1"b21Kg/m2) and at the first nurse visits QL instruments were applied. Also, the BP, and anthropometric measureents were performed with patients in the supine position. Casual BP as measured three times (mean"bsd= 155 "b1,4mmHg/94,7"b1,4mmHg) and ABPM (Space Labs 90207 monitor: Space Labs, Redmomd, WA) was recorded in 34 pacients after 30 days from the fitst nurse visit daytime=BP mmHg the measurements were collected with patients in the supine position, three values were used as the clinic BP was recorded by using the first and fifth phases of Korotkoff sounds; (sistolic blood pressure - SBP 155 "b1,4mmHg/ dyastolic blood pressure - DBP 94,7"b1,4mmHg) and Ambulatory blood pressure monitoring (Space Labs 90207 monitor; Space Labs, Redmond,WA) was performed in 34 patients after 30 days from visit nurse (daytime=BP 127,2"b3,3/76,3"b2,4 mmHg: nighttime BP=115,1"b4,9/67,7"b2,6mmHg). For statistical analysis the Spearman rank order was used for correlation test between BP (casual and ABPM) with score domains, and p-level equal 0,05 were adopted. **Result:** In relation to the WHOQOL-BREF questionnaire in the 60 patients the result were: physical domain 25,1"b0,6; psychological domains 21,8 "b0,52 ; social domains 11,2 "b0,3; and environmental domains 25,3"b0,6 and health sattisfation was 3,4 "b0,12. The were significant and positive correlations social domains and dipper in ambulatory BP monitoring (R=0,405, p=0,017); SBP standard deviation during daytime in ABPM and social domains (R=0,366, p=0,0033); DBP standart deviation during daytime in ABPM and the social domains (R=0,406, p=0,017); and negative correlationbetween DBP standart deviation during daytime in ABPM and the enviromental domains (R=0,350, p=0,043). There were no significant correlation for the variables. In **conclusion:** The result indicate that the hypertensive patients that have a better social adaptation have also a more favorable cardiovascular behaviour.

P1148

Relationship between ventricle-vascular coupling and the ventricular function parameters. Concept of ventricle-vascular interaction.

J. Tripolone[1], G Santiago[2], A Schott[3], JM Tripolone[4]. *[1]UNIVERSIDAD CATOLICA DE CUYO [2]UNIVERSIDAD CATOLICA DE CUYO [3]UNIVERSIDAD CATOLICA DE CUYO [4]UNIVERSIDAD CATOLICA DE CUYO*

The deterioration of the ventricle-vascular coupling (AVV) alters the optimal transfer of stroke volume to the vascular system AND increasing left ventricular work. The goal of this research was to evaluate the changes on parameters of left ventricular function associated with the modification of ventricle-vascular coupling. **Material and method:** Our study was based on 471 patients, divided into two groups. G1: 316 patients with risk factors like arterial hypertension, diabetes, etc, and G2 with 85 patients with ischemic cardiopathy (with or without a previous infarct). Parameters studied: Ventricle-Vascular Coupling (AVV). 1- AVV = Aortic Elastance / Left-ventricle Elastance = End of systole left ventricle pressure / Anterograd Stroke Volume Index. (Normal values in our laboratory are about 0.46+-0.14) 2- EF (EYECTION FRACTION) 3- VEAM : Medium Descending Velocity of the Mitral Ring Plane in the first third of systole. (n > 11+-2.37 cm/s, in our laboratory are). 4- IP: PERFORMANCE INDEX:= VEAM * ESPAM / DFS (NORMAL VALUE 80+-26 MM/SEG). ESPAM (MITRAL ANNULAR EXCURSION). DFS (END SYSTOLIC DIAMETER) 4- AORTIC STIFFNESS (nORMAL VALUE 1.89+- 0.55, FOR OUER LABORATORY) 5- VAI (Left auricle volume, indexed to the body surface). 6- Tei's Index. Diastolic Parameters: DESACELERATION time, E peak speed / A peak speed (E/A). Statistical Analysis: Student Test (Significant Difference for p <0.05). **Results:** Significant Difference found on: VAI, Mass, Stiffness, AVV, VEAM, EF, IP, Tei. Significant Difference (but a little higher to 0.05 p-value) found on DESACELERATION time and E / A.

	G1	G2
Aortic Stiffness	2.8	3.9
AVV	0.65	1.26
VEAM	7.57	6.65
IP	44	29

Conclusions:

1- The increase of AVV was accompanied by geometric changes such as increased VAI and mass.
2- Changes in systolic function: declining VEAM, IP (performance index, described by our research group) and EF.
3- Changes at systolic-diastolic function: > TEI.
4- Neither E/A nor TD had changes with significant difference
5- The AVV values showed statistically significant difference between the two groups of patients.
6- The measurement of AVV is important in the comprehensive assessment of the patient with risk factors and cardiovascular disease.

P1149

Racial Distribution Of Nitric Oxide Synthase Polymorphism In A Multi-ethnical Population

E. Mesquita[1], S. Bernardez[1], O. Tardin[1], L. Pessoa[1], S. Chermont[1], T. Alves[1], H. Balieiro[1], L. Amorim[1], G. Ribeiro[1], M. Velloso[1]. [1]*FLUMINENSE FEDERAL UNIVERSITY*

Background: The A-HeFT study showed that the combination of isosorbide dinitrate plus hydralazine (ISDN/HYD) to standart therapy for heart failure(HF) increased survival among black patients with advanced HF. GRAHF study(Genetic Risk Assessment of Heart Failure in African Americans study) demonstrated that the genotype Glu-Glu by NO3 Glu298Asp was the predominant among these patients. FDA approved the fixed dose combination of ISDN/HYD for use in self-identified African Americans. We sought to assess the distribution of NOS3 Glu298Asp polymorphism at exon 7 in patients with heart failure in a multi-ethnical population. **Methods:** Eighty-eight patients (mean age 57+ 13 years, 61%men), with systolic dysfunction confirmed by echo, class II through IV HF NYHA, 42% self-identified Afro-Brazilians, were enrolled for analyze of the NOS3 gene polymorphism. The genotypes were determined by the polymerase reaction and restriction fragment length polymorphism. We also analyzed race and NOS3 gene of blood donors (controls). **Results:** Table 1

TABLE 1: ALLELIC FREQUENCIES FOR EACH LOCUS OF NOS

Population	Allele G	Allele T
Non Afro blood donors	65,8%	34,2%
Afro-blood donors	70,3%	29,7%
NonAfro HF	72,8%	27,2%
Afro HF	82,1%	17,9%

Conclusion: There was no difference regarding the genotypic and the allele frequencies among the racial groups. The allelic frequency is similar to the Afro-American population. However, new researches should be done to prove the efficacy of the combination ISDN/HYD in a multi-ethnical population with advanced HF.

P1152

Atherothrombosis in acute coronary syndromes: one size does not fit all!

S. Monteiro[1], N. Antonio[1], S. Costa[1], R. Teixeira[1], C. Negrier[1], F. Goncalves[1], P. Monteiro[1], L. Goncalves[1], M. Freitas[1], L. A. Providencia[1]. [1]*Coimbra University Hospital*

Introduction: Atherothrombosis is a rapidly growing epidemic, which can present itself in several ways: stroke, peripheral arterial disease and myocardial infarction are the main clinical entities, being diabetes a known equivalent of myocardial infarction. Are all these diseases similar in its background and underlying risk factors or are we talking of different entities, with different metabolic, epidemiological and clinical profiles? **Aim:** To evaluate, in an acute coronary syndrome (ACS) population, the impact of previous diagnosis of stroke, peripheral arterial disease, diabetes and myocardial infarction, regarding metabolic, epidemiological and clinical profiles, as well as in-hospital morbidity and mortality. **Population and methods:** Retrospective analysis of a database containing 840 consecutive patients admitted to a single coronary care unit for ACS, between May 2004 and July 2007. Our population was divided in four groups, according to previous atherothrombotic disease (or its equivalent): stroke (n=53), peripheral arterial disease (n=24), diabetes (n= 394) and myocardial infarction (n=369). **Results:** There were no significant differences between groups regarding age and reperfusion strategies. Patients with previous peripheral arterial disease were more often male, smokers, had a lipid profile characterized by lower HDL-cholesterol and Apo A levels, lower creatinine clearance, more nephropathy and extensive coronary disease. Prior stroke patients were predominantly women and there was a strong correlation with higher necrosis biomarkers, ST-elevation myocardial infarction, atrial fibrillation, good metabolic control and lipid profile. Previous myocardial infarction group included more males, smokers, diabetics, with more previous percutaneous coronary interventions (PCI) and extensive coronary disease; they had a more aggressive risk profile, were more often previously on cardiovascular medications and had lower left ventricular ejection fraction. Diabetic patients were more often female, obese, with a worse metabolic control, previous angina, PCI and cardiac surgery, and had better renal function. No significant differences were found between groups regarding in-hospital morbidity (3.8% vs 0.0% vs 7.9% vs 6.5%; p=ns) and mortality (3.8% vs 4.2% vs 7.6% vs 7.0%; p=ns). **Conclusion:** In this ACS population, different profiles of atherothrombotic disease could be found, with different backgrounds regarding epidemiology, risk factors, metabolic status, coronary anatomy, biomarkers and treatment strategies. Although these differences did not significantly influenced in-hospital prognosis, their knowledge can be used in the future to better stratify and manage different ACS subpopulations.

P1153

STROKE AFTER CARDIOTHORACIC SURGERY: ANALYSIS OF ASSOCIATED FACTORS

S. Olival[1], B. Santos[1], R. Gomes[1], A. Rouge[1], L. Alves[1], M. Freitas[1], R. Vegni[1], W. Homena[1], J. O. R. Brito[1], O. N. Barbosa[1]. [1]*Instituto Nacional de Cardiologia*

Background: Postoperative stroke is a serious adverse event after cardiothoracic surgery. **Objectives:** This study sought to investigate factors associated to postoperative stroke in patients undergoing cardiothoracic surgery. **Design:** Cohort study. **Methods:** We followed consecutive patients undergoing cardiothoracic surgery in a single tertiary care center from January 1, 2004 to August 31, 2005. The exposure variables were: 24 preoperative, 6 per-operative and 12 postoperative factors. The outcome variable was postoperative stroke. The statistical analysis comprised Student t-test, Mann-Whitney test, chi-squared test, Fisher exact test and multivariate logistic regression model. **Results:** We had a total of 2007 patients who underwent cardiothoracic surgery. Forty patients (2%) suffered a postoperative stroke. The median age of the sample was 58 years with an interquartile range of 48–67 years. Females represented 36.8 % (739) of the sample, and the number of patients per surgery was as follows: 1282 coronary artery bypass graft (CABG), 684 valvar surgery (V), 206 CABG + V and 250 other cardiothoracic surgeries. Among tested factors, significant correlates of stroke included age (OR 1.04; p = 0.003; 95% CI 1.01 – 1.07), preoperative stroke (OR 3.85; p = 0.018; 95% CI 1.26 – 11.78), postoperative shock (OR 3.06; p = 0.002; 95% CI 1.52 – 6.15), postoperative hypertension emergency (OR 3.04; p = 0.017; 95% CI 1.21 – 7.59) and postoperative cardiac arrest (OR 2.99; p = 0.020; 95% CI 1.19–7.48). **Conclusion:** Age, preoperative stroke, postoperative shock, postoperative hypertension emergency and postoperative cardiac arrest are independent predictors of postoperative stroke.

P1154

Experience with covered stent implantation in congenital heart disease.

A. Peirone[1–2], A. Guevara[1], A. Spillmann[1], E. Juaneda[1–2], G. Pessah[1], G. Guglieri[1], E. Banille[1], L. Alday[1–2]. [1]*Children's Hospital of Córdoba* [2]*Private Hospital of Córdoba*

Objective: The use of covered stent (CS) has become an alternative for the treatment of congenital heart lesions although the experience is still limited. The aim of this retrospective study is to report the indications, feasibility and outcomes of patients with congenital heart disease who underwent CS implantation. **Methods:** From January 2005 to September 2007, 10 CS were implanted in 9 patients with congenital heart lesions. Median age and weight were12.3 years (5–17) and 44.7 kg (19–70) respectively, five (55 %) were male. All stents utilized were PTFE covered Cheatham platinum (NuMed) mounted over BIB balloons (NuMed). A high pressure Mullins balloon was used once. **Results:** The indications for interventions included: 6 coarctations of the aorta (isolated severe native coarctation in 4, 2 with functional interruption; one severe native coarctation with persistence of a moderate size patent arterial duct; and one mild recoarctation with a large aneurysm). Two for severe left pulmonary artery stenosis in the setting of univentricular heart and patent right ventricular outflow tract (one following a bidirectional Glenn anastomosis and the other after a Fontan procedure). One of these patients required implantation of the CS over a high-pressure balloon. The last indication was for reconstitution of a torn intracardiac bovine pericardial Fontan tunnel following an attempt of fenestration closure with a device. The implantation was successful in all patients. The patient with the ruptured intracardiac tunnel required 2 CS implanted in tandem. Median stent length and balloon diameter utilized were 39 mm (28–45) and 16 mm (12–18) respectively. After stent placement, the mean minimal stenotic diameter of the target vessel (intracardiac tunnel excluded) increased from 2.9 mm to 15.3 mm ($p < 0.0001$) and the median gradient through the narrow vessel decreased from 27.6 mm Hg to 4.2 mm Hg ($p < 0.0001$). No residual leaks were detected after stent implantation in patients with the intention of both vessel diameter improvement and occlusion of right ventricular outflow tract, patent arterial duct, aortic aneurysm and Fontan reconstitution. Median follow-up time was 11 months (1 – 24). All stents remained patent with neither significant residual gradients nor leaks. Two patients with native coarctation of aorta remained hypertensive requiring pharmacologic treatment. Peripheral saturation in the patient with the reconstructed Fontan circuit was 95% breathing room air. The patient with recoarctation of the aorta and a large aneurysm had an uncomplicated vaginal delivery of a baby following a normal pregnancy 22 months after the implantation. **Conclusions:** CS implantation for congenital heart lesion is an attractive and expanding field for indications. In this selected series, it proved to be useful, suitable, and safe in the short term. Whether these outcomes will be maintained long term, needs further observation.

P1155

MYOGENIC REGULATORY FACTORS EXPRESSION IN SKELETAL MUSCLE CHANGES DURING VENTRICULAR DYSFUNCTION AND HEART FAILURE

P. F. Martinez[1], K. Okoshi[1], L.A.M. Zornoff[1], R.F. Carvalho[2], S.A. Oliveira Jr[1], D.H.S. Campos[1], A.R.R. Lima[1], C.R. Nogueira[1], M. Dal Pai-Silva[2], M.P. Okoshi[1]. [1]*Botucatu Medical School, São Paulo State University - UNESP* [2]*Botucatu Biosciences Institute, São Paulo State University - UNESP*

Body: The myogenic regulatory factors (MRF), a family of transcriptional factors, can modulate expression of several skeletal muscle specific proteins, including myosin heavy chain (MyHC), and may be involved in the heart failure (HF)-associated myopathy. This study was undertaken to determine whether rat skeletal muscle MRF expression changes during HF development. **Methods:** A coronary ligation model was employed to induce HF. Six months after the surgical procedure, three groups of animals were studied: Sham (n=10), left ventricular (LV) dysfunction (Dysf; infarcted rats without HF, n=7), and HF (infarcted rats with HF, n=10). Cardiac structure and function were evaluated by transthoracic echocardiogram. Infarct size was measured by LV histological analysis. MRF MyoD, myogenin, and MRF4, and cyclophilin

A (housekeeping gene) expression was assessed by reverse transcription-polymerase chain reaction in the soleus skeletal muscle. Poliacrylamide gel electrophoresis was performed to evaluate myosin heavy chain isoforms (MyHC I and IIa). Histochemical analysis with myofibrillar ATPase was employed to analyze muscle fiber type and cross sectional fiber area. **Results:** HF animals presented tachypnea and right ventricular hypertrophy (right ventricle weight/body weight ratio greater than 0.8 mg/kg). Infarction area was 30±10% and 42±11% of total LV area in Dysf and HF groups, respectively. MyHC distribution was not different among the groups ($p>0.05$). HF group presented atrophy of IIA and IC/IIC fibers when compared to the Sham group ($p<0.05$). Other results are summarized in the table.

	Sham (n=10)	Dysf. (n=7)	HF (n=10)
LVEDD/BW	15.7±1.5	20.8±2.2*	24.6±2.2*#
FS	50.2±3.3	27.6±6.0*	21.1±5.5*#
Myogenin	1.00±0.15	0.75±0.12*	0.80±0.15*
MyoD	1.00±0.23	1.27±0.28	1.77±0.20*#
MRF4	1.00±0.35	0.93±0.23	0.55±0.04*

Data are expressed as mean ± standard deviation; LVEDD (mm/kg): LV end-diastolic dimension; BW: body weight; FS (%): LV fractional shortening; the MRF are expressed in arbitrary units; * $p<0.05$ vs Sham; # $p<0.05$ vs Dysf; ANOVA and Tukey test.

Conclusion: Transition from LV dysfunction to heart failure is associated with changes in myogenin expression in rat skeletal muscle. MyoD and MRF4 expression and fiber trophism are altered only in the heart failure.

P1156

Precompetitive assessment in young athletes

J. Kriskovich[1], R Rasmussen[1], E Villegas[1], G Pereira Zini[1], M Avila[1], M De La Rosa[1], E Tassano[1]. [1]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES*

Introduction: sudden death is one of the most important health problem to prevent in athletes (a). Objective: to detect possible clinical and electrocardiographical anomalies in young sports competitive people in different sports. **Material and method:** One hundred and thirty-one athletes were recruited. Type of study is prospective. We evaluated antecedents, hospitalizations, physical examination, antropometric evaluation and EKG. Patient aged 12–30 years (mean age 18±4 years). **Results:** 90 a (69%) were male. Evaluated sports were volley, basketball, swimming, martial arts, potency and others. We found 5% smokers. 35% had an hospitalizations, 75% of these were for any surgery (apendicectomy and adenoidectomy were more frequents). In relation with symptoms, 18% suffered dizziness in some opportunities different to sport. In relation with physical examination, SBP was higher in male and potency, martial arts ($p=0.034$). Heart rate did not differ between different sports. In relation with EKG, we found ventricular hypertrophy (14%), intraventricular conduction anomalies (10%), faster repolarization (6%) and other signs (down auricular rhythm, ventricular arrhythmias). **Conclusion:** we found some anomalies, due to these anomalies some studies were done. Any athletes was discontinuated to sport practice.

P1158

emergency service: analysis of chest pain unity

J. Silveyra[1], P. Bayol[2], O. Querencio[3], E. Fernandez[4], S. Manzolillo[5], R. Zoni[6], J. Parras[7], J. Kriskovich[8], J. Escalante[9], R. Peloso[10]. [1]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [2]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [3]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [4]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [5]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [6]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [7]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [8]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [9]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES* [10]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES*

Objective: to determinate the utilitiy of diagnosthic methods in the chest pain unitity (CPU) **Material and methods:** this is a prospective study of pacients that were included in the CPU. Using the risk factors and antecedents they were classified in : high, intermedium and low probability of coronary artery disease (PCAD). With the feature of precordial pain they were classified in no coronary pain, atipic angina and tipic angina. Pacients with dinamic changes in the ECG were excluded. Troponina were made for all pacients, negative troponina were assigned to calcium score. Calcium score between 100–800 were assigned to angiografy CT. Before the discharge all pacients were evaluated by ergometric test. **Results:** 109 pacients were included from 02/jul/2007 to 28/sep/2007. The average of age were 52+/- 13 years, 70 % were men. The media of duration of pain were 8 hours. PCAD: 27% were low, 38% intermedium and 35% high. The 64% of chest pain was opressive, 63% had normal basal ECG. During the presence in the CPU 4% had supradesnivel of ST segment, 7% invesion of T wave and 3% had infradesnivel of ST segment. The media of troponina T was 0.010+/-0.011. The 8% had minimal myocardial damage (MMD) with troponina 0.02. Ergometric test was positive in 10% and calcium score was 154+/-399, but 25% was 0. The 20% were included for angiografy CT and 15% had significative damage. In the 10% the final diagnostic were acute coronary syndrome (ACS). It did not exist a relation between the calcium score and positive ergometric test and the presence of MMD. It did exist a significative relation between the duration of pain and previus disease artery coronary with MMD and admision for ACS. **Conclusion:** Despite it did not have a correlation between the results of complementaries methods and the MMD and admision for ACS, his utility should be evaluated with a major number of pacients.

P1159

Evaluation of Aortic Pathology by Cardiac Magnetic Resonance

A Ithuralde,[1], C Seara, J Moltedo, JP Gallo, C Nojek, P Garcia De Lucis, M Garcia Nani , A De Elizari, M Ithuralde. [1]*FLENI, Buenos Aires, Argentina*

Objective The aim of this study was to evaluate the diagnostic value of Cardiac Magnetic Resonance (CMR) in patients with aortic pathology. **Material and methods** We studied 32 patients from 10/2004 until 8/2007 with aortic pathology. CMRI studies included assessment of anatomy (evaluated by a combination of gradient echo cine, spin echo and gadolinium-enhanced three-dimensional resonance angiography) ventricular function and flow measurements at the ascending and descending aorta. If coarctation was suspected the severity was determinate by the aortic flow characteristics; aortic diameters and areas in the ascending aorta, transverse arch, aortic isthmus and descending aorta. Measurements of the aortic annulus, root and sinotubular junction were analyzed in patients with pathology of the ascending aorta. **Results** Thirty-four studies in 32 patients were done, 17 were males, the median age was 18.7 +/- 5.2 years (95 days- 62 years). Twenty-seven patients had aortic coarctation and 5 pathology of ascending aorta. Excluding patients with hypoplastic left ventricle, all had normal cardiac function. The left ventricular mass was significantly increased in 4 of them. Additional unsuspected diagnosis were identified. Two partial anomalous pulmonary venous return, 1 descending aortic dissection type B in an asymptomatic Marfan patient, and one cervical aortic arch. **Conclusions** CMR in this group of patients accurately describes aortic anatomy, provides quantitative information on cardiac function and mass, and reveals additional cardiovascular abnormalities without adverse events.

P1160

NON ST-SEGMENT ELEVATION ACUTE CORONARY SYNDROMES IN DIABETIC PATIENTS. CLINICAL CHARACTERISTICS, THERAPEUTIC INTERVENTIONS AND INHOSPITAL OUTCOME

H Pomés Iparraguirre[1–2], **G Kuhn**[1], G Calderón[1], W Santander[2], JH Leguizamón[1], O Paredes[2], R Aguero[1], L Ferrer[1], J Torres[1], A Cejas[2]. [1]*SANATORIO FRANCHIN, BUENOS AIRES, ARGENTINA* [2]*INCOR, LA RIOJA, ARGENTINA*

Objectives: to evaluate the clinical characteristics, antecedents, and inhospital outcome in diabetic (DBT) patients (p) with NSTE-ACS, Unstable Angina and NSTEMI. **Methods:** we retrospectively studied 503 consecutive p (378 men and 125 women, mean age: 59.8 ± 11.6 years), divided in two groups (G) according to the presence (G I, n= 126) or absence (G II, n= 377) of DBT. Demographic and clinical variables and inhospital outcome were compared between both groups by univariate analysis (chi square, Kruskal-Wallis test): gender, age, previous history, clinical presentation (UA or NSTEMI), high risk (HR) stratification at admission by ACC/AHA criteria, ST-depression on initial ECG (↓ ST), refractory angina (REF); mortality (MORT), (re)-infarction (reINF), mortality and (re)-infarction (M/reINF), and combined events (CE); events: MORT, reINF, angina and revascularization. In G I p the independent predictors of outcomes (IPO) were obtained by multivariate analysis (logistic regression) **Results:** there were differences between GI and G II p in: age (62.1 ± 11.2 yrs vs 59 ± 11.6 yrs, p= 0.007); risk factors as hypertension (82.5% vs 70.6%, p= 0.01), hypercholesterolemia (68.3% vs 41.9%, p< 0.001); history of heart failure (HF: 17.1% vs 7.8%, p< 0.02), previous percutaneous coronary intervention (24.6% vs 16.2%, p= 0.045), and coronary artery bypass graft (13.5% vs 6.9%, p= 0.027); HF at admission (7.1% vs 2.7%, p= 0.046); and HR at initial stratification (51.6% vs 35.5%, p= 0.001). The clinical presentation (UA or NSTEMI) and ST-T abnormalities on admission ECG were similar in both groups. Patients in G I received more intensive medical treatment (NTG-IV: 93.7% vs 87%, p< 0.02; betablockers: 93.7% vs 86.7%, p< 0.02; clopidogrel: 75.4% vs 63.9%, p< 0.02). Although there were no differences in frequency of coronary angiography, G I patients had less rate of left main disease (3% vs 11%, p< 0.02). Inhospital events (MORT: 1.6% vs 0.8%, reINF: 4.8% vs 2.9% and M/reINF: 6.3% vs 3.7%) were non-significantly higher in G I patients. IPO were as follows: for reINF: NSTEMI (27.3% vs 2.6%, p= 0.001) and REF (16.7% vs 3.5%, p= 0,018); for M/reINF: NSTEMI (36.4% vs 3.5%, p=0.01) and there was a trend for ↓ ST (16.1% vs 3.2%, p= 0.09); for CE: NSTEMI (54.5% vs 22.6%, p= 0.049) and HR (35.4% vs 14.8%, p= 0.017). **Conclusions:** in our population of NSTE-ACS, diabetic patients were older and with higher prevalence of risk factors, previous coronary revascularization and heart failure. Whereas they could have been stabilized with more intensive medical treatment, NSTEMI as clinical presentation, ↓ ST, high risk at admission and lack of response to medical treatment were independent predictors of worse inhospital outcome.

P1161

Exercise testing assessment in active men and their relationship with smoking

J. Kriskovich[1], **R Rasmussen**[1], E Villegas[1], M Avila[1], G Pereira Zini[1], J Sanagua[1], H Martinez[1], E Tassano[1]. [1]*INSTITUTO DE CARDIOLOGIA DE CORRIENTES*

Introduction: smoke is probably one of the most important factors to reduce exercise capacity. **Objective:** to compare exercise test results in smoking vs. unsmoking active men. **Material and method:** Sixty healthy men aged 16–50 years (mean age 33±11 years), whose perform regular sport practice were recruited. We compare smoke (group I) and unsmoking men (group II). We study coronary risk factors, symptoms, sport activity, base spirometry and exercise testing. **Results:** Base heart rate was significantly higher in group I (I, 89.4 versus II, 81.1 beats; $p=0.04$). Base systolic blood pressure was significantly higher too in group I (SBP: group I, 125 mmHg; group II, 117.8 mmHg, $p=0.05$). Base spirometry showed that PEF%predict was significantly higher in group II (II, 113 versus I, 102; $p=0.05$). Other measure did not differ between two groups. In relation with exercise testing VO2max, VO2 %predict, METs, all of them were higher in group II, but difference don't reach significance statistical. Number of cigarettes was directly correlated with maximal DBP during exercise ($p=0.01$) and inversely correlated with time of exercise ($p=0.01$). **Conclusion:** smoking men tender to have lower efficiency in exercise testing and higher base heart rate and systolic blood pressure.

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Family history of tobacco smoking and attitude towards the patient smoker in female physicians of Argentina

H. Z. Zylbersztejn, Horacio[1], A.M. Mulassi, Andres[2], A.C. Cardone, Alberto[3], A.P. Picarel, Anibal[4], A.R. Robilotte, Analia[5], E.P. Pautasso, Enrique[6], S.K. Kusznier, Silvia[7], C.B. Belziti, Cesar[8]. *[1]RESEARCH AREA, EPIDEMIOLOGY COUNCIL. ARGENTINE SOCIETY OF CARDIOLOGY [2]RESEARCH AREA, EPIDEMIOLOGY COUNCIL. ARGENTINE SOCIETY OF CARDIOLOGY [3]RESEARCH AREA, EPIDEMIOLOGY COUNCIL. ARGENTINE SOCIETY OF CARDIOLOGY [4]RESEARCH AREA. ARGENTINE SOCIETY OF CARDIOLOGY [5]RESEARCH AREA. ARGENTINE SOCIETY OF CARDIOLOGY [6]RESEARCH AREA. ARGENTINE SOCIETY OF CARDIOLOGY [7]RESEARCH AREA. ARGENTINE SOCIETY OF CARDIOLOGY [8]RESEARCH AREA. ARGENTINE SOCIETY OF CARDIOLOGY*

Objective: To study the prevalence of a family history of tobacco smoking in Argentinean female physicians and their attitude towards patient smokers. **Materials and methods:** Cross sectional study. Argentine female physicians of >46 years of various medial specialties (enrolled in TAMARA study, 2004) were interviewed. We measured the prevalence of a family history of smoking in these professionals and the frequency of: training in tobacco education (TTE), their perceived feeling of being of help to patient smokers and physician advice for smoking cessation. **Results:** n = 637; age: 51.5+5.4 a.

Variables	Non smokers %	Smokers %	Ex Smokers %	p
Age (y)	52±6 y	51±5 y	51±5 y	0.10
Father Smoker (54%)	45.9	63.8	50.3	0.0007
Mother Smoker (20%)	14.5	22.4	21.9	0.10
Sibling Smoker (51%)	40.7	62.4	45.9	0.0003
Partner Smoking (50%)	36.6	57.8	52.6	0.0001
Son/daughter =>15 y (28%)	18.9	35.1	28.0	0.003
TTE (34%)	34.2	30.9	36.0	0.53
Help (51%)	53.9	41.7	58.9	0.001
Advice (74%)	82.1	57.1	84.9	<0.00001

Conclusions: Female physician smokers showed a higher prevalence of family history of nicotine addiction. They acknowledged poor TTE, regardless of smoking status, and referred a diminished capacity to help and less frequent physician advice to stop tobacco addiction.

P1164

Blood pressure control and prevalence of arterial hypertension in adolescents of a rural population in Argentina. Vela Project.

Matias Tringler[2], Alejandro Diaz[1], Soledad Saravia[2], Maria Silvia Grenóvero[1]. *[1]Universidad Nacional del Centro de la Provincia de Buenos Aires. Tandil, Prov Bs As. Argentina [2]Hospital E. Larreta. Maria Ignacia Vela. Argentina*

Introduction: Many studies have shown that high blood pressure (HBP) and its complications begin in childhood; consequently it is useful to know blood pressure (BP) values from early age. In urban populations the prevalence of HBP is up to 4.5%. However there are few data about BP control in adolescents from rural populations in our country. The aims of the present study were: 1) to evaluate BP levels in scholar's adolescents, and 2) to determine the prevalence of arterial hypertension, sedentary condition, overweight and obesity in adolescents from a rural school from Maria Ignacia Vela, Argentina, during 2007. **Materials and Methods:** Our study was part of Vela Project, a prospective survey about cardiovascular risk factors carried among a rural population of Maria Ignacia Vela. The sample includes scholar's adolescents of 12 to 18 years old from a rural school. Anthropometric variables, pathological family history of hypertension, smoking, sedentary condition and its relation with blood pressure were all evaluated. BP measures were made in both arms by applying the standard methodology indicated by the Task Force. It was considered HBP to those levels which were equal or above the 95th percentile of BP for height, according to the fourth report on the diagnosis, evaluation, and treatment of High Blood Pressure in Children and Adolescents, NIH 2005. **Results:** We studied 145 adolescents from 12 to 18 years old. Mean age was 14 ± 1,6 years. In 60% of the subjects the BP never have measured. The prevalence of smoking, sedentary condition, overweight and obesity was 5.5%, 55.1%, 16.5% and 5.5% respectively. Values of HBP was found in 2, 06% of the sample. There are no significant association between BMI and HBP. The statistical analyses confirm a significant lineal association (p< 0, 05) between HBP and sedentary condition. Only 7, 58% of the subjects required a new BP control to confirm normotensive values reflecting a probably white coat hypertension. **Conclusions:** In this rural population the evaluation of BP in adolescents is not a routine measure. However the prevalence of HBP is low. These data suggest some differences between urban and rural adolescents. Our data demonstrate a relationship between sedentary lifestyle and the development of HBP. We emphasize the importance of BP controls and the need to implementation of programs to modify sedentary lifestyle. A follow-up study of this young subpopulation may help us understand whether they will develop HBP during adulthood.

P1165

Analysis of Risk Factors for Cardiovascular Disease among Women in a city in Argentina

M. Del Sueldo, Md[1–2], C. Serra, Md, Ph[3], G. Guerrero, Engineer[4], R Rodrigo, Md[2], M Carasa, Md[1], S Castellino, Md[1], V Giovinni, Md[1], I Vigil Torres, Md[1], D Barra, Biochemist[5], J Zilberman, Md[6]. *[1]Clinica Privada de Especialidades - Villa Maria - Cordoba - Argentina [2]Consejo Municipal de la Salud - Villa Maria - Cordoba - Argentina [3]Instituto Modelo de Cardiologia Privado SRL - Cordoba - Argentina [4]Universidad Nacional de Villa Maria - Cordoba - Argentina [5]Hospital Regional Pasteur - Villa Maria - Cordoba - Argentina [6]Hospital Dr. Cosme Argerich - Buenos Aires - Argentina*

Background: Epidemiological studies on risk factors (RF) and cardiovascular disease in women are scarse in our country. **Aims:** To find out the prevalence and number of RF per woman and their relationship according to age in Villa María, Córdoba, Argentina. **Materials and Methods:** During 2006 and 2007, 1097 women were studied; age range 18–87 years, in a voluntary survey. Blood pressure, weight, height and waist perimeter (WP) were recorded. Laboratory tests were carried out with 12-hour fasting. Hypertension (HYP) was defined with measurements ≥ 140 and/or 90 mmHg, and/or treated; sedentary lifestyle (SED) <120 minutes of physical activity a week; dyslipidemia (DLP): T cholesterol >200mg/dl and/or HDL < 0.50mg/dl and/or triglyceride ≥150mg/dl and/or treated; diabetes (DBT): glycemia ≥ 126 mg/dl; and/or treated; smoking (SM); overweight, (OVW) BMI ≥ 25kg/m2 and obesity (OB) ≥ 30kg/m2 or WP ≥ 88 cm. The sample was divided in three age groups, the loss of hormonal protection was used as a reference: Young: < 45, (n=335); Middle - aged: 45 to 65, (n=508) and senile: > 65 years old (n=254). The ANOVA and Chi-square tests were used. **Results:** Presence of RFs in the population per groups:

RFs	%Total	n	< 45 years	45 a 65 years	> 65 years
HYP	44,3	485	6,8%	52,0%*	41,2%
DLP	44,1	442	33,3%	44,1%**	22,6%
DBT	12,4	136	15,4%	50,0%*	34,6%
SM	25,3	278	38,1%	53,6%*	8,3%
SED	71,2	781	30,9%	43,9%*	25,2%
OB	38,2	419	21,5%	50,4%*	28,2%
OVW	36,2	397	27,2%	49,1%*	23,7%
WP ≥ 88cm	65,5	718	21,3%	51,4%*	27,3%

*p < 0.05; **p = 0.172

NUMBER OF RFS PER GROUPS:

Numbers of RFs	% Total	n	< 45 years	45 a 65 years	> 65 years
0	9,18	92	60,9%	32,6%	6,5%
1	27,94	280	42,1%	41,4%	16,4%
2	33,53	336	26,2%	49,4%*	24,4%
≥3	29,35	294	13,94%	52,72%*	33,3%

*p < 0.05

Conclusions: A high prevalence of the main RFs was found in this population. The higher prevalence and larger number of RFs in the 45 – 65 year old group was significant. Women in this group are evidently more vulnerable to cardiovascular disease. These results show the importance of preventive measures and patient education in the early stages of women's lives, in order to fight off the causes of cardiovascular disorders.

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Anthropometric, Metabolic And Cardiorespiratory Profile Of Subjects Older Than 60 Years-old In Brazil Southern Population

K. C. Belli[1], C. M. Richter[1], T. F. Panigas[1], D. C. Bündchen[1], T. Dipp[1], J. Z. Klafke[1], K. C. Guidini[1], C.F. Panigas[1], P.R.N. Viecili[1–2]. *[1]Cruz Alta Heart Institute [2]Cruz Alta University*

Background: In the last years the number of subjects getting older have been increasing and together with this condition, interest and necessity of cardiovascular preventive care. The coronary risk factors are very prevalent and continue to predict coronary events and mortality among these people. Natural changes occur with the human ageing in the entire organism, especially in cardiorespiratory and skeletal-muscle system. **Objective:** Describe the profile of men and women, older than 60 years-old, in a Brazilian population. **Methods:** From a database of 1024 subjects, 366 over 60 years-old (69 ± 6 years), residents in the South of Brazil, were selected. The diabetes, cigarette smoking, alcoholism, hypertension blood pressure (HBP), high cholesterol, high triglycerides, sedentary and stressful lifestyle, coronary artery disease (CAD), and obesity history were analyzed. Age, body weight (kg), body mass index (BMI: kg/m^2) and abdominal circumference (AC: cm) were measured. Treadmill test variables, such as systolic and diastolic blood pressure (SBPi/DBPi) in rest, time of exercise test (TET), maximal oxygen consumption (VO_2max), heart rate predicted (HRPr), heart rate peak (HRP) and rate pressure product (HR) were assessed by Bruce protocol. Total cholesterol, LDL, HDL, VLDL, glucose e triglycerides serum levels were analyzed. Data were expressed as mean±SD; Student *t* test, x^2 test were performed. P < 0.05 was considered significant. **Results:** All data are in table. The alcoholism and CAD history were more frequently in male sample, although, percentage of hypercholesterolemia, hypertriglyceridemia, HBP and stressful history were slightly more in women sample. At least 20 % had BMI > 30, however, more than 80 % in man and 90 % in woman had AC over desirable. **Conclusion:** We observed a high percentage of cardiovascular risk factors, manly abdominal, fat in women.

CATEGORICAL VARIABLES	M (%)	F (%)	x^2	CONTINUOS VARIABLES	M (M ± SD)	F (M ± SD)	*t* test
DIABETES	11	9	NS	**AGE: years**	69±7	69±6	NS
SMOKING	7	8	NS	**WEIGHT (kg)**	82±15	68±12	< 0.001
HYPERCHOLESTEROLEMIA	34	38	NS	**BMI (kg/m^2)**	27±4	27±6	NS
HYPERTRIGLYCERIDEMIA	19	26	< 0.001	**SBPi / DBPi (mmHg)**	141/83 ± 26/11	149/85 ± 23/9	0.003 / 0.02
HBP	56	62	< 0.001	**TET (min)**	6±2	6±2	NS
SEDENTARISM	69	67	NS	**VO_2 ml(kg.min)$^{-1}$**	25±8	19±7	< 0.001
STRESS	71	80	< 0.001	**HRPr (mhr)**	151±7	151±6	NS
ALCOHOLISM	19	6	< 0.001	**HRP (mhr)**	128±21	130±20	NS
CAD	15	7	< 0.001	**RP (SBP x HR)**	24799 ± 6420	24484 ± 5551	NS
OBESITY	23	19	NS	**TC (mg/dL)**	207 ± 47	224 ± 44	< 0.001
BMI > 30	23	19	< 0.001	**LDL (mg/dL)**	131±40	138±39	0.06
AC	71% > 94cm	96% > 80cm	< 0.001	**HDL (mg/dL)**	46±12	55±14	< 0.001
				VLDL (mg/dL)	46±12	33±20	NS
				GLUCOSE (mg/dL)	100±27	99±26	NS
				TRIGLYCERIDES (mg/dL)	145±77	155±89	NS

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Angiographic and ultrasonographic results of the SISC (Stent In Small Coronaries) Registry

D Chamie[1], **J. Costa Jr**[1], A Abizaid[1], R Costa[1], F Feres[1], J Maia[1], F Devito[1], D Siqueira[1], A Sousa[1], J Eduardo Sousa[1]. *[1]Instituto Dante Pazzanese de Cardiologia*

Background: PCI in small vessels (SV) represent a frequent and challenging scenario in interventional cardiology with restenosis rates >30%. Part of the problem is the lack of a dedicated stent to this anatomy. Recently developed, the CardioMind"¥ (CMI) Coronary Stent Delivery System (CardioMind Inc.) consists of a bare-metal, self-expandable, nitinol stent with ultra-thin struts (0.0024") incorporated into a 0.014" guidewire platform. We aimed to compare this device to a conventional balloon-expandable stent for the treatment of SV. **Methods:** A total of 22 pts were consecutively treated with CMI stent and compared to 30 successive pts treated with a thin-strut (0.0056") balloon-expandable bare-metal stent (Multi Link Pixel"¥, Guidant Corp.). Only single, de novo, native coronary lesions <14mm in length, in vessels of 2.0–2.5mm in diameter were included. Primary objective was the comparison of QCA lumen loss (LL) and IVUS neointimal (NIH) formation between the 2 groups at 6 months. **Results:** Baseline clinical and angiographic characteristics were similar for both groups. Post procedure QCA revealed a superior acute gain and in-stent minimum lumen diameter among patients treated with Pixel"¥. However, at 6 months, the CMI cohort had markedly less LL and NIH. Of note, IVUS demonstrated that the CMI stent increased its size along the months while Pixel had no significant augment. Binary restenosis happened in 4 pts in the CMI group against 10 in the Pixel group (p=0.07). **Conclusions:** The CMI stent showed enthusiastic preliminary results with superior reduction in LL and NIH compared to a balloon-expandable stent for the treatment of SV. The clinical impact of these findings should be accessed in a larger cohort of patients.

Variable	CardioMind™ (n=22)	Multi-Link Pixel™ (n=30)	P value
Clinical characteristics - Age, years - Male, n (%) - Diabetes, n (%)	61.94 ± 10.9 14 (63.3%) 11 (50%)	56.75 ± 8.92 17 (56.6%) 9 (30%)	0.07 0.77 0.16
Baseline angiographic results - Reference Vessel Diameter, mm - Lesion Length, mm - Minimum lumen diameter, mm - MLD post-procedure, mm - Acute gain, mm	2.20 ± 0.20 10.86 ± 3.19 0.62 ± 0.27 1.91 ± 0.27 1.29 ± 0.27	2.43 ± 0.16 13.12 ± 2.79 0.72 ± 0.24 2.39 ± 0.13 1.68 ± 0.22	<0.0001 0.09 0.16 <0.0001 <0.0001
Follow-up angiographic results - In-stent MLD, mm - In-stent % stenosis - In-stent late lumen loss, mm	1.35 ± 0.60 38.12 ± 26.77 0.73 ± 0.57	1.28 ± 0.74 46.82 ± 30.17 1.11 ± 0.72	0.69 0.28 0.038
Follow-up IVUS results - % neointimal obstruction - % chronic stent expansion	33.7 ± 8.9 % 13%	39.18 ± 24.3% 2.7%	0.02 0.03

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Relationship Between Heart Rate Equations and Maximum Oxygen Consumption for Exercise Program Prescription

J.L.C. Pippi[1], T.F. Panigas[1], T. Dipp[1], C.M. Richter[1], K.C. Belli[1], C.F. Panigas[1], D.C. Bündchen[1], J.Z. Klafke[1], P.R.N. Viecili[1–2]. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background : Over the past decade, awareness of chronic diseases and their relationship to inactivity of individuals has significantly and increasingly heightened. Research has shown that people can benefit a great deal by staying active and exercising regularly. Substantial data are available regarding the benefits of physical activity, but specific and individual prescription is necessary specifically in special populations. **Objective:**This study was designed to evaluate the relationship between the heart rate, observed directly in the treadmill aerobic exercise training, and four heart rate equations in the prescription of different intensities. **Methods:** The sample was composed by 85 subjects. Age (61.56 ± 9.2 years); body weight (74.2 ± 15.5 kg); height (164 ± 10.1 cm) and body mass index (BMI: 27.6 ± 4.9 kg/m2) were analyzed. In addiction, the following characteristics were presented: 64% high blood pressure; 13% diabetes mellitus; 33% high blood cholesterol; 29% high blood triglyceride; 12% smoking; 83% physical inactivity, 3.4% alcohol consumption, and 9% with coronary heart disease. The group performed evaluation in treadmill test with Bruce protocol, according to the scores obtained the subjects started to exercise with an intensity level prescript by maximum oxygen consumption (VO2max) of the Amudsen formula. During the aerobic exercise training the heart rate was monitored being used a Nonin-Onix oximeter, and then, compared to the four heart rate equations, such as, maximum heart rate, Tanaka, Jones and Karvonen. Rating of Perceived Exertion (RPE) was used during the exercise. Data analyses were performed using descriptive statistics, the Mann Whitney-U Test for independent samples, with a level of significance of p<0.05. **Results:** The mean values of VO2max and maximum heart rate measured by Bruce protocol were 28 ± 8.3 ml/Kg.min-1 and 145.3 ± 17.5 mhr, respectively. There were no statistical differences among the heart rate variables and sex. The mean of the maximum heart rate measured in the aerobic exercise was HR = 102.6 ± 11.5 bpm, and for their respective intensities were: HRmax = 93 ± 19 bpm; Tanaka = 96.5 ± 18.9 bpm; Jones = 99.5 ± 19.3 bpm, and Karvonen = 92.5 ± 19 bpm. The results showed that there was no statistical significance among the heart rate achieved in the aerobic exercise, prescribed for VO2MAX. and the four heart rate equations HRmax (220-age), Tanaka, Jones and Karvonen. **Conclusion:** It was concluded that there is no difference between the exercise intensity prescribed by VO2max of the Amudsen formula and the heart rate equation of the HRmax, Tanaka, Jones and Karvonen for the population of this study. Other studies must be done in order to explain these questions.

P1169

Rehabilitation in coronary patient: follow up

J. Kriskovich[1], **R Rasmussen**[1], G Amarilla[1], J Vallejos[1], M Avila[1], E Villegas[1], J Parra Moreno[1]. *[1]INSTITUTO DE CARDIOLOGIA DE CORRIENTES*

Introduction: coronary rehabilitation program have demonstrated benefit effects in coronary patient. **Objective:** to know results and events in coronary patients who consult for a rehabilitation program. **Material and method:** Two hundred and twenty-five patient with ischemic heart disease who consult for rehabilitation program were recruited. Type of study is retrospective with follow up. We evaluated antecedents, coronary risk factors, hospitalizations and death. Patient aged 23–88 years (mean age 64±9 years). Follow up was completed in 220 p (98%), with means time 18 month. **Results:** 68% were female. 71 p (31.5%) were actively in rehabilitation program. In relation with antecedents, previous AMI 101p (45%), diabetes 58p (26%), dyslipemia 192p (85%), hypertension 195p (87%). Total event during follow up were 10 death (4.4%), hospitalizations 45 (20%) due to AMI or unstable angina (55%) and other reasons (45%). Combinative event (death and hospitalizations) occurred in 50p (22.2%). In active patients group we found a tendency to lower events (14% vs. 23%, p=0.07). Patient who left rehabilitation program were 47%. **Conclusion:** we found a high rate of patient who left rehabilitation program. Patient who are performing rehabilitation program had a tendency to lower events rate.

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Detection of coronary artery disease in asymptomatic patients with type 2 diabetes mellitus: Prevalence of perfusion defects detected by stress technetium-99m sestamibi myocardial perfusion single-photon emission computed tomography.

CDC Collaud Carlos[1], RM Redruello Marcela, BJ Blanco Juan, PO Parysow Oscar, MO Masoli Osvaldo. *[1]TCBA [2]TCBA [3]TCBA [4]TCBA [5]TCBA*

Type 2 diabetes is associated with accelerated atherothrombosis and high rates of cardiovascular morbidity and mortality. Patients frequently have asymptomatic coronary artery disease, and prognosis is substantially poorer compared with their non-diabetic counterparts. The DIAD trial recently showed that myocardial perfusion abnormalities were found in >1 in five patients with uncomplicated type 2 diabetes. However, AHA not recommended Myocardial Perfusion SPECT for the routine evaluation of asymptomatic diabetic patients. **Aims:** Evaluate the prevalence of myocardial perfusion abnormalities in asymptomatic uncomplicated type 2 diabetic patients compared with control patients, and identify predictors variables. **Methods:** We analyze 343 asymptomatic consecutive patients and unknown CAD, 71 with type 2 diabetes(mean age 63±10 years, 71 % males) and 272 non diabetics control patients (mean age 63 ± 9 years, 71 % males), withouth significant diferences between populations. Myocardial perfusion SPECT stress test utilizing a semi-quantitative visual analysis was performed using a 17-segment model. Segments were scored using a 5-point score (0 = normal, 1 = equivocal, 2 = moderately reduced, 3 = severely reduced radioisotope uptake, and 4 = absence of tracer uptake). Total ischemic burden was estimated using summed stress, rest, and difference scores (SSS, SRS, and SDS). SSS and SRS were determined by the sum of scores of each segment from the stress and rest images, respectively and SDS was determined by the sum of the difference between the SSS and the SRS. An SSS >3 was considered to be Anormal An SDS> 3 Ischemic. The extent of ischemia was assessed as a percentage of cardiac muscle affected, considering the relationship of SD on the maximum possible for 17 segments (% ischemia = SD/68 x 100) in order to obtain it. It was considered severe ischemia: > 10%. All patients were interrogated for risk factors and considered symptomatic or asymptomatic for angina or equivalent, considering the antecedents and the stress test result. **Results:** prevalence of abnormal, isquemia and severe isquemia were significantly high in diabetic patients respect to control population. Abnormal: 38% vs 22%, p<0.01; isquemia 30% vs 18%, p<0.05, severe isquemia 18% vs 10%, p<0.05. By univariable and multivariable analyses male gender was the only significant variable (p<0.05) associated with an abnormal perfusion study. **Conclusion:**Silent ischemia was detected by perfusion myocardial SPECT studies in the 30% of our diabetic population being severe in 18%. This is significally more prevalent than in normal population. The only variable associated with an abnormal study was male gender. Necrosis was also frequent in this group of patients.

P1171

Analysis of the reflective vasomotor carotid response to the hyperventilation test. Comparative study between normal patients with risk factors and patients with carotid atherosclerotic obstruccion

J. Tripolone[1], G Santiago[2], JM Tripolone[3]. *[1]INSTITUTO MEDICO SAN JUAN [2]INSTITUTO MEDICO SAN JUAN [3]INSTITUTO MEDICO SAN JUAN*

In order to study the vasomotor carotid (C) response (VCR) our research group used a hyperventilation test. We divided the patients (p) in 4 G.: G1) 16 normal (N) patients with an average age of 40 years, G2) Patients with Risk factors FOR ATHEROSCLEROTIC DISEASE, 18 patients with no CAROTID STENOSIS,, with an average age of 67, G3) 32 patients with CAROTID STENOSIS <60%, 66 years of average age, G4) 20 patients, CAROTID STENOSIS > 60% and an average age of 70 years. We did a Colour Doppler study with the ATL HDI 3000 machine, a 7 MHz transducer and 2.5 MHz for transcranial in the petrous portion of carotid (segments C5-C6) with a submandibular approach. The hyperventilation test was performed in 2 minutes, with simultaneous transcraneal control. We evaluated the vasomotor carotid response (VCR) by measuring the resistance index, and delta resistance (DDR) in 3 states: resting, 2 minutes of hyperventilation and the post-hyperventilation state. The DDR was calculated as the difference between basal resistance index anb hyperventilation resistance index (DDR1), and hyperventilation resistance index and post-hyperventilation resistance index (DDR2). Statistical Analysis: Student Test (Significant Difference for p <0.05). **Results:** wE FOUND 6 different kinds of curves: 1- NORMAL: Normal increase (N) (DDR1 AND DDR2) > 10% 2- LOw Amplitude (LA): DDR1 AND/OR DDR2 are < 10% and > 3%. 3- Flat (P): DDR1 AND/OR DDR2 <3%. 4- Inverted or Paradoxical (I): is the one that shows DDR1 AND /OR DDR2 NEGATIVE DELTA in the curve 5- Mixed (M): mixture of the above. 6- Flow Absence (ADF). The incidence of curves in 174 CAROTIDS: G1: 100% N G2: 44% N, LA 28%, P 11%, I 17% G3: 22% N, DA 25%, P 25%, I 23%, M 5%. G4: N 30%, DA 8%, P 8% I 48%, M 3%, ADF 3%. Difference between 4G significant (p = 0) except in curve M (NS). 100% of the C > 60% had abnormal curves

(DA-P-I-M-ADF). The G2 showed a 17% of type I curves and 100% of them had diabetes. **Conclusions** 1–100% of the C>60% had curves that shows pathologic alterations of the vasomotor carotid response (DA-P-I-M-ADF). 2- 56% of patients with risk factors for cardiovascular DISEASE (G2) showed vasomotor carotid response alteration (DA-P-I-M curves). 3-Patients with diabetes, WITHOUT CAROTID STENOSIS, had similar curves THAT those patients with significant CAROTID STENOSIS. 4 - We advise the incorporation of this test as an hyperventilation method for studying the flow self-regulation and cerebral endothelial function. 5 - TEST WITH 100% feasibility.

P1172

Heart failure mortality in three brazilian states from 1999 to 2004: an analysis it's association with other conditions chosen as underlying cause of death.

E. Gaui[1], G. Oliveira[2], C. Klein[3]. [1]*Hospital Municipal Miguel Couto, Rio de Janeiro Brazil* [2]*Universidade Federal do Rio de Janeiro, RJ, Brazil* [3]*Escola Nacional de Saúde Pública,Rio de Janeiro, Brazil.*

Background: Heart failure (HF) is a more prevalent disease in aging people knowing have multiple and chronic health problems and can be mentioned in the death certification in other line than underlying cause of death (UCD) according specific rules. The importance of HF contributing to death should be better understood. **Methods:** We analysed HF mentioned anywhere in 2.538.778 death certificates of three brazilian states: Rio de Janeiro (RJ), Sγo Paulo (SP) and Rio Grande do Sul(RS) from 1999 to 2004 but not coded as underlying cause of death (UCD). HF was defined using the 10th revision of International classification of diseases (ICD-10) by the codes: I11.0 (hypertensive heart disease with congestive heart failure), I13.0 (hypertensive heart and renal disease with congestive heart failure), I13.2 (hypertensive heart and renal disease with heart and renal failure), I25.5 (ischaemic cardiomyopathy), I31.1 (chronic constrictive pericarditis), I42.0 (dilated cardiomyopathy), I42.6 (alcoholic cardiomyopathy), I50.0 (congestive heart failure), I50.1 (left ventricular heart failure) or I50.9 (heart failure unspecified). The objective of this study is to identify the conditions more frequently coded as UCD when HF were mentioned anywhere in the death certification but was not chosen as UCD. **Results:** From 1999 to 2004 HF was mentioned anywhere in death certificates and were chose as UCD in 30.039 (53.2%) in RJ data, 70.949 (46.1%) in SP and 19.966 (41.3%) in RS. Many were the diseases coded as UCD with mentined in other lines of death certificates. HF mentioned anywhere in the death certificates appears to be associated more frequently with few groups of diseases. Three groups can be distinguished because it's percentage as UCD: diabetes mellitus, ischaemic heart disease and pulmonary disease. The diabetes mellitus, code E14, appeared as UCD with HF mentioned anywhere in the death certificate in 11.7% (RJ), 7.8% (SP) and 7.2% (RS). The group of pulmonary disease, codes J18, J44, J96 and J98 was the UCD in 15,1% (RJ) 17.9% (SP) and 21.0% (RS). The ischaemic heart disease, codes I21, I24 and I25 was chosen as UCD in 22.4% (RJ), 22.8 (SP) and 26.5% (RS). The Chagas disease, an endemic condition in Brazil is of especial interest and was coded as UCD only in 4% in SP data and 0.3% in RJ and RS, as expected, cause it's low prevalence in this three states. **Conclusion:** The use of UCD to study the mortality rates of HF underestimate this problem. When HF were mentioned anywhere in the death certification diabetes mellitus, pulmonary disease and ischaemic heart disease were the major conditions chosen as UCD. The study of HF probably needs multiple cause of death analysis.

P1173

Long-Term Outcomes in Patients with Unstable Angina Evaluated in a Chest Pain Unit

T. G. Allison[1], G.S. Reeder[1], P.A. Smars[1].

Background: While unstable angina has been extensively studied in the acute setting, long-term (> 1 year) outcomes in unstable angina patients have not been reported. **Methods:** In the Chest Pain Evaluation in the Emergency Room (CHEER) study, 424 Olmsted County patients presenting with unstable angina at intermediate risk by AHCPR criteria for an acute event were randomized to a chest pain observation unit or direct admission. A sample of 100 patients with unstable angina but at high risk for an acute event were also recruited as a comparison group and followed in the same fashion. After elimination of patients who refused to have their data used for further research, 408 intermediate and 91 high risk patients were available for analysis. **Results:** Outcomes were determined through a review of the Mayo Clinic electronic medical record. Average length of follow-up was 4.9 $\pm$ 1.7 years. Predictably, high risk patients had significantly poorer survival and more long-term events than intermediate risk patients, but there were no differences between intermediate risk patients evaluated in the chest pain unit versus those directly admitted to hospital. **Conclusion:** Use of a chest pain observation does not increase long-term morbidity or mortality in patients presenting with unstable angina at intermediate risk for an acute event. Risk stratification by AHCPR guidelines was effective predicting long-term outcomes.

LONG-TERM CARDIOVASCULAR OUTCOMES IN UNSTABLE ANGINA

Outcome [All reported as % within group]	Intermediate Risk Admission N=209	Intermediate Risk Chest Pain Unit N=199	High Risk N=91
Death	8.1	8.5	16.5
Cardiovascular death	5.3	2.5	8.8
Myocardial infarction	10.5	8.0	20.9
Revascularization	23.4	18.6	36.3
Congestive heart failure	5.7	6.5	12.1
Unstable angina	6.7	7.0	23.1
Cardiac arrest	0.0	0.5	2.2
Stroke	4.3	3.5	7.7
Vascular surgery	1.9	1.5	7.7
Any cardiovascular event	33.5	29.6	64.8

All comparisons between high risk and all intermediate risk patients were $p < 0.05$ except for stroke ($p=0.121$). All of the comparisons between admission and chest pain unit were $p > 0.05$.

P1174

PREDICTORS OF MEDIASTINITIS AFTER HEART SURGERY

S. Olival[1], B. Santos[1], R. Gomes[1], M. Santos[1], K. Senna[1], A. Rouge[1], M. Freitas[1], R. Vegni[1], J.O.R. Brito[1], O. N. Barbosa[1].

Background: Mediastinitis increases morbidity, mortality and hospitalization costs of patients who undergo heart surgery. Objective: To assess factors associated to mediastinitis incidence after heart surgery. Design: Non-concurrent cohort study. **Methods:** Patients who underwent heart surgery from January 2002 to August 2005 were consecutively sampled. We analyzed the association between mediastinitis incidence and 15 preoperative, 8 peroperative and 13 postoperative variables. Univariate analysis was performed using t, Mann-Whitney, chi-squared and Fisher exact tests. Variables which attained p values less than 0.25 were tested in a multivariate logistic regression model. **Results:** We analyzed 2007 patients. Sample median age was 58 (interquartile range: 48–67) years; 739 (36.8%) patients were women. Surgeries included 1282 coronary bypasses, 684 valve surgeries and 250 other surgeries; 206 patients underwent combined surgeries. Sixty (3%) patients presented postoperative mediastinitis. The final logistic regression model was: **Conclusion:** Male gender, age, obesity, EuroSCORE $\geq$ 5, reoperation, postoperative agitation and atrial fibrillation were independent predictors of mediastinitis in our sample.

Variables	OR	p	95% CI
Male gender	2.11	0.018	1.14–3.92
Age (years)	1.03	0.029	1.01–1.05
BMI > 30	3.18	< 0.001	1.74–5.81
EuroSCORE $\geq$ 5	2.60	0.001	1.45–4.69
Reoperation due to bleeding	3.25	0.001	1.60–6.61
Agitation syndrome	2.51	0.029	1.10–5.72
Postoperative atrial fibrillation	3.95	< 0.001	2.25–6.94

P1175

Nutritional Profile in Outpatients With Chronic Heart Failure in a Heart Failure Clinic

E. Britto[1], S Chermont[1], E T Mesquita[1]. [1]*FEDERAL FLUMINENSE UNIVERSITY*

Backgrounds: Heart failure (HF) is a clinical syndrome, that promote nutritional and metabolic changes associated with cachexia. Recently, therefore, has been associated with metabolic syndrome and insulin resistance **Objective:** to determine the nutritional profile of stable patients with heart failure in a university heart failure clinic **Methods:** Following a prospective observational protocol, were evaluated 35 patients (NYHA I,II and III), age 56$\pm$11 years, 22 females and 13 males. Data was recorded by nutritional assesment sistematic questionaire that included weight, height, BMI, weight changes, abdominal circumference and data of lean and fat mass. **Results:** Data showed that 23 patients (65%) present overweight or obesity (BMI. 29$\pm$5). No patients presented any degree of malnutrition. Abdominal circunference was increased in 100% of women and 89% of men. Eighteen patients supported or increased weight since the onset of HF. Fifty percent of patients present loss muscular mass. **Conclusion:** In the sample of present pilot study, patients with heart failure presented overweight and obesity, associated with increased central adiposity, suggesting presence of insulin resistance in this patients.

P1176

The role of balloon static atrioseptostomy in inter atrial estabilization of infants with complex congenital heart disease

L. Simões[1], PR Travancas[1], **C Lace**[1], JG Athayde[1], W Paiva[1], A Inocenzi[1], M Celente[1], F Gurgel[1], AH Dorigo[1], CC Assef[1]. [1]*NATIONAL HEART INSTITUTE (RIO DE JANEIRO) - BRAZILIAN HEALTH DEPARTAMENT*

Background: Children with complex congenital heart disease (CCHD) made need openning of interatrial septum in order to facilitate blood mixture at atrial level to survive. **Objetive:** To evaluate the efficacy of balloon atrial septostomy (BAS) in the infants (out site first month of live) with complex heart disease presenting in critical care condition. **Material:** A total of 20 consecutive infants with mean age of 9 month (range 2.6 to 29 months) were submited to BAS because of severe hypoxemia in 9 pts (transposition of great vessels – group one), sistemic venous congestion in 8 with tricuspid atresia (TA – group two) and pulmonary venous congestion in three with left AV valve atresia (LAVA – group three). In six patients (two with TGV, two with TA and two with LAVA) the BAS was performed using progressive balloon dimension. In all others pts only one balloon was used. **Result:** In pts with TGV the oxigenation saturation rased from 56 to 79%. In group two the RA/LA gradient decrease from 13 to 2.5 mmHg with an increase of 22% in the sistemic blood pressure. In the group three, pts experienced a significance droop in the LA/RA gradient (19 to 4 mmHg) with decrease in the pulmonary congestion. Sixteen pts came to definitive/paliative surgery in stabe condition (21 days to 6 months after the BAS). One pt of the group three died with acute pulmonary congestion one month after BAS. **Conclusion:** The BAS is an effective and low risk tecnique to increase interatrial mixture for pts with complex congenital heart disease who are at critical care condition but the efficacy is provisory and can performed only to improve the medical condition to preper this pts to surgery

P1178

VASCULAR EFFECTS OF CANDESARTAN AND TEMPOL IN A MODEL OF METABOLIC SYNDROME

NF Renna[1–2], ES Gonzalez[1–2], MC Lama[1], RM Miatello[1–2]. *[1]Lab. Cardiovascular Pathophysiology - IMBECU-CONICET. Argentina [2]Deparment of Pathology. School of Medicine. National University of Cuyo. Mendoza. Argentina*

Introduction: The vascular remodeling contributes to the pathophysiology of vascular diseases, including metabolic syndrome (MS). Cellular mechanisms implicated in arterial remodeling in MS are complex; however angiotensin II and reactive oxygen species are among the systems shown to be essential. **Objective:** To examine the vascular remodeling at mesenteric level and to evaluate the participation of the renin-angiotensin system (RAS) and the oxidative stress by means of pharmacological tools such as administration of candesartan (Cn), an AT1 antagonist, and 4-OH Tempol (Tp), a superoxide dismutase mimetic, respectively, in an experimental model of MS. **Methods:** Male spontaneously hypertensive rats (SHR) and Wistar Kyoto rats (WKY), were distributed in 4 groups (n=18 each). Two of them received 10% fructose solution along 6 weeks (FFHR and FFR). After that, groups were again divided in 3 groups (n=6 each): I- Controls, II-Cn: oral administration (10 mg/kg/d) and III- Tp 10–3M in drinking water. At the end of the protocol the following variables were examined: systolic blood pressure (SBP-mmHg), HOMA index (H), plasma triglyceride (TG-mg/dL); basal glycemia (BG-mg/dL), HDL-col (HL-mg/dL), plasmatic lipid peroxidation by TBARS (TB-μmol/L), aortic NAD(P)H oxidase activity (NA-cpm/mg), relative heart weight (RHW-g/mg), left ventricular myocardiocyte cross-sectional area (MCA-μ2), Lumen to media ratio (L/M) and determination of NF-kB y VCAM-1 expression by inmunohistochemistry (IHC) in mesenteric arteries and connective tissue by confocal inmunofluorescence and western blot. Data (media±sem) were processed by ANOVA and Bonferroni post-test. Symbol * indicates $p<0.01$ v WKY and # $p<0.01$ v FFHR **Results:** Compared with WKY, experimental model animals developed MS: SBP: 180±4* v 130±5; BG: 140±10* v 81±5; H: 4.0±1.0* v 0.8±0.5; TG:123±25* v 55±1; and decreased HL:11±2.5* v 19±2. Cn administration significantly reverted SBP: 100±10# and H: 2.0±0.9#. Tp administration partially reverted H: 2.7±0.5#. ROS increased in FFHR (TB: 170±20* v 50±10; NA: 300±80* v 15±3.4) but reverted after administration of both Cn (TB: 60±12#; NA: 100±20#) and Tp (TB: 70±10#; NA: 50±7.8#). FFHR developed cardiac hypertrophy: increased RHW: 4.1±0.02* v 2.5±0.01 and MCA: 1750±29* v 830±22 and reverted by Cn (RHW: 2.55±0.1# and MCA 900±35#) and Tp (RHW 3.4±0.08# and MCA 1200±85#). L/M ratio showed a significant reduction in FFHR (L/M: 10±0.2* v 14±1), that completely reverted after administration of Cn (L/M: 15±1.1#) and partiality after Tp treatment (L/M: 12.5±0.5#). Inflammatory markers were increased in the vascular wall and mesenteric tissue in FFHR, but reverted with Cn and Tp treatments. **Conclusion:** The data confirm the development of the pathological experimental model and suggest that oxidative stress and the consequent activation of genes participating in the inflammatory process. In addition, this study demonstrates that RAS participate in the structural and inflammatory changes associated to the MS experimental model.

P1179

Detection, awareness, counseling and control of hypertension in the US adult age 18 years of more: A NHANES 1999–2004 study.

Sunil Kumar Agarwal[1], Samir Saba[2]. *[1]University of North Carolina at Chapel Hill, NC, USA [2]University of Pittsburgh Medical Center, Pittsburgh, PA, USA*

Background: Hypertension is a modifiable risk factor for future heart disease and stroke, the leading causes of mortality in the US. This study looked at the detection, awareness, counseling and control of hypertension in the US adult ≥ 18 years of age. **Methods:** National Health and Nutrition Survey exam (NHANES) 1999–2004 data were analyzed using BP examination and behavioral interview component for control of hypertension. Estimates were derived taking into account primary sampling units, strata and using sampling weights to find estimates for the US adult population. Hypertension was defined as either average blood pressure ≥ 140/90 mm of Hg during examination, or history of high blood pressure. **Results:** Blood pressure information on 15,040 study subjects (representing 184.6 million US adults) was analyzed. 83.7±0.5% had a blood pressure recording within last one year. Overall, 26.6± 0.75 % of the study population were hypertensive (17.5 ± 0.5% on examination, and 25.4± 0.7% had a history). 44±0.3% individuals with hypertension during examination had never been told that they had hypertension previously. While, 61.5±0.5% of the individuals who were ever told they had hypertension were normotensive during examination. Blood pressure medications were prescribed to 75.8±1.2% of the individuals with hypertension. Among the individuals who had been ever told they had hypertension; 81±0.8 % had been informed about hypertension twice or more. The following advices were given for the control of hypertension: weight control to 49.9±1%, more exercise to, 61.1±1.1%, reduction in salt intake to 62.0±1.1 %, reduction in alcohol intake to 22.9±0.9%, quitting smoking to 3.7%, and increase in potassium intake to 0.4%. Self reported compliance for various health care provider advices was as follows: use of antihypertensive medication (86.1±0.9%), weight reduction (75.9±1.7%), more exercise (58.5±1.1%), salt intake reduction (83.9± 1.3%), and alcohol intake reduction (76.0±2.2%). **Conclusions:** A large proportion of US adult population has hypertension, undetected hypertension and not-controlled hypertension. Furthermore, there is a need to improve detection, counseling and compliance towards lifestyle modification and pharmacotherapy.

P1180

Critical Pulmonary Valve Stenosis of the Neonate: Treatment With Balloon Percutaneous Valvoplasty.(BPV)

L. Simões[1], C Lace[1], PR Travancas[1], PS Oliveira[1], **F Gurgel[1]**, W Paiva[1], A Inocenzi[1], M Celente[1], JG Athayde[1], AH Lago Dorigo[1]. *[1]NATIONAL HEART INSTITUTE (RIO DE JANEIRO) - BRAZILIAN HEALTH DEPARTAMENT*

Introduction: The critical pulmonary stenosis of the neonate (CPSN), is a cyanotic, ductus-dependent CHD, with potential resolutions by surgical interventionist procedures or by balloon percutaneous pulmonary valvoplasty.(BPV) **Objective:** To evaluate the applicability and efficiency of the of the BPV in the CPSN in a pediatric cardiology center. **Method:** This is a prospective research of a series of cases. We have evaluated the results of BPV in 57 neonates(11 +/- 6 days) in carriers of CPSN. All the neonates included in this series had to use PGE1 to control hypoxemia. Doppler echocardiography was used prior to BPV to analyze the RV-PA gradient, also the valvar morphology and finally, the RV infundibulum morphology. After the procedure, the RV-PA gradient and the degree of valvar insufficiency were quantified by the Doppler technique. The result was classified as efficient when the post-valvoplasty residual gradient was less than 45 mmHg and no surgical interventions to increase pulmonary flow was needed. A non-satisfactory level was considered when a gradient of >45 mmHg or obit were registered. The maximum balloon diameter/pulmonary ring. Relation used was of 1.5. The sequence post BPV observed was from 5 to 133 months. **Results:** We observed 3 neonates deaths. One, resulted from a direct procedure complication (perforation of the RV outflow tract), one died from hypoxemia and acid pH levels after BPV, and the third one had respiratory complications still in the hospitalization stage after BPV. The pre-BPV gradient was 97+/-16 mmHg and 33+/-02 mmHg post BPV. Four were submitted to a new study with success. In one surgical correction with RV outlet enlargement was necessary. **Conclusion:** The CPSN can be treated in a safe and efficient manner through BPV. When the result is satisfactory, the technique is considered curative.

P1181

Aortopulmonary window–impact of associated lesions on natural history and in the surgical results

L. Simões[1], **C Gangana[1]**, J Caliani[1], CC Assef[1], R Minardi[1], AH Lago Dorigo[1], PR Travancas[1], C Lace[1], M Celente[1], F Gurgel[1]. *[1]NATIONAL HEART INSTITUTE (RIO DE JANEIRO) - BRAZILIAN HEALTH DEPARTAMENT*

Objectives: The aortopulmonary window (APW) is a communication between the pulmonary artery (PA) and the ascending aorta in the presence of two separate semilunar valves (Ann Thorac Surg 2004;77:484–7). It is a rare malformation and represents 0.15 to 0.60 % of the congenital heart defect, being associated with other cardiac defects in ¼ a ½ of the cases The clinical impact on the natural history of the APW depends on the size of the window and the presence of associated defects. **Methods:** Retrospective longitudinal study, based on the review of medical files of patients diagnosed between 1995 and january 2007. Diagnosis was confirmed by the review of echocardiograms, hemodynamic studies and in surgical cases, by the surgical findings. The following variables were obtained and analyzed: gender, age, clinical presentation, associated defects and APW classification. **Results:** Of ten patients diagnosed as having APW, seven had associated lesions. Eight patients were submitted to surgical treatment with two deaths. One patient was not submitted to surgery due to pulmonary hypertension and another one died before the surgery due to a respiratory infection complication. The clinical picture of pulmonary hyperflow with dyspnea and fatigue on exertion was observed in all cases. Two patients presented repeated respiratory infection and two others had congestive heart failure of difficult control. In 8 cases, the diagnosis was achieved through echocardiography and in 2 cases, by cardiac catheterism. Seven cases presented associated congenital heart defects: type B aortic arch interruption (1), anomalous origin of the right coronary artery of the pulmonary artery (1), interatrial communication (IAC) with left superior vena cava persistence (1), single ventricle with single atrioventricular (AV) valve (1), interventricular communication (IVC) associated to pulmonary arterial hypertension (1), tetralogy of Fallot (1) and mild aortic stenosis (1). In seven patients, the APW was of the proximal type (type I, according to the classification by Richardson), and in 3 patients, the APW was of the distal type, involving the main pulmonary artery and the right pulmonary artery (type II of Richardson). The size of the APW varied from 0.5 to 1.2 mm. Five of the patients submitted to surgery are being followed at the outpatient clinic of our Institution, with good clinical evolution throughout a period of 05 months to 6 years (mean of 18.7 months) and one patient submitted to the repair of the tetralogy of Fallot at another institution also shows good clinical evolution. Of the two surgical deaths, one occurred in the OR, with the APW being associated with the interruption of aortic arch and broad interventricular communication, and the second occurred in the immediate postoperative period as a consequence of pulmonary arterial hypertension. **Conclusion:** The surgical results are satisfactory when the APW presents as an isolated defect and when surgery is performed early, preventing the development of irreversible arterial pulmonary hypertension. However, in the presence of an associated complex defect, the surgical result is worse.

P1182

PERSPECTIVA DE GÉNERO EN TORNO A LA CARDIOPATÍA ISQUÉMICA Y LA SEXUALIDAD DE LOS PACIENTES CORONARIOS.

I. Brevis[1]. *[1]Hospital Guillermo Gant Benavente Concepción*

Tradicionalmente, la enfermedad coronaria ha sido considerada como una enfermedad que afectaba a los varones. Esto puede explicar que durante mucho tiempo no se haya incluido a las mujeres en los programas de investigación ni en los ensayos clínicos, extrapolando los resultados sólo al sexo masculino. **Objetivos.** Realizar una revisión de las diferencias y desigualdades entre mujeres y hombres en relación con la incidencia, la mortalidad, la letalidad, la presentación, el diagnóstico y los factores de riesgo para la cardiopatía isquémica (CI), y como se relaciona esta patología con la sexualidad de los pacientes coronarios. **Método.** Revisión bibliográfica de los efectos de las enfermedades cardiovasculares y la sexualidad de los pacientes con CI con perspectiva de género considerando sus temores más habituales, fármacos que afectan la función sexual, entre otros factores importantes que hay que considerar a la hora de enfrentarse a estos pacientes. Los criterios temáticos fueron los diferentes aspectos de la enfermedad: incidencia, prevalencia, mortalidad, letalidad, factores de riesgo, pronóstico, retraso y actitudes en relación con la patología. La revisión se complementó con la búsqueda de los autores y grupos de investigación más relevantes en cuanto a la CI, principalmente en nuestro medio. El período revisado abarca desde 1987 hasta 2007, y las bases de datos utilizadas fueron las bases de datos Sciencedirect, ISI web, EMB

reviews, Medline, PubMed y Lilacs. La técnica de búsqueda utilizada fue la combinación de palabras claves y, posteriormente, las referencias de los artículos encontrados y los relacionados con éstos. **Resultados.** Los resultados obtenidos nos indicaron que la mayoría de los estudios están principalmente enfocados hacia el sexo masculino, tanto en lo que se refiere a la CI propiamente tal, como a la sexualidad de los pacientes. Entre hombres y mujeres con CI se describen distintas características clínicas, tratamiento y pronóstico, y se resalta la importancia de la edad y la gravedad de la presentación clínica en la elevada mortalidad de la CI. En cuanto a la sexualidad son escasos los estudios que incluyen al sexo femenino. **Conclusiones.** La CI es un proceso multifactorial y hay evidencias de que está relacionada con determinados factores de riesgo. Asimismo, estos factores de riesgo pueden actuar de manera diferente entre mujeres y hombres, lo que señala la importancia de establecer pautas de actuación preventiva y terapéutica diferentes según el sexo, y con perspectiva de género.

P1183

Angiotensin-(1–7) downregulates tyrosine hydroxylase through a proteasome-dependent pathway

M. A. Lopez Verrilli[1], M. M. Gironacci[1]. [1]*Instituto de Química Física Biológicas, Facultad de Farmacia y Bioquímica, Universidad de Buenos Aires.*

Hypothalamic norepinephrine (NE) release may regulate arterial pressure by altering sympathetic nervous system activity. It has been demonstrated that angiotensin (Ang) II enhances NE outflow contributing to the sympathetic hyperactivity in hypertension. It has been suggested that the renin-angiotensin system may counteract the pressor effects of Ang II by Ang-(1–7) generation, an antihypertensive component of this system. Since Ang-(1–7) decreases hypothalamic NE release and this effect may be correlated with a diminished NE synthesis, we hypothetize that Ang-(1–7) may downregulate tyrosine hydroxylase (TH), the rate-limiting step enzyme in cathecolamines biosynthesis. Our aim was to investigate the effect of Ang-(1–7) on TH activity and expression at the central level. TH activity was evaluated in hypothalami from Wistar-Kyoto and spontaneously hypertensive (SHR) rats by the release of tritiated water from ^{3}H-L-tyrosine. TH expression and phosphorylation at serine (Ser) 19 and Ser-40 were determined by western blot in primary neuronal cultures from hypothalami of SHR rats. Basal TH enzymatic activity was significantly higher in hypothalami from SHR than in WKY nomortensive controls (82±5 [^{3}H]-H2O nmol/protein mg.h in SHR vs 69±4 [^{3}H]-H2O nmol/protein mg.h in WKY) ($P < 0,05$; n=10). Hypothalami preincubated with 100 nM or 1 μM Ang-(1–7) showed a significant decrease in TH specific activity in both rat strains. The enzymatic activity of TH is positively regulated by its phosphorylation at Ser residues by a variety of protein kinases. We investigated whether Ang-(1–7) may affect TH phosphorylation in SHR hypothalami cathelocaminergic neurons and observed that 100 nM Ang-(1–7) decreased the phosphorylation of TH at Ser-19 and Ser-40, 32±4% and 31±5%, respectively. Under depolarization with high K^{+} -which leads to an increase in Ca^{2+} influx and the concomitant activation of kinases which in turn may phosphorylate TH- we observed an augmented TH phosphorylation, which was blocked by Ang-(1–7). Treatment of hypothalamic neuronal cultures from SHR with 100 nM Ang-(1–7) during 30 min caused a decrease in TH endogenous expression of 31±3% and this effect was blocked by an AT_2 receptor antagonist, and not by an AT1- or Mas receptor antagonist, suggesting the involvement of AT_2 receptors. The decrease in TH levels caused by Ang-(1–7) may be due to an increased degradation of the protein. Since the ubiquitin-proteasome system is the major pathway for protein degradation, we examined the involvement of the proteasomal pathway in the Ang-(1–7)-induced decrease in TH expression. We observed that MG132, a selective proteasome inhibitor, blocked the Ang-(1–7)-mediated TH downregulation, suggesting a proteasome-dependent TH degradation. We conclude that Ang-(1–7) caused a reduction in TH activity and expression at the central level. Together with the fact that the peptide induces a decrease in NE release, our study supports a negative neuromodulator role for Ang-(1–7) on central sympathetic nervous activity.

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Hospital Costs and Effects of Congenital Heart Surgery stratified with Aristotle Score

E. Trindade[1], C. Tanamati[1], M. Barbero Marcial[1], R. Assad[1], M. Jatene[1], A. Riso[1], A.A. Lopes[1], L. Caneo[1], S. Fujii[1], C. Yukiko Osato[1]. [1]*Heart Institute of the São Paulo University Medical School* [2]*Heart Institute of the São Paulo University Medical School* [3]*Heart Institute of the São Paulo University Medical School* [4]*Heart Institute of the São Paulo University Medical School* [5]*Heart Institute of the São Paulo University Medical School* [6]*Heart Institute of the São Paulo University Medical School* [7]*Heart Institute of the São Paulo University Medical School* [8]*Heart Institute of the São Paulo University Medical School* [9]*Heart Institute of the São Paulo University Medical School*

Optimization of resource use becomes even more crucial in developing countries due to the scarcity of health care system financing sources. Public and private payers are, thus, expecting transparent and rigorous account of the results for each investment. In the context of significant amounts of investment for the congenital heart surgery programs, risk stratification becomes an important instrument to demonstrate the complexity of these programs. This partial report aims to show the first results and to discuss the cost-effectiveness methods applied. **Methods** The integration of the InCor information system, SI3, imposed designation of the primary procedure documented by the surgeon for each hospital admission, bar codes data collection and electronic prescription of drugs. Procedures were harmonized with the STS Nomenclature, related and integrated to the administrative and reimbursement SI3 tables. Micro-costs building method were applied to estimate costs related to each particular event of care from admission to hospital discharge (materials, medications, multi-professional procedures, tests, rate per hour at the operating theatre and the ICU or ward bed rate per day. Physician fees were excluded from the evaluation.). Morbidity events and mortality ('Assigned to this Operation' as defined by the STS) were documented in real time. Before discharge, quality and quantities of resources used were cross-verified for data completeness and consistency. After hospital discharge, a clinical team ensures life long post-operative follow-up, with periodic visits and facilitated access for all required care. **Results** The first 419 consecutive cases underwent congenital heart surgery, repair or palliation, at the Heart Institute of the S-ýo Paulo University Medical School between January the 03rd and December 14th, 2005. Patients' average age and its variation were not different between Aristotle strata for analysis (Risk level 1 from 3 to 5.9, 2 6 to 7.9, 3 8 to 9.9 and level 4 for those having scores of 10 or more). Kaplan Meyer actuarial survival does not show differences between 1st and 2nd levels and demonstrates a trend of similarity between 3rd and 4th strata: only 3 patients did not survive out of the 57 with scores lower than 6 and other 3 died from the 2nd stratum with 131 patients. At the highest strata, however we observed 14 and 15 deaths out of the 86 and 145 patients integrating the 3rd and 4th levels, respectively. Patients with the highest scores, 4th stratum required the double of the length of stay and ICU use than the 2nd stratum, as well as more than double the number of diagnostic tests and therapeutic procedures required. Thus, costs for the hospital admissions have increased three fold from the 2nd stratum until the 4th level of scores. Refinements of the complexity score may help to further discriminate diagnostic co-morbid categories and associated factors predicting use of resources and costs. This part of the team approach aims to secure program assessment for improvements, to expand the access to care for children with complex disease and to participate in the international effort.

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Distribution of beta–adrenergic receptors polymorphisms in a Brazilian Heart Failure Clinic.

S. Bernardez[1], O. Tardin[1], L. Pessoa[1], T. Alves[1], B. Cavaliere[1], R. Abdalah[1], S. Chermont[1], V. Navega[1], G. Ribeiro[1], E. Mesquita[1]. [1]*FLUMINENSE FEDERAL UNIVERSITY*

Background: Patients can respond in diverse manners after exposure to the same medication and that response is influenced by genetic variation. Previous studies have demonstrated that β -adrenergic receptors polymorphisms have potencial impact in heart failure therapies. A common polymorphisms of de β1 adrenergic receptors is the substitution of Arginine (Arg) or Glicine (Gly) in exon position 389. This frequency have been showed to differ by ethnic group with the Arg 389 allele more common in patients with European backgrounds and less common in Africa Americans. The aim of the present study was to investigate the genotype distribution of the Beta-Adrenergic receptor (ADRB) polymorphisms in a Brazilian heart failure clinic. **Methods:** A total of 146 heart failure patients (mean age 57+ 13 years), with systolic dysfunction confirmed by echo, class II through IV HF NYHA were recruited for this study. Of the total, 86 pts were evaluated for β1 and 119 for β2-ARs polymorphisms. The beta1ARSer49Gly, beta1ARGly389Arg and beta2AR Gln27Glu polymorphisms were determined by the polymerase reaction and restriction fragment length polymorphism.. **Results:** The genotype distributions of the β1 and β2-ARs polymorphisms in heart failure Brazilian population are shown in table 1. **Conclusion:** In a multi-ethnical population the Arg389 allele appears in low frequency in patients with heart failure.

DISTRIBUTIONS OF β–ADRENERGIC RECEPTOR POLYMORPHISMS IN BRAZILIAN POPULATION WITH HEART FAILURE.

ADRB1	Allele G(Arg)	Allele C(Gly)
Arg389Gly	0,3879	0,6120
ADRB1	Allele G(Ser)	Allele A(Gly)
Ser49Gly	0,2045	0,7954
ADRB2	Allele G(Glu)	Allele C(Gln)
Gln27Glu	0,2764	0,7235

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Ankle brachial index and its associated obesity criteria

T. Paes[1], D. Orlandi[1], F. Gazoni[1], H. Guimaraes[1], L. Vendrame[1], R. Lopes[1], A.C. Lopes[1]. [1]*Sao Paulo Federal University*

Introduction: The peripheral obstructive artery disease (POAD) is an independent predictor for cardiovascular events and is related to risk factors such as obesity. The abdominal obesity can be associated to POAD independently from other cardiovascular risk factors. When obesity is defined by body mass index (BMI), abdominal circumference (AC) and waist-hip index (WHI) it can predict the amount of risk for POAD by its correlation to ankle brachial index (ABI) **Objectives:** To correlate ABI with obesity criteria as BMI, AC and WHI in patients admitted to the university hospital. METODOLOGY: Transversal study with protocol identifying risk factors to cardiovascular disease, pressure measures and anthropometric measures. **Results:** Sixty two patients were evaluated: 36 men and 26 women, age varied from 20 to 80 years old, mean of 58. Among risk factors to cardiovascular disease hypertension was found in 74,19%, diabetes in 27,41%, dyslipidemia in 32,25%, smoke in 30,64%. The BMI ranged from 17.39 to 41.25 (mean: 24.67), AC from 66 to 131cm (mean: 90.5cm), WHI from 0.8 to 1.11 (mean: 0.93) and ABI from 0.34 to 2.85 (mean: 0.97). The association effect between BMI with ABI and AC with ABI was not statistically significant (p= 0.9 and p= 0.4). Although, it was observed that the association effect between WHI and ABI is that to each unity of WHI rised, the ABI reduces up to 1.2 (p=0.03) **Conclusion:** There was association between WHI and ABI but not with BMI and AC, suggesting that POAD complications can be related to WHI variation.

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Dilated Cardiomyopathy Registry in Chronic Hemodialys Patients (REMIDIAL)

L. Gastaldi[1–2], M Viso[1–2], C Mascheroni[3], F Acosta[3], D Genova[4], A Davila[5], S Pezzotto[5], H Lastiri[2], J Beloscar[1–2], P Morales. *[1]CARRERA DE ESPECIALIZACION EN CARDIOLOGIA-FACULTAD CIENCIAS MEDICAS. FACULTAD DE CIENCIAS MEDICAS. ROSARIO [2]COMITE DE MIOCARDIOPATIAS, FEDERACION ARGENTINA DE CARDIOLOGIA [3]SERVICIO DE NEFROLOGIA, HOSPITAL CENTENARIO, ROSARIO [4]SERVICIO DE CARDIOLOGIA HOSPITAL ESPAÑOL DE ROSARIO [5]INSTITUTO DE INMUNOLOGIA. FACULTAD DE CIENCIAS MEDICAS UNIVERSIDAD NACIONAL DE ROSARIO*

The objective this study was to identify the epidemiological and clinical profile of Dilated Cardiomyopathy patients with chronic hemodialysis treatment. **Material and Methods:** A total 109 patients in different hospitalary services of Rosario were enrolled in this study. Recorded data included personal and demographic information, date of the first consultation and beginning of symptoms, etiology, functional class (classified by New York Heart Association), clinical data, and therapeutic treatments applied. Data were analyzed using the STATA statistical program. **Results.** Average age was 54,2±16,6 years (males 52,3%). There were no significant differences in age according to sex. The hemodialysis used plan was of 4 hours, 3 times per week. Average dialysis time was 48,1±34,4 months (Range= 4–180). Only 7 patients (6,4%) were hospitalized. Most frequent chronic renal failure etiologies were diabetic nephropathy (28%), nephrosclerosis (21%), Glomerulonephritis (10%), and renal Polycystic (9%). When analyzing Dilated Cardiomyopathy symptoms and signs, asthenia was found in 10,1% patients, 15,6% had edemas, 1,8% pulmonary rales, 16,5% Jugular ingurgitation, and 15,6% present dyspnea. When analyzing pathological antecedents, 24,8% were diabetic, 77,1% have arterial hypertension, 7,3% had suffered from myocardial infarction, 14,7% had lipid disorders, 3,7% had suffered stroke, 6,4% had chronic obstructive pulmonary disease, 9,2% had valve diseases, 1,8% had Chagas' disease, 7,4% had periphery vascular disease, and 29,4% presented other antecedents. Furthermore, 4,6% were alcoholic, 21,1% were smokers (mean daily cigarettes number 14,4±10,7; mean habit duration 35,6±13,8 years). Renal transplantation was carried out in 7 patients (6,4%). Exercise stress testing was carried out only for 4 patients, and Gamma Imaging Analysis in one. Prescriptions: betablockers 32%, Angiotensin Converting Enzyme Inhibitors 25%, Aspirin 15%, Calcium Antagonists 12%, Angiotensin receptor Antagonists 6%, nitrites 6%, anticoagulants 3%, Furosemide 2%, and amiodarone 2%. erithropoyetin 61%, folic acid 73%. General laboratory: Red cells 3,7±0,8 millions; Hematrocrit 32,4±5,1%; Hemoglobin 11,4±6,3 gr; Creatinine 7,6±2,8 mg%; Uremia119,6±32,8 mg%; Sodium 139,5±7,8 meq/l; potassium 4,8±0,7 meq/l. Renal Laboratory: albumin 3,8±0,5 mg%; ferritine 481,1±533,7 mg/ml; calcium 8,5±0,9 mg%; phosphorous 5,5±1,5 mg%; Parathormone 263,9±417,9 Pc/ml. **Conclusions:** In this group of patients, the most frequent chronic renal failure etiology was diabetic nephropathy. Heart failure and left ventricular hypertrophy were parcially diagnosed. Anemia, diabetes, hypertension and dyslipidemia were the most prevalent cardiomyopathy risk factors found.

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LIPOPROTEIN(a) PLASMATIC LEVELS AND LIPIDIC PROFILE ON INDIVIDUALS OF THE AÑÚ TRIBE OF THE PAEZ MUNICIPALITY, ZULIA STATE, VENEZUELA

L. Acosta[1], A. Siciliano[1], V. Bermúdez[1], E. Mengual[1], D. Aparicio[1], R. Canelón[1], F. Finol[1], E. Rojas[1], J. Faría[1], L. Sorell[2]. *[1]Endocrine-Metabolic Research Center "Dr. Félix Gómez". Medicine School. University of Zulia. Maracaibo, Venezuela. [2]Genetic Engineering and Biotechnology Center of Habana, Cuba.*

Objectives: Cardiovascular diseases constitute the first cause of death in the western hemisphere. In these diseases physiopathology several studies point out Lipoprotein(a) [Lp(a)] as an independent risk factor, the concentrations of the Lp(a) vary according to the ethnic origin. In our Country, very few studies concerning the determinations of Lp(a) in demographic groups have been made. It is for this reason, that the objective of the present study is to determine Lp(a) plasmatic levels and Lipid profile in individuals of the Añú tribe of the Páez Municipality of the Zulia State, Venezuela. **Materials and Methods:** 120 healthy individuals of both sexes were studied, randomly selected, belonging to the Añú tribe, a clinical history was realized, measuring clinical and anthropometric variables, and lipid profile and Lp(a) levels were determined. **Results:** overweight was found, arterial pressure, blood glucose and abdominal circumference ratio ciphers were found to be normal (median of 89,6 cmts). When general plasmatic lipids were studied isolated low HDL-c were observed (median: 39,2 mg/dl) with a normal lipid profile. Lp(a) blood levels showed a median of 22,4 mg/dl, without significant differences when age and sex were compared, nor when cardiovascular disease family history was considered. **Conclusions:** The individuals of the Añú tribe present isolated low HDL-c, and Lp(a) were found to be in the levels considered as normal. Other studies are needed in the Añú tribe and other ethnic tribes of the Zulia state, with the objective of supporting these findings and comparing if differences exist in individuals of other ethnic origins in this state in relation to the blood levels of Lp(a). **Key words:** Lipoprotein (a), cardiovascular risk, risk factors.

P1190

ENALAPRIL BUT NOT HYDRALAZINE INCREASES ENDOCARDIAL TRANSIENT OUTWARD POTASSIUM CURRENT IN RAT CARDIOMIOCYTES

L. F. Rodrigues Jr[1], C.C. Lores[1], A.C.A. Carvalho[1], A.C.C. Carvalho[1], J.G. Mill[2], J.H.M. Nascimento[1]. *[1]INSTITUTO DE BIOFÍSICA CARLOS CHAGAS FILHO/ UFRJ [2]DEPARTAMENTO DE FISIOLOGIA/ UFES*

Introduction Cardiac ventricular hypertrophy leads to heart electrophysiological remodeling, and is associated to increased incidence of sudden death. Reduction of calcium-dependent transient outward potassium current (I_{to}) described in hypertensive animals, delays ventricular repolarization by increasing the cardiac action potential duration, causing complex ventricular arrhythmias. It had been shown, in human and in animal models, that Angiotensin Converting Enzyme inhibitors (ACEi) treatment can reduce arrhythmic events incidence and by consequence, sudden death occurrence. We had previously demonstrated the effects of antihypertensive treatment with an ACEi, Enalapril compared with an arterial vasodilatator, Hydralazine on amplitude of I_{to}, in Spontaneously Hypertensive Rats (SHR). In left ventricle (LV), chronic treatment with Enalapril, or Hydralazina, were able to recuperate I_{to} amplitude to normal levels. In right ventricle (RV), where there was no pressure overload in these animals, Hydralazine treatment did not altered normal I_{to} amplitude, however, chronic Enalapril treatment increased Ito amplitude over normal levels, suggesting a specific effect of this drug on I_{to}. In order to understand electrophysiological remodeling, caused by chronic Enalapril treatment, our objective was to study the amplitude of I_{to} into Epicardial and Endocardial cardiomyocytes from the left ventricular wall. **Methods** Two groups of Spontaneously Hypertensive Rats were utilized in the study: 1) SHRE (treated with 10mg/Kg/day Enalapril), 2) SHRH (treated with 20mg/Kg/day Hydralazine). After six weeks of treatment using intraesophagic injection, animals were sacrificed and hearts were excised for enzymatic digestion with collagenase. Obtained cells from epi and endocardio were, then, used for Ito evaluation by Whole-Cell Patch Clamp technique. The pulse protocol used for voltage-current relationship curve construction was composed by 300 ms depolarizing steps elicited from the holding potential of −60 mV to potential from -50 until +60 mV, at 10 mV intervals. I_{to} amplitude was normalized by cell capacitance and expressed as mean ± S.E.M. Groups were compared using ANOVA with Newmann-Keuls post-test, significance was estimated as $P<0.05$. **Results** I_{to} amplitude, in epicardial cells isolated from Enalapril treated animals, was 16.8±2.0 pA/pF. There was no statistical difference in comparison to endocardial cells from the same drug treatment, 17.5±1.5 pA/pF. In epicardial cells, isolated from Hydralazine treated animals, I_{to} amplitude was 17.9±1.7 pA/pF, comparatively the same amplitude as found in Enalapril treated group. In endocardial cells from Hydralazine treated group, I_{to} amplitude was 9.5±1.1 pA/pF, statistically lower than it's amplitude in epicardial cells from the same drug treatment group ($p<0.05$), and from the Enalapril treated epicardial and endocardial cells ($P<0,01$). **Conclusion** The amplitude of transient outward potassium current, measured in cardiomiocytes isolated from left ventricle of SHR's chronicaly treatment with Enalapril, is the same at epi and endocardio. However, in SHR's chronically treated with hydralazina, I_{to} amplitude was lower in endocardial cells compared with it's amplitude in epicardial cells.

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Incidence of depressive symptoms on the left ventricular function parameters

J. Tripolone[1], GA Santiago[2], JM Tripolone[3]. *[1]INSTITUTO MEDICO SAN JUAN [2]INSTITUTO MEDICO SAN JUAN [3]INSTITUTO MEDICO SAN JUAN*

The depressive symptoms are prevalent in patients with cardiovascular disease and subdiagnosed. The depressive symptoms are found in 40−65% of patients, following the acute myocardial infarction and higher depression is found in 15–25% of the patients. This is not only important in the incidence of diseases but also in the exacerbation of them because they let the prognosis gets worse, produce a poor social adaptation and a poor quality of life. This relationship is even with mild depressive symptoms. The BDI is a useful tool that allows not only identifying the patient with depressive symptoms −even when they are sub-clinical- that produces cardiovascular events, but also the intensity of them. This is a questionnaire with 21 items easy to implement by the medical or paramedical staff. It has a sensitivity of 80–90% and a specificity of 70−85% to identify depressive symptoms. **Materials and methods:** We took 80 patients with cardiovascular risk factors and they were stratified according BDI: <5, 5–10, 10−20,> 20 (> is worse). We assessed the following parameters of left ventricular function: 1- FS (FRACTIONAL SHORTENING) 2- EF (EYECTION FRACTION) 3- VEAM (displacement of mitral ring in the first third of SYSTOLE/ time, normal values> 9cm/s) 4- IP (performance index) = VEAM x ESPAM / DFS, normal values> 50mm/s, where DFS means end systollC diameter AND ESPAM (MITRAL ANNULAR EXCURSION) 5- aortic stiffness (<2) (VEAM and IP parameters were described by our group); 6- EPR (relative WALL thickness) 7- MASS INDEX: indexed myocardial mass 8- TEI. Statistical analysis: Kruskal-Wallis test with significant differences at $p<0.05$. **Results:** BDI <5: 24%, 50–10: 24%, 10–20: 38 %,> 20: 15%. BDI had no statistical relationship between FS, EF, stiffness and EPR. BDI got a $p<0.05$ in VEAM, IP, Mass, TEI. These patients suffered progressive deterioration with the increase in depressive symptoms.

	BDI <5	BDI >20
VEAM	8.34	7
Mass	120	220
TEI	0.44	0.67
IP	49	32

Conclusions:

1- There is a continuous and progressive relationship between depressive symptoms and deterioration of left ventricular function.
2- VEAM, IP, Mass and TEI would be early markers of the impact of depressive symptoms on the left ventricular function, which would not be detected by the conventional parameters (FS, EF).
3- We suggest evaluating BDI routinely throughout the office since 76% of the patients had a value greater than 5.
4- We suggest the use of VEAM, IP, TEI and mass routinely throughout echocardiography laboratory to detect early impact of depressive symptoms.

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WHICH IS THE LATE EVOLUTION OF SYMPTOMATIC PATIENTS WITH OBSTRUCTIVE HYPERTROPHIC CARDIOMYOPATHY SUBMITTED TO ALCOHOL SEPTAL ABLATION?

MANUEL Nicolas Cano[1], SILVIA Judith Fortunato De Cano[2], ADRIANA C Moreira[3], RICARDO Pavanello[4], JAIRO Alves Pinheiro Jr[5], AMANDA Gmr Sousa[6], JOSE Eduardo Mr Sousa[7], ADIB Domingos Jatene[8]. *[1]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [2]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [3]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [4]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [5]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [6]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [7]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [8]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil*

Introduction: During decades, symptomatic Hypertrophic Obstructive Cardiomyopathy (CMHO), had as unique therapeutic option, beside clinical treatment, the Maron surgery of myotomy/myomectomy. However, since 1995, percutaneous Alcoholic Septal Ablation (ASA) had become a new alternative. **Objectives:** Evaluate late response of 38 consecutive patients with CMHO, in functional class III-IV (NYHA), who underwent ASA, analyzing the Electrocardiographic, Hemodynamic and Ecodopplercardiographic changes, clinical functional class according to NYHA and mortality in a long term follow up. **Material and Methods:** From October 1998 to October 2007, 38 consecutive patients were treated with ASA, 22(57%) men, mean age 53,73±15,42 years (08–76), most of them (35p 92%) had refractory heart failure, 3p(8%) syncope and 1p Complete Atrioventricular Block(AV-block). Three patients (8%) had permanent pacemakers implanted as treatment before ASA, one being an ICD. All patients were evaluated clinically, Electrocardiographic, Ecocardiographic pre-treatment, immediately after and yearly thereafter in a flollow-up of period of 6 to 108 months. **Results:** There was immediate success in 36(94,7%) patients, with a significant decrease in homodynamic gradient of left ventricle outflow track (LVOT) from 98,69±34 mmHg to 15±23 mmHg p<0,001, improvement of FC(NYHA) from III (13p) and IV(25p) to I (27p), II(10p). Five patients developed transient AV block and 1 (2,7%) complete and permanent AV block requiring permanent pacing; 1p received an ICD for primary prevention; CRBBB was seen in 27 (71%) and in 2 was associated to left anterior fascicular block, in 1 with left posterior fascicular block, a new LBBB appeared in 1p. There was 1 (2,7%) hospital death, 2 recurrences of symptoms and after two years Atrial Fibrillation developed in two patients. Echocardiographic results are seen in the table bellow. **Conclusion:** Alcohol Septal Ablation in severely symptomatic patients with HOCM, was efficient, immediately and in late follow up, in reducing intraventricular gradients. Those patients treated successfully, had few complications, low mortality rates, improvement of clinical functional class, decrease of gradient in LVOT traduced in expressively better quality of life for these severely affected patients. Survival curves was estimated by the Kaplan-Meier method in 81,15 months (I.C.(95%)= [90,7; 105,1]; and the average life expectancy was of 95%.

VARIBLES	PRE-ASA	PÓST-ASA	LATE FOLLOW-UP	P - VALUES
LVed(mm)	45,97±5,94	45,85±5,62	47,44±5,85	NS
LVes(mm)	27,57±4,50	28,55±4,87	28,67±4,59	NS
LA(mm)	44,73±8,01	42,03±8,85	42,33±8,73	NS
EF(%)	70,51±7,99	69,35±8,61	70,33±6,10	NS
GRAD(mmHg)	94,05±38,81	33,68±27,50	17,41±11,41	<0,001
SEPTUM(mm)	23,08±4,63	17,88±5,03	15,52±5,22	<0,001
PW(mm)	14,35±2,74	12,35±2,27	11,70±2,27	<0,001
MASS (g)	467,14±119,87	327,15±99,08	267,92±96,56	<0,001

P1194

Evaluation of anthropometric measures, clinical, nutritional and physical activity level in subject with different levels of cardiovascular risk

A. P. Q. Mello[1], I.T. Silva[1], C.A. Sanibal[1], A.S. Timm[1], R.D.S. Filho[2], R.C. Maranhao[2], N.R.T. Damasceno[1]. *[1]School of Public Health University of Sao Paulo [2]Heart Institute - Sao Paulo Medical School*

Obesity develops when energy intake exceeds energy expenditure, causing a fundamental chronic energy imbalance, and represents a chronic and inflammatory disease. Abdominal obesity is often accompanied by a number of complications including cardiovascular diseases, particularly, in atherosclerosis. Atherosclerosis represents a complex process, where endogenous and environment factors are very important. In this context, blood pressure, plasmatic lipids and high intake foods industrialized (high lipids and sodium, and low fibers, vitamins and minerals) are focus of many investigations. The purposes of the present study were to investigate clinical and nutritional factors associated with body mass index (BMI), waist circumference (WC) and lipid profile in individuals with different levels of cardiovascular risk. Seventy three subjects were selected from InCor and Hospital Universitario-USP (Sao Paulo – Brazil). Anthropometric measurements, blood pressure arterial, lipid profile (Friedewald equation), food intake (calibrate food frequency questionnaire) and habitual physical activity (Beacke's questionnaire) were collected. Statistical analysis was performed by SPSS Program. The WC (p< 0.001), arterial systolic blood pressure (SBP) (p< 0.01), arterial diastolic blood pressure (DBP) (p< 0.001), sodium (p= 0.01) and cholesterol intake (p= 0.01) were significantly reduced at the first tertile in comparison of the last tertile for BMI. Inverse profile was observed on TC/(TC + TG) ratio (p= 0.03) for BMI. The first tertile of WC had less BMI (p< 0.001), SBP (p< 0.001), DBP (p< 0.001), sodium (p< 0.01), cholesterol intake (p= 0.02) and greater physical activity during leisure time excluding sport (p= 0.03) than last tertile. In addition, subjects in the first tertile of triglicerides concentration (TG) had less BMI (p= 0.02), WC (p< 0.01), DBP (p< 0.01), low density lipoprotein concentration (p< 0.01) and Framingham risk score (p< 0.01). However high density lipoprotein concentration (p= 0.01) showed greater in first tertile than last tertile of TG. This study supports the evidence that body mass index, waist circumference and triglicerides concentration showed positive association with risk factors for coronary heart disease.

P1195

Does the type of stent influence in-hospital outcome in acute coronary syndrome patients?

S. Costa[1], S. Monteiro[1], N. Antonio[1], C. Negrier[1], R. Teixeira[1], F. Goncalves[1], P. Monteiro[1], L. Goncalves[1], M. Freitas[1], L. A. Providencia[1]. *[1]Coimbra University Hospital*

Introduction: The advent of drug-eluting stents (DES) has dramatically decreased restenosis related to percutaneous coronary intervention (PCI). Recently, however, concern has arisen about the occurrence of late stent thrombosis after DES implantation. What about the in-hospital period in ACS patients? Are there any significant differences in outcome between DES and bare metal stents (BMS)? **Aim:** To compare the use of DES or BMS in patients that underwent PCI for ACS, regarding in-hospital mortality and morbidity. Population and **Methods:** Retrospective analysis of a database containing 538 consecutive patients admitted to a single coronary care unit for ACS and submitted to PCI, between May 2004 and July 2007. Population was divided in two groups: A – patients in whom a BMS was implanted (n=140) and B – patients treated with DES (n=398). **Results:** Group B patients were younger and had more previous treatment with beta-blockers, anti-platelet agents and percutaneous coronary intervention. They had lower necrosis and inflammation biomarkers, higher creatinine clearance and hemoglobin levels. DES were more implanted in PCI of left anterior descending and left circumflex. There were no significant differences regarding age, risk profile (hypertension, dyslipidemia and smoking), reperfusion strategies, as well as in-hospital mortality (2.1% vs 2.8%; p=ns), morbidity (3.6% vs 4.8%; p=ns) and re-hospitalization (9.1 vs 6.9; p=ns). Length of stay (5.5±3.1 vs 5.1±3.4; p=0.037) was, however, significantly longer in the BMS group. **Conclusion:** In ACS patients, the type of stent used during PCI has a minor impact on the in-hospital outcome, with DES being only associated with a small decrease in length of stay. Until more conclusive data regarding long-term outcome of ACS patients treated with DES becomes available, emphasis should be put on selecting the best strategy for each patient, based on its clinical profile and careful weighting of risks and benefits of any given strategy.

	Age	Prior PTCA	Trop. I	PCR	Hemoglobin	Creat. clearance	LAD	LCX
	years	%	mg/dl	mg/dl	g/dl	ml/min	%	%
A	67.0	8.0	61.0	8.0	11.8	69.9	33.3	15.9
B	62.8	17.1	49.0	6.0	12.3	78.5	62.0	24.1
p	<0.001	0.009	0.001	0.001	0.013	0.004	<0.001	0.048

P1196

WHICH IS THE BEST STRATEGY TO TREAT CONCOMITANT CAROTID AND CORONARY ARTERY DISEASE?

MANUEL Nicolas Cano[1], ANDRÉS Sanchez Esteva[2], ANTONIO M. Kambara[3], FAUSTO Feres[4], ALEXANDRE Abizaid[5], SAMUEL M. Martins[6], LEOPOLDO Soares Piegas[7], AMANDA Guerra Mr Sousa[8], JOSE Eduardo Mr Sousa[9], ADIB Domingos Jatene[10]. *[1]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [2]Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [3]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [4]Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [5]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [6]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [7]Heart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [8]eart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [9]eart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil [10]eart Hospital / Dante Pazzanese Institute of Cardiology – São Paulo – Brazil*

Background: The management of patients with combined carotid and coronary artery disease is controversial. The combined carotid-coronary surgery has a worse prognostic when compared to staged approach. Nevertheless, the role of endoluminal procedures in this high risk group of patients has not been completely elucidated. **Objectives:** Evaluate safety and efficacy of combined carotid and coronary versus staged percutaneous treatment strategies. **Methods:** From September 2002 to January 2007, 32 consecutive percutaneous carotid-coronary procedures were done, being 15 combined and 17 staged. Clinical follow-up began immediately, and continue in 30 days, 6 months and one year after procedure. **Results:** Half of the patients were diabetic, with a mean age 65±9 years, The treated vessels were 12(37%)anterior descending artery; 5 (16%) circumflex artery; 8 (25%) right coronary artery and protected main left 2(6%); left internal carotid artery 20(62.5%) and right carotid artery 12(37,5%). Stents Precise and Angioguard filters were used for carotid in 31 patients (1 stent/filter per patient) and in 1p a proximal occlusion device (Mo.Ma Invatec.Roncadelle Italy)was used; Coronary artery disease was treated with drug eluting stents in 27p(63%.). An immediate success was obtained in all the patients. The table bellow shows 30 days and one year follow-up events:

Events	Follow-up	Combined	Staged	p
Cardiac death	30-days	0	0	0,99
	1 year	0	0	0,99
AMI	30-days	1	0	0,99
	1 year	0	0	0,99
TIA	30-days	0	0	0,99
	1 year	0	0	0,99
ISCHEMIC STROKE	30-days	1	0	0,99
	1 year	0	0	0,99

Conclusion: In this group of high risk patients, both percutaneous intervention strategies were safe and effective to treat concomitant carotid and coronary artery disease, with low rate of complications and morbi-mortality rates after a year of follow-up. Thus it could be an alternative to carotid-coronary surgery.

P1197

Noninvasive method for assessment of endothelial function based on reflection index obtained with post-occlusive reactive hyperemia

A.S.F. Ferreira, Arthur De Sá[1], J.B.F. Barbosa Filho, José[2], I.C. Cordovil, Ivan[2], M.N.S. Souza, Marcio Nogueira[3]. *[1]Centro Universitário Augusto Motta [2]Instituto Nacional de Cardiologia [3]Universidade Federal do Rio de Janeiro*

Introduction: Pulse wave analysis obtained from central or peripheral arteries has been used to evaluate the regulatory mechanisms involved in microcirculation responses to vasoactive substances. The aim of this work is to compare the reflection index (RI) obtained at the radial artery during post-occlusive reactive hyperemia (PORH). **Subjects:** Fifty-two hypertensive subjects (experimental group [EG], 27 males. age 40.9±9.1 years, systolic pressure 170.9±27.0 mmHg, diastolic pressure 103.9±18.6 mmHg, body mass index 24.9±2.5 kg/m^2, heart rate 72.7±14.2 b/min) and 63 normotensive subjects (control group [CG], 30 males, age 29.3±8.6 years, systolic pressure 118.9±9.8 mmHg, diastolic pressure 71.8±8.3 mmHg, body mass index 22.6±2.5 kg/m^2, heart rate 68.1±11.1 b/min) were selected for this study. **Methods:** The protocol was approved by the Ethics Committee before study execution. Pulse waveforms were acquired from radial artery using piezoelectric transducers connected to pre-amplifier and software validated in previous studies. Pressure pulse was monitored at the computer screen for 10 minutes for hemodynamic stabilization and saved after this period for assessment of rest values. PORH was performed at the forearm applying cuff pressures 20 mmHg higher than systolic pressure over 5 minutes, while pressure signal was visually monitored to ensure no blood flow occurred. After cuff release, pressure signal was acquired for 65 seconds, and pulse beats were automatically segmented for analysis. RI was obtained as the ratio of the peak of first reflected wave over the systolic peak for: rest condition, first (t≈0s), and last (t≈60s) pulse beats of PORH signal. Statistical analysis was performed with SPSS 10.0 and results were considered significant at level 0.05. Kolmogorov-Smirnov test was used to check for difference of variables between groups. Spearman's correlation coefficient was used to test correlation between clinical variables and RI. **Results:** RI obtained during rest was significantly higher ($p<0.01$) for the hypertensive subjects (104.2±34.1 %) than normotensive group (65.8±20.2 %). Values of RI obtained immediately after cuff release (t≈0s) showed significantly higher values than rest for CG (98.2±27.8 %; $p<0.01$) and EG (146.1±47.3 %; $p<0.01$). Values of RI after 60s for GC (77.3±18.4 %) were still significantly higher ($p<0.01$) than rest values for CG, but not for EG (108.4±28.7 %; $p>0.05$). RI was positive correlated to age (CG=0.54; EG=0.35; $p<0.01$), systolic (EG=0.38; $p<0.01$) and diastolic pressures (EG=0.30; $p<0.05$). **Discussion:** Higher values of RI among hypertensive subjects denote increased arteriolar tonus/rarefaction, with respective increase in peripheral resistance. The CG did not restore rest values after 60s of cuff release, suggesting that vasodilator effect was still acting. However, RI values of EG at t≈60s was not different from rest conditions, indicating a preponderance of vasoconstrictor agents. **Conclusion:** RI can be used to noninvasively evaluate endothelial function through the comparison between rest-initial-final pulse waves.

P1198

Atrial Fibrillation Analysis on the Absence of Cardiac Illness through the Stroke Volume and Echocardiogram

J. Morais[1], T. Diogenes, J. Paes Jr. *[1]PRONTOCARDIO AND CLINICARDIO [2]PRONTOCARDIO AND CLINICARDIO [3]PRONTOCARDIO AND CLINICARDIO*

Introduction The existence of fibrillation analysis on the absence of cardiac illness is recognized since 1900. However, due to the relative low frequency the fibrillation analysis on the absence of cardiac illness is not well studied in relation to its etiology, natural history and prognostic. The stroke volume is defined as the quantity of blood ejected on each cardiac beat. The objective of this research was to evaluate the systolic function on patients with atrial fibrillation and without cardiac illness through the stroke volume. **Methodology and Material** It was realized echocardiograms on sixty (60) patients. Those patients were divided into three groups defined as follows: Group A, is the group of normal patients, group B is the group of patients with cardiac failure and group C is the group of patients with atrial fibrillation. **Results** The results are shown in the table bellow.

Stroke	Group A	Group B	Group C
minimum	65	18	40
medium	76	23	37
maximum	110	42	53
total	251	83	123
averages	83,68	27,67	41,00
Standard deviation	23,459	12,662	10,583

Conclusion

The present study confirms:

1) the importance of the atrial function on the cardiac performance;
2) that the reversion of the sinuses rhythm must always be tried;
3) that the lowering of the cardiac frequency improves the stroke volume even on patients that keeps the atrial fibrillation.

P1199

MAIN PULMONARY ARTERY PRESSURE WAVEFORM ANALYSIS: a time-domain approach for complete hemodynamic evaluation during pulmonary hypertension.

J. Grignola[1], L. Devera[2], F. Ginés[2]. *[1]Depto Fisiopatología, Hospital de Clínicas, Facultad de Medicina, Universidad de la República [2]Depto Fisiología, Facultad de Medicina, Universidad de la República*

Clinical signs of right ventricular (RV) failure are often not clearly related to the progression of pulmonary hypertension (PH), as assessed by pulmonary vascular resistance. The main pulmonary arterial pressure waveform (PAPW) qualitative morphology analysis may be of diagnostic and prognostic value in patients with PH. The aims of the study were to characterize the hydraulic RV afterload by PAPW analysis and to examine its changes during passive (PPH) and active PH (APH). High fidelity PA flow and pressure were recorded in six anesthetized sheep. Acute PH was induced by phenylephrine (APH) and PA mechanical constriction (PPH). We estimated the amplitude of the forward (Pi-Pd) and reflected (Ps-Pi) pressure waves depending on the inflection point (Pi), the augmentation index (AI) and the wasted energy generated by the RV due to wave reflection during ejection (E_W=[(Ts-Ti)(Ps-Pi)pi/2]). The timing of wave reflection was quantified by the inflection time (Ti). We also calculated the input resistance (Z_O) and the characteristic impedance (Z_C, Li method). During PH states, heart rate and pulmonary flow did not change with respect to control. PAPW analysis allows to quantify the dynamic RV afterload as well as to discriminate the local main PA stiffness, and the extent ant timing of wave reflection during PH states. Under steady isobaric condition, RV pulsatile load (AI) is attenuated during APH by maintaining PA stiffness (Pi-Pd, Z_C) and reducing the extent of reflected wave (Ps-Pi, E_W). In clinical settings, PAPW analysis might help in evaluating the acute vasodilator testing and the severity of different forms of PH.

	Control	PPH	APH
Pm, mmHg	14.8 ± 1.8	21.9 ± 2.7[a]	21.2 ± 2.9[a]
Pp, mmHg	7.5 ± 2.4	17.8 ± 4.7[a]	11.8 ± 3.5[b]
Z_O, dyn s/cm^5	621 ± 49	961 ± 190[a]	917 ± 180[a]
Z_C, dyn s/cm^5	82 ± 20	167 ± 60[a]	98 ± 21[b]
Pi-Pd, mmHg	5.9 ± 1.8	9.1 ± 1.9[a]	7.4 ± 2.0
Ps-Pi, mmHg	1.8 ± 0.5	8.7 ± 3.0[a]	4.3 ± 1.7[b]
AI, (Ps-Pi)/Pp	0.25 ± 0.03	0.48 ± 0.06[a]	0.37 ± 0.08[a,b]
(Ps-Pi)/(Pi-Pd)	0.31 ± 0.08	0.95 ± 0.24[a]	0.60 ± 0.21[a,b]
Ti, ms	104 ± 21	50 ± 13[a]	70 ± 17[a]
E_W, mmHg s	0.6 ± 0.2	3.0 ± 1.1[a]	1.6 ± 0.8[b]

Ps, Pd, Pm, and Pp: systolic, diastolic, mean and pulse PA pressure, respectively. Mean ± S.D. n=6. [a]: $P<0.05$ vs control and [b]: $P<0.05$ vs PPH, ANOVA

P1200

THE EFFECTS OF THE BREATH CONTROLLED INCURSION ON THE BLOOD PRESSURE SYSTEM IN SUBJECTS WITH RESISTENT HIPERTENSIVE TO THE TREATMENT: IMPACT OF AUTONOMIC MODULATION ON RENIN-ANGIOTENSIN-ALDOSTERONE SYSTEM

C. S. Miranda[1], P.R. Benchimol-Barbosa[1], G.N. Gobbi[1], J. Barbosa-Filho[1], M.V. Barros[2], A.B.R. Lima[2], F. Vilela[2], F.V. Campos[1], I. Cordovil[2]. *[1]Gama Filho University [2]National CardiologyInstitution - Health Minister*

Theme: The controlled breath maneuver (CB) is a respiratory maneuver under the command of an outside examiner at fixed rate, which modulates heart rate through a parasympathetic effect. CB may to abate blood pressure in subjects with systemic arterial hypertension (SAH) by attenuating the sympathetic activity due to secondary vagal overdrive. However, in SAH refractory to drug therapy (inappropriate blood pressure control with three or more drugs including a diuretic) the effect of CB on blood pressure control is yet unknown. **Objective:** Explore the effect of the CB on blood pressure in subjects with SAH refractory to drug treatment. **Methods:** Prospective and observacional study. Forty subjects with SAH refractory to drug treatment were enrolled after ethically approved written informed consent. SAH refractory to drug treatment diagnostic was confirmed by 24h-ambulatory blood pressure monitoring after three weeks of supervised drug treatment follow-up by pharmaceutical staff. On admission, anthropometric and demographic information were obtained. After ten minutes of supine rest in a quiet and pleasant environment, with temperature of 25°C, CB was carried out at six respiratory incursions per minute, during four minutes. Arterial blood pressure was assessed five minutes (Basal 1st) before, during (CB) and after (basal 2nd) controlled breathing maneuver in supine rest, by using oscilometric method. The following polymorphism genotyping of renin angiotensin aldosterone system were assessed: renin (REN G1051A), angiotensinogen (AGT) M235T, insertion/deletion of angiotensin-converting enzyme (ACE I/D), angiotensin II type 1 receptor (AGTR1) A1166C and aldosterone synthase (CYP11B2) C344T. Polymorphisms analyses were performed using polymerase chain reaction, with further restriction analysis when required. The influence of genetic polymorphisms and clinical risk factors on blood pressure variation was assessed. Comparison of the arterial blood pressure, both systolic and diastolic, was carried out by Kruskall-Walis ANOVA test. Alpha error level was set to 0.05. **Results:** Systolic blood pressure, diastolic blood pressure and heart rate did not significantly varied from Basal 1st to CB and to Basal 2nd stages (Table1, p=NS for all). Distribution of RAAS polymorphisms was the following: i) ANGIO: TT-46%, MT-29%, MM-25%; ii) ECA:II: 26%, ID-42%, DD-32%, iii) AS: CC-10%, CT-43%, TT-47%. No significant influence of analyzed RAAS genetic polymorphisms of blood pressure response to CB breathing was found. **Conclusion:** The CB supports nonsignificant effect on arterial blood pressure levels in subjects with SAH refractory to drug treatment, regardless RAAS polymorphism.

TABLE 1

	VARIABLE	FB	CB	SB	p
SBP	15.7	167.3	165.9	168.6	0.791
DBP	19.4	107.0	106.3	106.8	0.989
BPM	22.6	123.5	122.4	124.4	0.936
HR	11.7	68.6	66.5	67.2	0.752

P1201

The Volumetric Index of the Left Atrium is more Precise than the Limiar Measure by the Echocardiogram

J. Morais[1], T. Diogenes, J. Paes Jr. *[1]PRONTOCARDIO AND CLINICARDIO [2]PRONTOCARDIO AND CLINICARDIO [3]PRONTOCARDIO AND CLINICARDIO*

Introduction The volumetric index reflects better the elliptical anatomy of the left atrium than the limiar measure. The left atrium tends to enlarge its volume and not always the dimensions

with the advance of age. The objective of this research is to show the real meaning of the volumetric volume of the left atria and compare it to the limiar measure. **Methodology and Material** It was considered for this research a prospective observational study which included one hundred and forty (140) patients. Eighty (80) patients included were female which represented 59% of the sample considered. The minimum age included was seventeen (17) years old and the maximum was ninety (90) years old. The average age registered was 66 years old. Of the total studied 50 were normal, 40 had systemic arterial hypertension, 38 had systemic arterial hypertension and diabetes mellitus and 12 had cardiac failure. The limiar measure considered normal went up to 38 millimeters and the volumetric index was 22+-6 ml/m2 (according to Mayo Clinic). **Results** The average of each group was: Normal: less than 45 years old, 21 ml/m2; from 45 to 60 years old, 22 ml/m2; more than 65 years old, 24ml/m2. Systemic Arterial Hypertension: 26.5 ml/m2; Mellitus Diabetes: 23.5ml/m2; and Systemic Arterial Hypertension together with Mellitus Diabetes: 27.5ml/m2 Of each 12 patients 3 showed enlargement of the limiar measure. The rest of them had the average volumetric index of 34ml/m2. **Conclusion** While on patients considered normal there is no statistic significance between one index and the other. The same does not occur with patients with pathologies. The volumetric index is much more sensible than the limiar measure when the pathology may promote functional alterations of the left atrium.

P1202

Correlation between the average speed of mitral ring excursion by M-mode and the conventional DP / DT of the mitral regurgitant flow valued by Doppler Echo

J. Tripolone[1], GA Santiago[2], JM Tripolone. [1]*INSTITUTO MEDICO SAN JUAN* [2]*INSTITUTO MEDICO SAN JUAN* [3]*INSTITUTO MEDICO SAN JUAN*

The DP / DT Mitral Regurgitant Flow is an accepted parameter to assess left ventricular function and with a great sensitivity to changes in contractility. It has been proven a correlation between DP / DT peak valued in an invasively way and DP / DT estimated by Mitral Regurgitant Jet Doppler Echo with a correlation of r = 0.87. However, the use of this method is limited to the presence of Mitral regurgitation Jet analyzable by Eco Doppler. Our research group studied the Mitral Ring Speed DURING SYSTOLE using the conventional M-Mode echo (VEAM) as a parameter for assessing the Left Ventricular Function. The purpose of this study was to assess the correlation between the DP / DT by Doppler Echo and the valued VEAM by conventional M-Mode echo. **Purpose of this research:** To correlate VEAM at the mitral ring with the DP / DT of the regurgitant mitral jet. Following this goal, we studied a group of 24 patients with normal and varied pathologies (valvular, and non-ischemic myocardial infarction, ischemic dilated cardiomyopathy and not ischemic DILATED CARDIOMYOPATHY, etc.) and with a Normal Ventricular Function (FS (FRACTIONAL SHORTENING) > = 28% and depressed (FS <28%). 1- DP/DT: For the calculation of the DP / DT we required to have a clearly defined Doppler spectrum of the Mitral Regurgitant jet. We calculated it between the 1 and 3 m / s speed according to previously published criteria, considered normal value> = 1200mmHg / s. 2- VEAM (speed of mitral ring movement in the first third of SYSTOLE) According to previous studies we considered normal values of VEAM 9cm/seg or >,. 3- ESPAM (maximum displacement of the ring during SYSTOLE) THE STUDY WAS M-mode echocardiography two-dimensional in an ATL HDI 3000 machine. **Statistical Analysis:** We performed a simple linear regression analysis between the variables and VEAM and DP / DT calculating the correlation coefficient between them. We performed an analysis of variance to analyze the significance of the regression. P values <0.05 were considered statistically significant. **Results:** The results of the study demonstrated the linear relationship between VEAM and the DP / DT with a confidence of 99% indicating a strong linear relationship (r = 0.8). The exponential regression model to scale amplification corroborated the confidence of 99% (r = 0.88) **Conclusions:** 1- VEAM is a useful parameter of left ventricular systolic function because it is sensitive, specific and easy to implement without ECO-Doppler equipment. 2- VEAM allows performing a fast and reliable IDENTIFICATION of patients with depressed DP / DT WITHOUT A MITRAL REGURGITATION JET. 3- VEAM might correspond to an independent contractility index that should be investigated in further studies. 4- We recommend the implementation of VEAM as a routine parameter in the assessment of left ventricular systolic function.

P1203

Role of the cardiovascular magnetic resonance in patients with ventricular arrhythmia of unknown cause

D. Perez De Arenaza[1], G Maid[1], M Falconi[1], M Pietrani[1], P Pollono[1], F Abramzon[1], R Perez-Etchepare[1], R Garcia Monaco[1], A Cagide[1], G Elizalde[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction: Ventricular arrhythmia can be related with structural cardiomyopathy. Cardiovascular magnetic resonance (CMR) can accurately assess ventricular function of both ventricles, perform tissue characterization and evaluate the presence of fibrosis or necrosis by late enhancement with gadolinium. It is not well known the additive diagnosis value of CMR in patients with ventricular arrhythmia and absence of cardiomyopathy by Doppler echocardiography. The aim of this study was to assess if CMR can identify structural cardiomyopathy in patients with ventricular arrhythmia and normal Doppler echocardiogram. **Methods:** Patients were included in this analysis if they had 1) frequent premature ventricular complexes defined as >1000 premature ventricular beats in a 24 hours Holter recording, 2) life threatening ventricular arrhythmia such as sustained ventricular tachycardia, ventricular fibrillation or resuscitated sudden death and 3) normal systolic ventricular function and absence of significant valve disease by Doppler echocardiogram. CMR scans were performed in 1.5 Tesla scanners (Vision or Avanto, Siemens). Morphology was assessed by T1, T2 and Haste sequences, biventricular systolic function and volumes by cines sequences, and late enhancement gadolinium by inversion recovery sequences. **Results:** We enrolled 16 consecutives patients with premature ventricular complexes (n=13) or sustained ventricular tachycardia (n=3) and normal Doppler echocardiogram that were referred for a CMR scan. Of them, 56% (n=9) had a ventricular abnormality on the CMR scans. Two patients had myocarditis, 2 patients had enlarge right ventricular volumes that one of them had right systolic dysfunction; 2 patients had enlarge left ventricles volumes; one patient had unknown myocardial infarction detected by subendocardial late enhancement; one patient had chagasic cardiomyopathy; and another patient had non-compaction cardiomyopathy. **Conclusions:** More than half of the patients with ventricular arrhythmia and normal Doppler echocardiograms had an abnormal finding on the CMR scan that was not detected on the initial evaluation. CMR may be a useful technique to rule out structural cardiomyopathy in patients with significant ventricular arrhythmia.

P1204

Native Infective Endocarditis in 111 children: Changing Patterns

MV Lafuente[1], C Villalba[1], G Rossi[1], E Lataza[1], H Capelli[1]. [1]*CHILDREN S HOSPITAL " [2]JP GARRAHAN"*

Objective: To determinate predictors of morbidity and mortality in children with native infective endocarditis **Methods:** Between 1988–2007, 111 consecutive patients (pts) aged 15 days to 226 months (m); X: 91 m, with definite infective endocarditis (IE) according to the Duke definitive criteria were evaluated. The most frequent lesions found were: Ventricular septal defect (VSD): 21; Aortic valve disease: 20; Tetralogy of Fallot: 6. No previous congenital or acquired heart defects could be detected in 47 pts. Positive blood cultures were documented in 95 pts (85,6%). The most common microorganisms were: Staphylococcus aureus: 43; Streptococcus viridans: 23; Candida albicans: 8; Streptococcus pneumoniae: 8; another ones: 13. Vegetations were visualized on the echocardiography assessment in 104 pts (94%). Two different groups of pts were identified: Group I, younger than 1 year (21 pts) and Group II, older than 1 year (90 pts). **Results:** The most frequent microorganism found in both groups was the Staphylococcus aureus. In Group I, pts younger than 1 year, the candida albicans p 0.0000003 and the enterococcus p0.03 were also prevalent meanwhile in Group II, pts older than 1 year, it was the streptococcus viridans p 0.006. The localization of the vegetations were predominantly in the right heart side in Group I and in the left heart side in Group II p 0.0000001 Adverse events were diagnosed in 78 pts (70%). Uncontrolled infection despite antibiotic treatment was more frequent in Group I p 0.001 and it was mainly related to candida albicans p 0.001. Progressive heart failure p 0.03 and systemic embolization p 0.008 were predominant in Group II The overall mortality was 9 % (10 pts). It was greater in the younger group 19 % (4pts) than in the older 6 % (6 pts) p 0.07. Death was associated to the presence of staphylococcus aureus p 0.02 and a structurally normal heart p 0.01. **Conclusions:** ● Predictors of mortality in native infective endocarditis were the presence of a staphylococcus aureus and a structurally normal heart. ● Morbidity in pts younger than 1 year was related to uncontrolled infection and to the presence of candida albicans while in patients older than 1 year it was associated to progressive heart failure, systemic embolizations and vegetations located in the left heart side

P1205

Analysis of DNA polymorphisms in the Endothelin-1 and Superoxide dismutase-Mn genes and their relationship with the evolution of the Chagasic Cardiomyopathy

O. Lassen[2], F. Quintiero[1], S. Tabares[1], J. Herrera[1], A. Garutti[3], G. Dotto[3], R. Sosa[2], R Galerano[2], A. Sembaj[1]. [1]*Biochemistry and Molecular Biology Department. School of Medicine, National University of Córdoba* [2]*Unit of Internal Medicine N°3. School of Medicine, National University of Córdoba, Córdoba Public Hospital* [3]*Central Laboratory of Biochemistry, Córdoba Public Hospital*

Approximately 30% of Trypanosoma cruzi (Tc) infected individuals develop chronic Chagas cardiomyopathy (CCC), an inflammatory cardiomyopathy whose symptoms appears decades after the primoinfection, a third part of these patients suffer fatal progression. Heterogeneity of the clinical expression of the symptoms of Chagas disease suggests that several genetic factors are involved in the pathogenesis. It is known that 90% of the human phenotypic diversity is generated by DNA single nucleotide polymorphism (SNP). There is an increasing interest in knowing whether genetic polymorphisms of genes encoding factors involved in the clinical manifestations, participate in the progression and/or severity of the disease. Several studies have reported genetic markers of susceptibility in the development of Chagas' cardiomyopathy. Based on these data, we propose to study the functional polymorphism Ala-9Val of the Superoxide dismutase Mn dependent (SOD-Mn) gene, and the polymorphism 138 /ex1ins/delA of the endothelin-1 (ET-1) gene using RFLP analysis of PCR DNA fragments amplified from genomic DNA extracted from circulating leukocytes of patients attending the Cordoba Hospital. All patients were investigated for Tc infection in serum and evaluated by ECG and EcoCG. Based on the clinical records they were classified in Group 1: 40 patients with chronic Chagas' cardiomyopathy; Group 2: 45 patients with cardiomyopathy without Chagas infection, and Group 3: 23 healthy individuals. The statistics analysis of the Ala-9Val polymorphism in SOD-Mn gene showed that healthy individuals are in population equilibrium, and an excess of heterozygotes in cardiac patients was observed. We found no difference in genotypes distribution and allelic frequency between chagasic and non chagasic patients, however the heterozygote genotype was more frequent in patient's ($p \leq 0.005$) and the allele encoding Alanine was significantly more frequent among the cardiologically less affected patients. Respect to the ET-1 gene, an adenine insertion (138 /ex1ins/delA) is a genetic variant associated with hypertension. The functional significance of this variant in the pathophysiology of CCC has not yet been elucidated. The genotype -4A/-4A of the ET-1 gene associated with hypertension, was identified in 4% of chagasic patients, 8% of cardiac non chagasic and 26% of healthy subjects. However a high frequency (39%) of the -4A allele was observed in chagasic patients. The genotype -3A/-3A was present in 25% of chagasic, 24.4% of non chagasic and 22.5% of controls. According to statistical analysis, an individual with allele 3A has less probability to develop a cardiovascular affection. Further studies are being developed to know whether or not an association of these two polymorphisms with the clinical status of the

patients exist. Our results would provide a new understanding of the pathophysiology of the disease and can lead to better identification of individuals at risk.

P1206

CONTROL OF RISK FACTORS TREATMENT THROUGH CAROTID INTIMA-MEDIA THICKNESS AND ENDOTHELIUM-DEPENDENT BRACHIAL ARTERY VASODILATATION FOR HIGH RISK PATIENTS.

C. Ingino[1], M. Kura[1], R. Machado[2], A. Cherro[1], E. Ricardo[2], P. Lylyk[1]. *[1]ENERI Medical Institute [2]Military Hospital*

Background and Objectives. Carotid intima-media thickness (IMT) and endothelium-dependent brachial artery vasodilatation (EDV) are markers of vascular disease with independent prognostic significance. We studied their incremental value in a high risk patient population with previous vascular events to assess their therapeutic efficacy. **Methods:** Ninety one patients (pt) underwent pre-treatment and at 18–24 months post-treatment assessment of: 1. Average IMT (IMTa) and maximum IMT (IMTmx) in pre-bulbar region of both common carotid arteries with semi-automatic software (M'AthStd TM); 2. EDV pre and 1 min post antebraquial 4.5 min ischemia. Pt were classified into: Group A (GA) with total control of risk factors (RF): weight loss, arterial blood pressure (BP) <140 / 90, LDL-col <100 md/dl, blood sugar< 100 mg/dl and physical activity of 3 or more times weekly; Group B (GB) with failure to control at least one RF. Differences between groups were assessed by means of the t statistic. **Results:**. No basal differences were detected between groups. Study group data: 67.6±7,2 years; male 78%; BMI 29,4 ±3.3 Kg/cm2; Sedentary: 90%; BP 150,4/83±6,5/5,8 mmHg; LDL-col 243 ±26,2 mg/dl; blood sugar 99,4 ±10,5 m/dl. Therapeutic failure in GB: no IMC reduction 86,9%; sedentarism 73,8%; high BP 88,5%; LDL-col >100mg/dl 57,4%; blood sugar > 100 mg/dl 50,8%. Differences between basal data and at 18–24 month follow-up between groups: GA, IMTa 0.02mm, IMTmx -0.01mm; EDV (%) 3.404. GB: IMTa 0.05mm, IMTmx 0.07mm, EDV (%) -0.281. P value between grups 0.005. IMTa and IMTmx changes during follow-up shows significative differences between GA and GB. **Conclusions.** The IMT assessment and the EDV are useful methods to know the efficacy of the prescribed therapeutics. These non-invasive studies deserve attention during high risk patients monitoring.

P1207

Evaluation of the Volumetric Index of the Left Atrium on Diabetics and Hypertensive Patients

J. Morais[1], **T. Diogenes** , J. Paes Jr. *[1]PRONTOCARDIO AND CLINICARDIO [2]PRONTOCARDIO AND CLINICARDIO [3]PRONTOCARDIO AND CLINICARDIO*

Evaluation of the Volumetric Index of the Left Atrium on Diabetics and Hypertensive Patients José Maria Bonfim de Morais, Tereza Cristina Pinheiro Diógenes e Jose Nogueira Paes Junior **Introduction** The left atrium is to the diastolic function as the left ventricular is to the systolic. On patients with diabetes and or hypertension the alteration of relaxation is shown more early. The objective of this study is to show the alterations of the volumetric Index of the Left Atrium on different groups of patients with diabetes (DM) and hypertension (HA) **Methodology and Material** This study was prospective and observational realizing serial echocardiogram and not randomized. One hundred per cent realized echocardiogram being forty of them hypertensive, twenty seven with diabetes and thirty three with both diabetes and hypertension. Sixty per cent were female with minimum age 42 years old, medium age of 53 years old and maximum age of 63 years old. The Volumetric Index of the Left Atrium was calculated through the modified Simpson (Mayo Clinic). We utilized the equipment GE vivid 3. We realized together with the Volumetric Index of the Left Atrium the linear measure which was normal (less than 40 millimeters). **Results** All the patients had normal systolic function. The average of the Volumetric Index of the Left Atrium on the groups analyzed was: diabetic's 23cc/m2; hypertensive 25cc/m2 and diabetes plus hypertensive was 27 ml/m2. The Mayo Clinic accepts as normal values of 22ml/m2+-6.

Patients	Volumetric Index of the Left Atrium	Linear Measure
diabetes(DM)	23	3,2
hypertension(HA)	25	3,6
DM + HA	28	3,7

Conclusion Although the percentages of Volumetric Index of the Left Atrium and linear measure yet stay inside the normal parameters it can be observed a gradual atrial volumetric increase according to the pathology and when it is summed up. A linear measure stayed unaltered.

P1208

PRELIMINARY REPORT AFTER A 7 YEAR FOLLOW-UP IN WOMEN WITH A HIGH RISK SCORE EXERCISE TOLERANCE TEST AND A NORMAL CORONARY PERFUSION SPECT.

G. Llamas-Esperon[1], S. Varela-Ortiz[1], S. Sandoval-Navarrete[1], R. Munoz-Sandoval[1], M.L.. Fuantos-Delgado[1], U. Casas-Juarez[1], J. Albarran-Dominguez[1], A. Loera-Pinales[1], A. Zamora-Muciño[1]. *[1]HOSPITAL CARDIOLOGICA AGUASCALIENTES*

Objective: To evaluate subsequent cardiovascular events (myocardial infarction, death, or coronary revascularization by CABG or PCI) in women with exercise tolerance test with high risk scores based on the Duke University Score and perfusion SPECT without perfusion anomalies or dilatation of the left ventricle after stress. **Methods:** We report the preliminary results (23.7 months) of a prospective, cohort study, with a follow-up of 7 years, seeking for subsequent cardiovascular events. Ten patients were referred to the Nuclear Cardiology Service of Hospital Cardiologica Aguascalientes, from September 2005 to September 2007, for chest pain. We were able to evaluate 8 patients in the follow-up, excluding those with previous PCI, CABG, valvular disease, congenital heart disease, non interpretable exercise tolerance test, or rhythm alterations. We look for a risk score of more than 10 based on the Duke University Score. The perfusion images were evaluated on the baseline and on stress, using tecnecium 99 sestamibi. The images were evaluated by two different persons. **Results:** Of 10 patients, only 8 were followed for 7 years, with the following characteristics: average age 52 years, 2 (25%) patients had average cholesterol of 240 mg/dl, 3 (37.5%) were currently smoking more than 5 cigarrettes, 5 (62.5%) were sedentary, 4 (50%) had hypertension, 3 (37%) obesity, 2 (25%) family history of cardiovascular disease. 100% of the patients are free of any subsequent cardiovascular event. One of the patients went through a coronary angiography in a different hospital without finding any angiographic lesions. **Conclusions:** On the female population with an abnormal exercise tolerance test, with a high risk score, but with a normal perfusion SPECT, it is safe to assume that the patients will not have subsequent events. Although, it is necessary to have a higher number of pat

P1209

WAIST OBESITY - IMPORTANT RELATIONSHIP WITH METABOLIC SYNDROME AND CARDIOVASCULAR EVENTS

I.A.B. Bincoleto[1], A.C. Santomauro Junior[1], M.R. Ugolini[1], L.Z.P. Oliveira[1], F.M.B. Rossi[1], C. Nagaoka[2], J.F. Kelendjian[1], A.C. Santomauro[1], E.R. Suarez[1–2], C. Ferreira[1]. *[1]FACULDADE DE MEDICINA DO ABC [2]UNIVERSIDADE FEDERAL DE SÃO PAULO*

Introduction: The metabolic syndrome (MS) is a cluster of conditions, like increased blood pressure, elevated insulin levels, excess body fat around the waist or abnormal cholesterol levels that occur together, increasing your risk for heart disease, stroke and diabetes. Health campaigns are a good approach to evaluate the prevalence of MS in the population and also has the purpose of educate and guide patients to specialized medical care. It is important to analyze the relation between waist obesity and the other risk factors for MS, because it is related with high risk for cardiovascular events. **Objective:** Evaluate the prevalence, make a relation between the risk factors and describe the profile of the patient with MS during a health campaign in Santo André, Brazil. **Methods:** During the IV Health Fairs of the Faculty of Medicine ABC, data was collected about habits and risk factor for MS. To appraise the MS features it was measured the waist circumference, the blood pressure via a sphygmomanometer and the blood glucose via glucosimeter. We considered that the patient have MS according to the guidelines of the National Cholesterol Education Program (NCEP) with modifications by the American Heart Association, that considers MS if the patient have three or more of these traits: elevated waist circumference (greater than 88 cm for women and 102 cm for men); elevated level of triglycerides (higher than 150 mg/dL); reduced HDL (less than 40 mg/dL in men or less than 50 mg/dL in women); elevated blood pressure (higher than 130 mm Hg for systolic pressure or higher than 85 mm Hg for diastolic pressure) and elevated fasting blood glucose (higher than 100 mg/dL). **Results:** All results obtained with statistical significance p <0.05. 206 patients were examined: 76 men and 130 women, with an average age of 56.2 years. In women find relationship between abdominal circumference (AC) with systolic blood pressure (65.2%), CA with diastolic blood pressure (80.3%), CA with glycemic (97%), CA with systemic hypertension (69.7 %), CA with dyslipidemia (72.3%), and CA with diabetes mellitus (93,8%). In men found relationship between CA with systolic blood pressure (66.9%), CA with diastolic blood pressure (66.9%), CA with systemic hypertension (69%) and CA with acute myocardial infarction (98.3%). **Discussion:** The obesity in the population accompanied with increased waist obesity has been linked to increased blood pressure, as well as the relationship with acute myocardial infarction in both sexes. In the female population studies can be observed relative to the CA with the glycemic and diabetes mellitus and also dyslipidemia. So, the waist obesity seems to be an important modifier of this relationship, emphasizing its role in the control of cardiovascular risk factors.

P1210

CHARACTERISTICS, THERAPEUTIC INTERVENTIONS AND INHOSPITAL OUTCOME OF PATIENTS WITH NON ST-ELEVATION ACUTE CORONARY SYNDROMES ACCORDING TO CLINICAL PRESENTATION

H. Pomés Iparraguirre[1–2], W Santander[2], G Calderón[1], J Torres[1], O Paredes[2], M Leonardi[1], D Chambre[1], JC Olmos[2], L Ferrer[1], G Guglieri[2]. *[1]SANATORIO FRANCHIN, BUENOS AIRES, ARGENTINA [2]INCOR, LA RIOJA, ARGENTINA*

Objectives: to compare the clinical characteristics, antecedents, and inhospital outcome in patients (p) with Unstable Angina (UA) and non-ST elevation MI (NSTEMI). **Methods:** we retrospectively studied 503 consecutive p (378 men and 125 women, mean age: 59.8 ± 11.6 years), divided in two groups (G): NSTEMI (G I, n= 48,) and UA (G II, n= 455). Baseline characteristics and inhospital outcome were compared by univariate analysis (chi square, Kruskal-Wallis test): gender, age, antecedents, high risk (HR) at admission by ACC/AHA criteria, ST-depression on initial ECG (↓ ST), refractory angina (REF), mortality (MORT), (re)-infarction (reINF), mortality and (re)-infarction (M/reINF), and combined events (CE): MORT, reINF, angina and revascularization. Baseline independent predictors (IP) of NSTEMI or UA were obtained by multivariate analysis (logistic regression). **Results:** risk factors were similar in both groups. There were differences between GI and G II p in: gender (men: 85.4% vs 74.1%, p< 0.04); history of heart failure (HF: 4.2% vs 10.8%, p< 0.05) and percutaneous coronary intervention (PCI: 4.2% vs 19.8%, p= 0.005); chronic stable angina (CSA: 14.6% vs 28.6%, p= 0.04) and a trend for recent onset angina (ROA: 35.4% vs 49%, p= 0.09). HR (68.8% vs 36.5%, p< 0.001) and ↓ ST (47.9% vs 21.5%, p= 0.0001) were more frequent in G I. Medical treatment was similar, except for higher rate of heparin in G I (81.3% vs 51%, p< 0.001). Coronary angiography was non-significantly more frequent in G I (60.4% vs 47.9%, p< 0.1) with a trend to higher rate of left main disease (17.2% vs 7.8%, p= 0.058) but without differences in multivessel disease (51.7% vs 57.4%, p=0.13). Inhospital events (reINF: 14.6% vs 2.2%, p< 0.001; M/reINF: 16.7% vs 3.1%, p< 0.001, and CE: 47.9% vs 26.4%, p= 0.006) were

significantly higher in G I patients, although without differences in mortality (2.1% vs 0.9%, p= 0.4). In the multivariate analysis ↓ ST, p= 0.003, OR (95% CI): 3.14 (1.48–6.66); HR at initial stratification, p= 0.003, OR (95% CI): 3.28 (1.49–7.22); and HF at admission, p= 0.047, OR (95% CI): 3.75 (1.01–13.86) were IP of NSTEMI as clinical presentation; whereas previous PCI, p= 0.025, OR (95% CI): 5.5 (1.23–24.4); CSA, p= 0.028, OR (95% CI): 2.84 (1.12–7.21); and ROA, p= 0.007, OR (95% CI): 2.67 (1.3–5.47) were predictors of UA. **Conclusions:** NSTEMI patients were predominantly men, with lower prevalence of previous angina, coronary revascularization and heart failure, and higher frequency of inhospital events. Because of their worse outcome, baseline predictors are very important to suspect NSTEMI as clincal presentation in ACS.

P1211

Reactive C Protein, Lipid and Anthropometric Profile in Adolescents with Different Nutritional Status

L.B. Sanches[1], I.T. Silva[1], A.F.S. Paz[1], M. Fisberg[2], I.P. Cintra[2], A.P.Q. Mello[1], N.R.T. Damasceno[1].

Introduction: Obesity represents a chronic and inflammatory disease, and it is associated with endothelial lesion and increasement of biomarkers levels, like reactive C protein, and contribute for risks of atherosclerosis and cardiovascular disease in obese subjects. **Objective:** Evaluate the reactive C protein (RCP) and lipid profile in adolescents with different nutritional status. **Methods:** The sample was composed for 150 adolescents, with 12.84±1,29 years old, both gender, was selected from Public Schools and Centro de Apoio e Atendimento ao Adolescente (Sao Paulo, Brazil). After 12 hour of fast, a blood sample was collected, and from the serum, was analyzed the Reactive C Protein concentrations (ELISA) and Lipid Profile (colorimetric and enzymatic methods). The anthropoetric profile, we measured waist and arm circumferences. **Results:** Adolescents were divided in Eutrophic (n=28), Overweight (n=28) and Obese (n=28). These groups were paired by age and sex. Lipid profile (cholesterol, LDL-c, HDL-c) not showed significant differences between groups, but when Reactive C Protein, Waist and Arm circumferences were analyzed we observed differences between groups: Eutrophic (1071.4±3591.6 ng/mL; 66.9±7.2 and 22.0±3.0 cm), Overweight (5482.4±5833.5 ng/mL; 82.2±12.5 and 27.5±4.8 cm) and Obese (6269.1±7116.4 ng/mL; 99.2±13.6 and 33.1±4.3 cm) (p<0.01). We observed positive correlation between reactive C protein and IMC (r=0.401; p<0.001), waist and arm circumference (r=0.411, p<0.001; r=0.380, p<0.001), plasma cholesterol and LDL-c (r=0,319, p=0.003; r=0.245, p=0.026), and negative correlation between reactive C protein and HDL-c (r= -0.260; p=0.018). **Conclusion:** The present study shows that the high levels of reactive C protein, anthropometric and lipid profile can promote cardiovascular risks in adolescents and increased this subjects when associated with obesity. Financial Support: FAPESP 04/14517–6 and CNPq 132059/2007–0. 1.Depto. de Nutrição - FSP/USP; 2.Depto. Pediatria, Unifesp.

P1212

The Effect Of Campomanesia Xanthocarpa "Guabiroba" In Hypercholesterolemic Subjects

J. Z. Klafke[1], T.F. Panigas[1], C.M. Richter[1], T. Dipp[1], K.C. Belli[1], D.C. Bündchen[1], M.A. Silva[1], J.C.H. Coracini[1], P. Bianchi[1–2], **P.R.N. Viecili[1–2]**. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background: Fron all risk factors to coronary artery disease, hypercholesterolemia is of the importance and requires persistent treatment, because its reduction has demonstrated a decrease in cardiac mortality. The statin usege, cholesterol reduction diet and physical activity are important in the treatment. In south of Brazil it is popular to use some medicine tea such as "Campomanesia xanthocarpa", popularly known as "gabiroba"; it is used in folk medicine for hypercholesterolemia treatment, but there are insufficient data to demonstrate its benefit. **Objective:** We studied the effect of Campomanesia xanthocarpa "guabiroba" in hypercholesterolemic subjects. **Methods:** 40 hypercholesterolemic subjects (54±14 years) were randomized in experimental group (EG) to receive cholesterol diet restriction and pill with 500 mg of mashed guabiroba leaves per day, and control group (CG) to receive cholesterol diet restriction only, during tree moths. Diabetes mellitus, smoking, high cholesterol, triglycerides, hypertension, sedentary and stressful lifestyle history were considered. Weight (kg), and abdominal circumference (AC: cm) were also considered. Total cholesterol, LDL, HDL, VLDL, glucose triglycerides and RCP-us levels were analyzed pre and post study. Data were reported by mean±SD. Student t test, Independent-Samples T Test procedure and regression analyses were used. P<0.05 was considered. **Results:** The subjects, 10% had history of diabetics and smoking, 45% hypertriglyceridemic, 45% hypertension, 55% sedentary lifestyle and 47% stressful. The weight and AC were similar (76±14 X 76±15kg; NS; 99, 4±11 x 98, 6±11, NS, respectively). The metabolic variables are in the table below. There was significant reduction in LDL in both groups, but mores expressive are in EG (41% X 25%, p<0.001) There was reduction in RCP-us more evident in EG (4±3.1 X 2.4±3.2mg/dl,p<0.003; - 38%. CG: 4.0±3.8 X 3.2±4.0mg/dl,p<0.05; - 20%). There were regular correlation between LDL and RCP-us(R:04). **In conclusion:** in this preliminary study, pill with 500mg of mashed guabiroba leaves, Campomanesia xanthocarpa, decreased cholesterol and RCP-us levels more than cholesterol diet restriction. Other studies are to be needed to confirm these results.

Variables		CHOLESTEROL TOTAL PRE	CHOLESTEROL TOTAL POST	TRIGLYCERIDES PRE	TRIGLYCERIDES POST	HDL PRE	HDL POST	VLDL PRE	VLDL POST	LDL PRE	LDL POST
CG	M±SD	234.8 ± 47.7	206.6 ± 44.6	168.6 ± 57.9	200.7 ± 71	42.2 ± 6.9	47,7 ± 7.7	33.8 ± 11.5	40,1 ± 14.2	159 ± 47	118.8 ± 36
	T Test: pre X post	0.00011		0.0502		0.00143		0.05159		0.00005	
	% Reduction	-12		19		13.1		18.9		-25.3	
EG	M±SD	262.4± 48.4	197.9± 24.3	194.3 ± 108.7	210.± 144.6	38.6± 9.4	46,8± 8,7	38.9 ± 21.7	42 ± 28,9	185 ± 46.7	109.1 ± 24,1
	T Test: pre X post	0.00025		0.21009		0.00007		0.21009		0.00002	
	% Reduction	- 24.6		8.2		21.4		8.2		-41	

P1213

Coronary Fistula: treatment by hemodynamic techniques

L. Simões[1], C Lace[1], F Gurgel[1], PR Travancas[1], **JG Athayde** , CC Assef, M Celente, AH Lago Dorigo, W Paiva, MS Tagliari. *[1]NATIONAL HEART INSTITUTE(RIO DE JANEIRO) - BRAZILIAN HEALTH DEPARTAMENT*

Introduction: The coronary fistulae are rare congenital anomalies in the pediatric patients. Clinical manifestations are variable and the long-term evolution isn't totally understood. The pediatric patients must be treated even if no symptoms are present such as EKG, radiological or clinical alterations due to coronary fistula presence. **Objective:** To evaluate the treatment efficiency by hemodynamic techniques in children with coronary fistulae. **Method:** Between January 1996 and december 2006, a total of seven children with coronary fistulae were diagnosed in our center. All the children were lead to a thorough cardiac evaluation since they had murmurs; the presence of EKG alterations and cardiomegaly shown in chest X-rays were observed in three cases. The doppler echocardiographic study showed the origin of the coronary fistula and its drainage spot. (right coronary fistulae to the right atrium- 03 cases, right coronary fistulae to superior vena cava- 01 case, right coronary fistula to right ventricle- 01 case, left coronary fistulae to right atrium – 01 case, left coronary fistulae to right ventricle– 01 case). One case was previously submitted to surgery to coronary fistulae treatment. Out of all the children were sent to the hemodynamic interventionist treatment. **Results:** The age in the hemodynamic catheterization varied from 18 months to 06 years of age (avg. of 02 and 08 months). One of the patients had to undergo 2 procedures to complete the coronary fistulae occlusion. The patients went home 48 hours after the procedure was complete. The identification of distal stenotics to coronary branches for embolization, were fundamental. In five cases coils and in two other cases the Amplatzer system for ductal closure were put to occlusion. In the clinical stage (avg. 97 months) all the patients are free of cardiovascular events. **Conclusion:** The coronary fistulae treatment by hemodynamic techniques is a safe alternative comparing to classical procedures such as open-chest surgery. It also allows a shorter rehabilitation period and the patient can leave the hospital precociously.

P1214

Echocardiographic Evaluation of the Left Ventricular Hypertrophy in Patients with HTA.

Martinez, A. Esper, A. Holownia, D. Tazar, J.

Introduction: The left ventricular hypertrophy is a powerful independent cardiovascular risk factor and is the most common cardiac abnormality in hypertension (HTA). According to the Framingham study the mass of left ventricule predicts mortality in older than 40 years of age. The hypertrophy can be defined as the increase in individual size (mass) of the cardiac cell, which results in an increase in the size and weight of the organ, such as an adaptive mechanism that uses the heart to adjust its mass to the load hemodynamic. Currently the echocardiogram provides a diagnosis more specific and sensitive, with very good correlation with the pathological anatomy. Proper evaluation includes measurements of the interventricular septum, left ventricular posterior wall thickness and end diastolic diameter, with calculation of left ventricular mass according to current formulae. The relation between left ventricular mass index and cardiovascular risk is continuous. **Objectives:** To determine echocardiographic measures of septal thickness, left ventricular mass and ventricular mass index in patients with hypertension belonging to a cardiologic center of the city of San Miguel de Tucuman. Knowing the relationship between the ventricular mass index and the septal thickness was diagnosed with left ventricular hypertrophy. **Materials and Methods:** From October 2005 to May 2007, 150 patients were studied over 18 years of age, of both sexes, with a diagnosis of hypertension and no other associated cardiovascular disease. We assessed values conventional standard echocardiographics projections obtained from each patient. The ventricular mass index was obtained from the relationship left ventricular mass/Body Surface Area, taking as normal value ≤95 for women and ≤105 for men. **Main results:** 63% of the patients were women. The predominant group was among 51 to 60 years. It identified a ventricular mass index >95 to 51% for women and >105 in the 57% for men. An septal thickness >12mm was found in 53% of the total and **Conclusion:** We can infer that the proper valuation of the left ventricular hypertrophy should be used Ventricular Mass Index and not in isolation values of Left Ventricular Mass and Septal Thickness.

P1215

Evalution Of Blood Pressure Levels Among Indian Population Of The Upper Rio Negro Basin

L.M. Rodrigues[1], O.E. Soares[1], T. Dipp[1], T.F. Panigas[1], C.F. Panigas[1], D.C. Bündchen[1], K.C. Belli[1], C.M. Richter[1], **P.R.N. Viecili[1–2]**. *[1]Cruz Alta Heart Institute - ICCA [2]Cruz Alta University - UNICRUZ*

Background: Lifestyle has an important role in the maintenance of the individual well-being. Due to this, changes in lifestyle can bring either benefits or harm to the individual's health. Associations of genetic, cultural and environmental aspects can interfere in this health condition. OBJECTIVE: Study the influence of food habits and lifestyle in blood pressure (BP)

behavior in an indian population at Rio Negro basin, Amazonas – Brazil. **Methods:** Between January 2004 and July 2004, there were measurade BP from 100 "tukano oriental" indians allocated in this area and randomized in: 1- "in the village" (IN): subjects still living in according to their natural behavior that spent over 8 months in florest; and 2 – "urban" (UB): those who migrated to the few urban centers in the upper Rio Negro basin and had occidental facilities. BP was measured by standard technique. Age, gender, tabaco smoke, usage of salt, alcoholism, television access and Portuguese language were analyzed. Weight (kg), height (cm), body mass index (BMI) and abdominal circumference (AC) were measured. **Results:** The variable age was damaged, because the individuals were not sure about their date of birth. Number of women was found in both groups. Whereas 100% of UB spoke fluently two languages, 20% of IN spoke just Portuguese language ($p < 0.002$). Both groups received religion education. 16% of IN had televison access while every UB use it in their free-time ($p < 0.0001$). Around 40 % IN group used salt whereas 100% of urban group used it ($p < 0.001$). Half of groups used tobacco. The use of alcohol consumption was irrelevant. Systolic and diastolic BP (SBP/DBP) average of IN were significantly smaller than when compared to UB (SBP: 101 $\pm$ 16 x 121$\pm$17 mmHg, $p < 0.001$; DBP: 60 $\pm$ 10 X 71$\pm$9 mmHg; $p < 0.0002$, respectively). Significant difference was found in weight (IN: 52.6 $\pm$ 9.2 x UB: 65.4 $\pm$ 8.6 Kg; $p < 0.001$), BMI (IN: 22 $\pm$ 3 x UB: 26 $\pm$ 2 Kg/m2 ; $p < 0.001$) and AC (IN: 83 $\pm$ 6 x UB: 87 $\pm$ 7 cm; $p < 0.001$). Correlation among anthropometric variables and BP were not found. **Conclusion:** Althought the village group showed lower blood pressure levels, both groups remain with their pressures levels adequate. In spite of the indians who migrated to urban centers possess pressure levels, measured anthropometric values measured and habits and lifestyle similar to the urban population, it was not possible to associate these factors with BP increase. Therefore, an epidemiological enquire, with accurate methods, seems to be very important to detect if there is any scientifical evidence of variation on arterial blood pressure levels amongst those elements who migrated from the village to the urban center.

P1216

Relationship between depressive symptoms and self cerebral flow regulation

J. Tripolone[1], GA Santiago[2], JM Tripolone. [1]*INSTITUTO MEDICO SAN JUAN* [2]*INSTITUTO MEDICO SAN JUAN* [3]*INSTITUTO MEDICO SAN JUAN*

We have demonstrated the relationship between depressive symptoms and dysfunction in cardiovascular disease and its incidence in heart dISeases, and the prognosis of them.. Because of this our group focused in the study of the relationship between depressive symptoms and brain flow self regulation (AUR). We used the BDI (Beck Depression Inventory) that makes a screening of depressive symptoms and we evaluated the relationship between it and a cerebral flow self regulation test described by our group and posted at the World Congress of Ultrasound 2003. **Materials and methods:** In order to study the vasomotor carotid (C) response our research group used a hyperventilation test We studied 70 patients (normal, with cardiovascular risk factors, and carotid atherosclerotic pathology). They were interrogated with the BDI and stratified into 4 groups: <5, 5–10, 10–20, and > 20. We studied them with conventional carotid Eco and transcranial Doppler with sub-mandibular APROACHING at the C5-C6 portion of the internal carotid. The hyperventilation test was performed in 2 minutes, with simultaneous transcraneal control. We evaluated the vasomotor carotid response by measuring the resistance index, and delta resistance (DDR) in 3 states: resting, 2 minutes of hyperventilation and the post-hyperventilation state. The DDR was calculated as the difference between basal resistance index AND hyperventilation resistance (DDR1), hyperventilation resistance index and post-hyperventilation resistance index (DDR2). We found 6 different kinds of curves: 1-Normal (N), DDR1 $>$ 10% AND DDR2 $>$ 10%. 2- LOW AMPLITUDE (LA): DDR1 AND DDR2 $<$10% and$>$ 3%. 3 - Plane (P): DDR1 AND/OR DDR2 $<$3%. 4-Inverted or paradoxical (I): These are DDR1 AND/DDR2 negative. 5-Mixed (M): A mixture of the ones listed before. 6-With Flow Absence (ADF). Self Cerebral Flow Regulation Index (AUR): In the Normal group, the average value was 0; a mayor abnormality (curve diminished, flat or inverted) resulted in an incremented AUR THE FOLLOWIUN EXAMPLE IS FOR DELTA DDR1 OR DDR2 FOR THE CALCULATION OF AUR EJ: DDR1=N=0, DDR1=LA=1, DDR1=I=3, DDR1=M=4 DELTA SUMMATORY: DDR1 +DDR2 TO $>$ ANORMALITY $>$ AUR AND $<$ DELTA SUMMATORY CIM: INTIMA MEDIA COMPLEX Statistical Analysis: Kruskal-Wallis test for medium with significant difference at $p<0.05$ **Results:**

BDI	Number PAT	% females	Age	AUR	Delta	CIM
<5	24	36	52	1.5	0.68	0.57
5–10	15	54	68	3.5	0.4	0.105
10–20	21	75	58	4.4	0.29	0.12
>20	10	100	66	6.25	0.16	0.1

significant difference ($P<0.05$): SEX FEMENINE, AUR, DELTA SUMMATORY

Conclusions: 1- We observed an alteration in the brain self flow regulation curves and Delta in a gradual and continuous way when the depressive symptoms were increasing (see the table). 2 - There was an increase in the percentage of women with greater BDI. 3-These data are consistent with the profound impact of depressive symptoms on the Cerebral Self Flow Regulation 4- We suggest assessing depressive symptoms in cardiology clinics.

P1217

PREVALENCE OF PERIPHERAL ARTERIAL DISEASE OF LOWER EXTREMITIES, IN PATIENTS WITH CORONARY DISEASE.

G. Llamas-Esperon[1], R. Muñoz-Sandoval[1], S. Sandoval-Navarrete[1], A. Zamora Muciño[1], M.L. Fuantos-Delgado[1], U.T. Casas Juarez[1], J. Albarran-Dominguez[1], S. Varela Ortiz[1]. [1]*HOSPITAL CARDIOLOGICA AGUASCALIENTES*

Objective: To determine the association between peripheral arterial disease in lower extremities with the ankle-brachial index (ABI), in hospitalized patients with coronary disease. **Methods:** All the patients who were hospitalized with coronary disease from December 2006 to March 2007, who underwent revascularization surgically or percutaneously. They were also evaluated with the ankle-brachial index. **Results:** Of 50 registered patients, 32 were men (64%), 22 (44%) with family history of cardiovascular disease, 38 (76%) had hypertension, 24 (48%) were currently smoking more than 5 cigarrettes, 23 (46%) had diabetes mellitus, 22 (44%) had dyslipidemia. Of all the patients, 16 (32%) had an altered ABI (<0.9), 9 (18%) had mild stenosis (0.71–0.9), 4 (8%) moderate stenosis (0.41–0.7), and 3 (6%) had severe stenosis (<0.4). Two of the patients with severe stenosis in the lower extremities, had disease in three coronary arteries, one was resolved with surgical revascularization and the other percutaneously. Of the four patients with moderate peripheral stenosis, one had disease in three coronary arteries and was solved surgically, the other three patients had coronary disease in two arteries and solved percutaneously. All the patients with mild peripheral disease had coronary disease in one artery and were resolved with a percutaneous technique. **Conclusions:** This presentation shows the highly prevalent association between coronary disease and peripheral arterial disease. Our results are higher than those described previously; we think it might be related to the high prevalence of diabetes and smoking status. Of course, these results have to be corroborated with a higher number of patients.

P1218

Functional and Structural Alterations on Aortic Calcifications (AC)

J. Morais[1], T. Diogenes, J. Paes Jr. [1]*PRONTOCARDIO AND CLINICARDIO* [2]*PRONTOCARDIO AND CLINICARDIO* [3]*PRONTOCARDIO AND CLINICARDIO*

Functional and Structural Alterations on Aortic Calcifications (AC) José Maria Bonfim de Morais, Tereza Cristina Pinheiro Diogenes e Jose Nogueira Paes Junior **Introduction** Longevity brings body alterations that change clinical diagnosis. In fact it can not be given to an old aged man or woman the same diagnosis as he or she was younger. The objective of this paper is to analyze Aortic Calcifications on old aged patients without previous cardiac illness. **Methodology and Material** 25 patients being fifteen female and ten male, with minimum age of seventy six years old (76) and maximum of ninety five years old (95) with average of seventy nine (79) years old were submitted to an echocardiogram (ECO). These patients had normal ventricular function, normal cardiac area and normal segmental contraction. They did not have previous myocardium infarct history. All patients involved had some kind of systemic arterial hypertension, 60% of the patients were mellitus type II diabetes carriers. The echocardiogram was realized using traditional methods. **Results** The results showed that: Three patients had valvar area (AVA) considered severe (0,75), 50mmHg; two patients had moderate AVA from 0,8 to 1.0 with gradient of 25–50mmHg; five patients have slight AVA form 1.0 to 1.5 with gradientof 25mmHg. Of this last group two patients were male and eight female. The other fifteen patients had calcification without hemodynamic expression. **Conclusion** The aortic calcifications needs a specific study to the old aged in special those without previous cardiopatic history.

P1219

CARDIOPULMONARY AND METABOLIC EFFECTS IN PATIENTS SUBMITTED TO A CARDIOPULMONARY AND METABOLIC REHABILITATION PROGRAM

C.A. Hossri[1], M.C. Thomazi[1], R. Ceolin[1], G. Shinzato[1], E.C. Souza[1], H. Arakaki[1]. [1]*HOSPITAL DO CORAÉAO, SAO PAULO, BRASIL*

Background: Cardiac rehabilitation/secondary prevention programs are recognized as integral to the comprehensive care of patients with cardiovascular disease and as such are recommended as useful and effective (Class I) by the American Heart Association (AHA) and the American College of Cardiology in the treatment of patients with coronary artery disease and chronic heart failure. All cardiac rehabilitation/secondary prevention programs should contain specific core components that aim to optimize cardiovascular risk reduction, reduce disability, and promote an active lifestyle for patients with cardiovascular disease. Successful risk factor modification and the maintenance of a physically active lifestyle is a lifelong process and a multiprofessional approach is necessary to obtain better results in quality of life and survival. **Objective:** To investigate the effectiveness of a Cardiopulmonary and Metabolic Rehabilitation Program (CPMRP) for patients with coronary artery disease (CAD). **Methods:** Eighty patients submitted to a cardiac rehabilitation program in Hospital do Coraçγo, in Sγo Paulo, Brazil, were followed. Fifty-five patients had coronary artery disease. Forty-nine patients were men and the mean age was 58 +/- 27 years. In the group with coronary artery disease, sixty-five percent of the subjects had comorbidity, such as diabetes, obesity or pneumopathy. Outcome variables included the maximal oxygen uptake, the oxygen uptake at the anaerobic threshold and the percentage of body fat, in the beginning and after the cardiac rehabilitation program. **Results:** There was an important improvement in maximal oxygen uptake and at the anaerobic threshold. Participating in a cardiopulmonary and metabolic rehabilitation program lead the patients to a better exercise tolerance, aerobic and ventilatory capacity. There was also a loss of body fat measured after the rehabilitation program. **Conclusion:** A cardiopulmonary and metabolic rehabilitation program is effective in improving functional capacity, reducing cardiovascular risk and disability in patients with coronary artery disease.

P1220

Electrocardiographical Evidences of Intra-coronary Autologous Stem Cells Implantation: Intraventricular Electrical Transients Study by Signal-Averaged Electrocardiogram

P.R. Benchimol-Barbosa[1,2], H.F. Martino[2], A.C. Campos-De-Carvalho[2,3], **F.D. Vilela[2]**, C Miranda[1], R.N. Gobbi[1], P.S. De Oliveira[1], L.H. Weitzel[2], J. Barbosa-Filho[1,2], I. Cordovil[1,2]. *[1]Gama Filho University [2]National Institute of Cardiology [3]Federal University of Rio de Janeiro*

Introduction: Intermediate stages of cell transdifferentiation into cardiomyocites represent an increased risk for reentry arrhythmia due to slow electrical conduction in in vitro preparations after intramyocardial stem cell transplantation. Transient electrical activity originated in regions of slow electrical conduction may be detected on the body surface during myocardial healing in vivo by signal-averaged electrocardiogram (SAECG). **Purpose:** We hypothesized that after intra-coronary autologous stem cell (ASC) transplantation, high frequency content during electrical activation increase as a consequence of cell homing. Thus, we prospectively investigated intra-QRS high frequency content using SAECG, during the first 30 days following intra-coronary ASC transplantation. **Methods:** Four subjects (average age 43.5 years, all males) with idiopathic dilated cardiomyopathy were submitted to percutaneous intra-coronary with labeled-ASC transplantation. QRS-triggered SAECG was assessed in day two before (B-2D), and in days 7 (A-7D), 15 (A-15D) and 30 (A-30D) after transplantation. Myocardial scintigraphic images of labeled cells were acquired during this period. All had complete left bundle branch block and left ventricular ejection fraction (LVEF) (mean±SD) 25.8±6.2% assessed by Simpson method. SAECGs were acquired during 10 minutes in supine position head-up tilted at 15° for individual adaptation, using XYZ-modified Frank leads, in a low-noise environment and temperature between 77°F and 80°F. In all subjects, power spectral density function estimates were mapped throughout ventricular activation using 25ms Hanning-tappered windows at 2ms-steps on averaged XYZ lead, building a time-frequency map. On each spectral window, frequency corresponding to 80% of the total area under respective power spectral density function was tracked throughout ventricular activation, defining frequency edge track (FET). Increase in electrical transient content was assessed as variation in FET during activation. The mean and the standard deviation (SD) of FET series were calculated for each map. Data were analyzed at B-2D, A-15D and A-30D using Duncan's contrast test, and alpha error level set to 0.05. Data are presented as mean±SD. **Results:** Scintilographic images showed homing of labeled-ASC in the myocardium, mainly the inter-ventricular septum. No significant change in electrical transients was observed between B-2D and A-7D (respectively, mean-FET: 177±13.5Hz vs. 114±8.3Hz; p=NS; SD-FET: 57±8Hz vs 61±9 Hz, p=NS). A significant increase in electrical transients was detected between B-2D e A-15D (mean-FET: 203±7Hz, p<0.05; SD-FET: 73±6 Hz, p<0.05), and remained stable to A-30D (mean-FET 203±42 Hz e SD-FET 68±5Hz, p=NS for both). From the onset of the ventricular activation, the time required to activate the myocardial site with labeled-ASC correlated to the time of onset of electrical transients in SAECG (r=0.90, p<0.05). **Conclusion:** Intra-QRS high frequency content increases after the second week of intra-coronary labeled-ASC transplantation and remanins elevated until the end of the first month, which may represent arrhythmogenic potential.

P1221

Reproducibility of reversible myocardial perfusion defects by cold pressor test myocardial perfusion SPECT imaging.

O. Masoli[1], M. Redruello[2], N. Maciel[3], J. Gagliardi[4], S. Traverso[5], L. Grynberg[6], L. Vidal[7], N. Perez Baliño[8]. *[1]Hospital Argerich [2]Hospital Argerich [3]Hospital Argerich [4]Hospital Argerich [5]Hospital Argerich [6]Hospital Argerich [7]Hospital Argerich [8]Hospital Argerich*

Evaluating coronary endothelial function is an invasive process and is not easily applicable to large populations. Although major interest has been focused on functional testing in atherosclerotic and proatherosclerotic disease states and its risk factors, as an early marker of atherosclerosis. Our group described previously the sensitivity and specificity of cold pressor test and myocardial perfusion SPECT imaging (CPT) in the endothelial dysfunction (ED) diagnosis. Objective: To determine the reproducibility of CPT in the assessment of ED in patients with unknown coronary artery disease (CAD). **Methods:** We analyzed 31 patients (20 males) mean age 53± 9 y/o. Two CPT was done with a week of interval. Both tests were reported by two blind observers. CPT extension score was used in a 17 segment model and a summed difference score (SDS) ≥2 was considered positive for ischemia. **Conclusions:** CPT is a very good reproducible method for detect ED in patients with unknown CAD.

RESULTS:

CPT 1	CPT 2	R IC95%	p value
SSS (CPT)	2.5	3.53	0,6297 0,3484 to 0,8069 0,0002
SRS	0	0	0
SDS	2.5	3.53	0,6297 0,3484 to 0,8069 0,0002

P1222

Is the Rest Echocardiogram is enough to evaluate the contractile recovery after CABG?

L.H. Weitzel[1], A.C. Camarozano[1], F.J.M. Pitella[1], C.A.S. Nascimento[1], L. Belem[1], A.S.C. Rocha[1]. *[1]NATIONAL INSTITUTE OF CARDIOLOGY - LARANJEIRAS - RIO DE JANEIRO*

Background: Patients with coronary artery disease and systolic disfunction sometimes don't show recovery of contractile function at rest after CABG despite of less symptoms. **Objectives:** This study was conducted to verify if dobutamine stress echocardiogram (DES) was better than echocardiogram at rest to evaluate the increase of left ventricle contractile function after CABG. **Methods:** We prospectively evaluated 25 patients submitted to CABG who agreed to perform DES and coronary arteriography before and after CABG. Ten of these patients with systolic disfunction before and no myocardial ischemia on DES after CABG were specifically studied. **Results:** The contractile score on rest echocardiogram before was 1,95±0,50 and after CABG 1,77±0,55 (p<0,01) and the ejection fraction by Simpson's method 35,4±3,5% before and 38,9±3,7% after CABG (p<0,01). On DSE the score was 1,99±0,52 before and 1,47±0,43 after CABG (p<0,001), and the ejection fractions were 34,7±3,6% before and 46,9±3,1% after CABG (P<0,001). **Conclusions:** Although the rest echocardiogram presented small reduction in the contractile scores and increase in the ejection fractions, the severe left ventricle systolic dysfunction failed to recovery. On DSE the recovery of contractile function was better demonstrated, and the contractile score was smaller and the ejection fraction was greater after CABG in relation to study at rest. This fact probably is related to a increase in myocardial contractile reserve and less symptomatology after CABG.

P1223

PERCUTANEOUS SEPTAL ABLATION WITH ABSORBABLE GELATIN SPONGE IN HYPERTROPHIC OBSTRUCTIVE CARDIOMIOPATHY

G. Llamas-Esperon[1], S. Sandoval-Navarrete[1], R. Muñoz-Sandoval[1], A. Loera Pinales[1], S. Varela Ortiz[1], E. Sandoval Rodriguez[1], M.L. Fuantos-Delgado[1], U.T. Casas Juarez[1], J. Albarran-Dominguez[1], A. Zamora Muciño[1]. *[1]HOSPITAL CARDIOLOGICA AGUASCALIENTES*

Objectives: To show the results of a new technique to do Percutaneous Transluminal Septal Myocardial Ablation with Absorbent Gelatin Sponge particles **Methods:** Hypertrophic obstructive cardiomyopathy (HOCM) is an autosomic dominant disease that affects one in 500 adults and can be treated by different methods. Only 50% usually improve by pharmacological means. Other treatments include dual chamber pacemakers or surgical myectomy. The treatment of HOCM by percutaneous transluminal septal myocardial ablation (PTSMA) with ethanol injection has greatly improved in the last years. This report describes the case of two patients. One with symptomatic drug-refractory HOCM who underwent an unsuccessful attempt to thrombose the septal artery by PTSMA with alcohol. Therefore was decided to use small absorbent gelatin sponge (AGS) particles, to cause microembolism, obtaining immediate and permanent disappearance of the gradient. The other patient underwent the same procedure initially with AGS. **Results:** Both patients progressed satisfactorily and displayed lower than average creatine kinase levels in comparison to the rest of our PTMSA patients. After 2 and 1 year of follow up, respectively, they still remain asymptomatic and without any gradient. This is the first reported case of a patient who underwent PTSMA with small AGS particle embolization for the treatment of HOCM in the medical literature. The procedure was feasible and the patients' outcome was satisfactory. Unlike ablation with ethanol, the use of AGS confines the damage exclusively to the desired area, ensuring permanent thrombosis and thus avoiding recovery of retrograde coronary flow as observed with the use of covered stents or coils. **Conclusions:** These results suggest that PTSMA with AGS could be a valuable alternative treatment of HOCM, without the adverse effects of ethanol.

P1224

PREDICTION OF THE INTRAOPERATIVE IMPROVEMENT OF THE RIGHT VENTRICLE STROKE WORK INDEX DURING PULMONARY ENDARTERECTOMY

A. Bertolotti[1], C Gomez[1], J Negroni[1], M Diez[1], L Favaloro[1], JO Caneva[1], R Boughen[1], F Klein[1], RR Favaloro[1].

Objective: to evaluate the intraoperative impact of (PE) on the right ventricle stroke work index (RVSWI). **Population and Methods:** Between 11/1992 and 2/2007, 26 consecutive patients (17 male, 65%) underwent a PE. Mean age was 46±13 years. Pre operative NYHA Functional Class was 3.6±0.6. Pre and postoperative hemodynamic variables were analyzed in the operating room (OR). Improvement (IMP) on the RV stroke work was assessed by the following equation: Postop RVSWI – Preop RVSWI. **Results:** A significant drop (p<0.001) was observed after PE in mPAP (56±13 vs. 31±10 mmHg) and TPVR (1226±441vs. 437±196dyne/seg/cm-5). The preop and postop RVSWI was 17.22±8.26 and 10.44±6.88 gr-m/m2, respectively (p<0.01). The linear adjustment between IMP and the preop mPAP led to a coefficient of linear correlation R=0.57 (p<0.01). Adjustment parameters were: slope = -0,366 and ordered to the origin =14

P1225

Predictive Value of Carotid Intima-Media Thickness, Carotid Plaques and Endothelium-Dependent Vasodilation for Vascular Events in High Risk Patients.

C. Ingino[1], M. Kura[1], R. Machado[2], A. Cherro[1], E. Ricardo[2], P. Lylyk[1]. *[1]ENERI Medical Institute [2]Military Hospital*

Background: Carotid intima-media thickness (IMT), carotid plaques (CP) and endothelium-dependent brachial artery vasodilatation (EDV) are early markers of vascular disease with independent prognostic significance. Whether these markers add prognostic information to traditional risk factors is not known. In this study we assessed their incremental prognostic value in a high risk patient population. **Methods**. A total of 502 high risk patients underwent IMT, CP and EDV. Abnormal values were defined as follows: maximum IMT >1.1 mm(M'Ath-StdTM), presence of CP, or EDV <5%. The end-point of the study was the occurrence of cardiac, cerebral, or peripheral vascular events. Markers of early vascular disease were incorporated into a multivariated analysis model along with traditional risk factors of cardiovascular disease such as age, diabetes, hypertension, dyslipidemia, smoking, and the components of the metabolic syndrome. **Results**. The mean age was 66±9 years and 69% were men. A total of 43 events occurred during a 4 year follow-up period. Predictors by univariate analysis: CP RR 5.62, p=0.001; IMT RR, 5.27, p=0.005; HT RR, 3.4 p=0.001; DLP

RR, 3.14 p=0.01; Age RR, 2.71 p=0.005; MS 2.18, 0.02;EDV: RR 1.60, p=0.16. The presence of carotid plaques remained the strongest predictor after adjusting for traditional risk factors (RR 3.13, p<0.05). **Conclusions**. Markers of early vascular disease add independent prognostic information to traditional risk factors. Screening of at-risk patients for markers of early vascular disease should be considered

P1226

Heart failure in a public universitary hospital in Argentina. Characteristics of population and causes of hospitalization.

V. Volberg[1], A. Pesantes[1], O. Grosso[1], J. Lerman[1], C. Berensztein[1], D. Pineiro[1].
[1]*UNIVERSIDAD DE BUENOS AIRES, ARGENTINA*

Aim. To asses the characteristics of population and causes of hospitalization in a public universitary hospital in Argentina. **Population and methods.** We evaluate retrospectively a randomized sample of the record of 108 in-patients with diagnosis of heart failure (HF) between years 2001 and 2006. **Results.** The median of age was 89 years (rank 55–101), 75 % women. The cause of admission was dyspnea II-IV in 57%, acute pulmonary edema in 19%, peripheral edema in 22% and shock in 3%. Median duration of stay was 7 days (rank 1–43 days). History of heart failure was present in 48% (61% had had at least 1 previous hospitalizations) hypertension in 82% (treated 65%), coronary heart disease in 35%, and diabetes in 10%. Sixty per cent of patients presented HF with preserved systolic function. Treatment before and after to admission was:

	BEFORE	AFTER	p
ACEI/ARB	54%	75%	<0.001
Beta blockers	28 %	32 %	NS
Spironolactone	5 %	19 %	<0.01
Diuretics	45%	53%	NS
Digoxin	22 %	26 %	NS
Calcium blockers	14 %	12 %	NS
Aspirin	40 %	59 %	<0.01
Oral anticoagulation	8 %	11 %	NS

Conclusion. Most patients admitted in a universitary and public hospital in Argentina for HF were aged and presented HF with preserved systolic function. Treatment before and after admission differed in the use of ACEI/ARB, spironolactone and aspirin.

P1227

Non-invasive evaluation of local and regional biomechanical properties of post-implanted arterial cryopreserved homografts

D. Bia[1], S. Laza[2], H. Perez[3], Y. Zocalo[1], D. Craiem[4], S. Lluberas[1], A. Esperon[5], I. Alvarez[3], R. Armentano[1–4]. [1]*Physiology Department, School of Medicine, Universidad de la República, Montevideo-Uruguay* [2]*Anatomy Department, School of Medicine, Universidad de la República, Montevideo-Uruguay* [3]*INDT, Ministerio de Salud Pública - Universidad de la República, Montevideo-Uruguay* [4]*FICEN, Universidad Favaloro, Buenos Aires-Argentina* [5]*Hospital de Clínicas, Universidad de la República, Montevideo-Uruguay*

Background: The geometrical and biomechanical mismatch between the native artery (NA) and the vascular substitute (VS) are recognized as main determinants of the graft failure. Consequently, an ideal VS must have biomechanical properties (BMP) identical to that of the NA. However, when an arterial segment is replaced, mostly autologous venous grafts and/or synthetic prosthesis are employed and their BMP are far from that of the NA. Consequently, there is an increasing interest in obtaining VS more alike to the NA. In this context, the advances in the cryopreservation techniques made the use of cryopreserved arteries (cryografts) an interesting alternative to the substitutes available nowadays. Recently, we demonstrated that our cryopreservation procedures allow preserving the BMP properties of elastic, transitional and muscular human arteries, and that the biomechanical mismatch would be reduced if cryografts were used instead of synthetic prosthesis (i.e. ePTFE). However, up to now it remains to be established if the BMP of human cryografts are preserved years after the implant and if the cryografts kept their mechanical advantage over the synthetic prosthesis. Moreover, in our knowledge there are not studies characterizing the human cryografts BMP using non-invasive gold standard methods. **Aim:** To evaluate the BMP of human cryografts and their biomechanical adaptation to the recipient cardiovascular system, after more that one year post-implanted, establishing if the cryografts keep their biomechanical advantage over the synthetic prosthesis. **Methods:** Five cryografts implanted before June 2006 in the lower limbs of four patients were evaluated. The arterial biomechanics was evaluated using gold standard techniques and parameters. The ***local*** BMP were evaluated by means of the effective and isobaric compliance and distensibility. To this end the native artery (proximal to the anastomoses) and the cryografts (recorded each 4–6 cm of distance) pressure and diameter were measured using tonometry and Mode-B Echography, respectively. The cryograft ***regional*** BMP were evaluated by means of the pulse wave velocity (PWV, measured considering the pulse transit time along the cryografts length). The cryograft biomechanical adaptation/effects on the recipient arterial region were evaluated by means of the carotid-femoral, carotid-popliteal and/or carotid-pedia PWV. **Results:** The described methodologies allowed characterizing the local and regional BMP in all the studied cryografts. The cryografts BMP were different to that of the NA but the mismatch native vessel-cryograft was still lower than that native vessel-synthetic prosthesis. **Conclusion:** In this work, for the first time the post-implanted local and regional BMP of human cryografts were evaluated using non-invasive and gold standard methodologies. The cryografts showed differences in the biomechanical behavior when compared with native vessels but years after the implant the mismatch was still lower than that of the native vessel-synthetic prosthesis. The use of the methodology and experimental protocol described in this work, would allow to evaluate the BMP of cryografts and to early detect failure of the grafts due to biomechanical factors.

P1228

THE EFFECTS OF THE BREATH CONTROLLED INCURSIONS ON THE AUTONOMIC MODULATION OF THE HEART IN SUBJECTS WITH RESISTENT HIPERTENSIVE TO THE TREATMENT: IMPACT OF AUTONOMIC MODULATION ON RENIN-ANGIOTENSIN-ALDOSTERONE SYSTEM (SRAA)(CURUMIM STUDY II)

G.N. Gobbi[1], P.R. Benchimol-Barbosa[1], C.S. Miranda[1], F.D. Vilela[2], A.F.P. Gondar[1], J. Barbosa-Filho[1], M.V. Barros[2], A.B.R. Lima[2], F.V. Campos[1], I. Cordovil. [1]*Gama Filho University* [2]*National Institute Cardiology-Health Ministry*

Introduction: Instantaneous heart rate is determined by dynamic integration between sympathetic and parasympathetic systems upon sinoatrial node. The action of these two systems upon heart rate modulation can be evaluated by the Fourier decomposition of consecutive normal beats series (RR interval), of which the low frequency spectral components (LF) represents baroreceptor and sympathetic influences and high frequency spectral components (HF) parasympathetic respiratory influences. Controlled respiration (CR) modulates heart rate through parasympathetic stimuli, possibly influencing spectral components distribution and short-term autonomic modulation. **Objective:** To Assess the influence of renin-angiotensin-aldosterone system (SRAA) polymorphism on the effect of the CR on the automatic modulation of the heart in subjects with systemic arterial hypertension (SAH) refractory to drug treatment. **Methods:** In prospective observational study, 34 subjects with SAH refractory to drug treatment were analyzed, which made part of the database of the Department of Arterial Hypertension the National Cardiology Institute – MS, Rio de Janeiro. After supine rest for 5 minutes, three consecutive five-minutes recordings of surface electrocardiogram (ECG) were obtained in different phases: 1) First basal (FB) – supine rest, 2) During CR – six incursions/min during four minutes, 3) Second basal (SB) – second supine rest during five minutes after CR. The signals of the ECG were analyzed by specific software for extraction of interval between normal beatings and building of respective power spectral density functions.. The following polymorphism genotyping of renin angiotensin aldosterone system were assessed: renin (REN G1051A), angiotensinogen (AGT) M235T, insertion/deletion of angiotensin-converting enzyme (ACE I/D), angiotensin II type 1 receptor (AGTR1) A1166C and aldosterone synthase (CYP11B2) C344T. Polymorphisms analyses were performed using polymerase chain reaction, with further restriction analysis when required. The influence of genetic polymorphisms and clinical risk factors on blood pressure variation was assessed. Comparison of the arterial blood pressure, both systolic and diastolic, was carried out by Kruskall-Walis ANOVA test. Alpha error level was set to 0.05. **Results:** The distribution of genotype of the polymorphisms CYP11B2 was: CC-10%, CT- 43%, TT- 47%.The subjects with genotype CC the difference RR was 80,4, in the subjects with CT was 5,3 and the ones TT the difference was 21,4. The confrontation between CC group and TC, and the confrontation between CC group and TT were statistic relevancy with p=0,005 and p=0,019 respectively. **Conclusion:** In subjects with SAH refractory to drug treatment the polymorphisms CYP11B2 of the SRAA determinates different standards in the response of CR. It indicates a possible genetic control of the autonomic cardiac function.

P1229

Is decrease of left ventricular ejection fraction after stress with normal perfusion associated with cardiac events?

R. Berber[1], P Nogueira[2], L Ribeiro[3], D Pareira[4], R Lopes[5], F Alves[6], M Oliveira[7], P Smanio[8]. [1]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [2]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [3]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [4]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [5]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [6]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [7]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA* [8]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA*

Background: Left Ventricular ejection fraction (LVEF) is an index of global systolic output and is very useful as a clinical predictor of cardiovascular mortality. The value of myocardial perfusion scintigraphy (MPS) is already established, although is still not very known the value of decease in the LVEF after stress in relation to basal on the presence of normal perfusion. **Objective:** To evaluate the prognostic value of the decrease in the LVEF after stress in relation to basal with normal myocardial perfusion. **Methods:** It was an observational, retrospective study performed through analysis of medical records of 11.569 patients (p) who were submitted to myocardial perfusion scintigraphy (MPS) between 2003 and 2005. From the total were selected 101p with normal perfusion that were divided in 2 groups in relation with the presence of decrease in the LVEF after stress phase. Group I (50p): normal perfusion and no decrease in the LVEF after stress. Group II (51p) normal perfusion and decrease 5% in the LVEF after stress. From total, 74,3% was female; mean age 64,3 years; 38,6% with known coronary artery disease (CAD); 85,1% had hypertension; 25,7% diabetes; 70,3% hyperlipemia and 31,7% was tobacco use. There was no significant statistical difference in relation to these clinic-epidemiological characteristics between the 2 groups. All studies were performed with Tc-99m-MIBI by gated-SPECT technique and 2 days standard protocol. It were considered normal perfusion if there were no perfusion defects during both phases and normal LVEF if values >/=50%. The Group II had 40 p with decrease of LVEF from normal values to normal values and also 11 p with decrease from normal values to abnormal values. The mean follow up time were 37 months. It was considered cardiac events (CE) death, acute myocardial infarction (AMI) and revascularization (RV) procedures. It were also analyzed all CE together. The statistical analysis were performed by chi-square, independent T and Fisher's exact tests and considered as significant if p value < 0,05. **Results:** During the follow up period were registered 12 (12%) combined CE and all in Group II (p=0,001). Eleven (11%) p performed coronary angiography, all from Group II (p=0,001) and 3 had significant stenosis (70%). There were 3 AMI, 1 death and 3 RV (2 PTCA and 2 CABG) all in Group II. There was no significant statistical difference in each CE separated (few EC) in the 2 groups. There wasn't difference between p with decrease of LVEF from normal to normal or normal to abnormal values of LVEF. **Conclusion:** the obtained results suggest higher combined CE in the Group of p with normal

perfusion and decrease of LVEF after stress and it may suggest that the presence of LVEF decrease after stress has prognostic value even with normal perfusion.

P1230

CLINICAL IMPLICATIONS OF ANEMIA IN HEART FAILURE PATIENTS

M. Descalzo[1], M Diez[1], L Favaloro[1], M Perea[1], R Ratto[1], D Puente[1], J Barra[1], M Peradejordi[1], **L Feldman[1]**. [1]*FAVALORO FUNDATION*

Introduction: Anemia has recently been demonstrated to be a common co morbid condition in patient with heart failure (HF) and left ventricular dysfunction. There are few data acknowledging the prognostic value of anemia in this particular population in Argentina. **Objective:** Our purpose is to analyze the prevalence of anemia in a hospitalized, consecutive, congestive heart failure population and its relationship with several clinical variables. Also to evaluate hospital length stay, inhospital and global mortality. **Methods:** We included 428 patients (pts) hospitalized in a single centre from 1 May 2004 to 1 June 2005 for decompensated HF. The mean follow up period was 477,5 ±420 days (428–1240). Anemia was defined as Hb < 13 mg/dl in men and < 12 mg/dl in women. Pts were analyzed in hemoglobin (Hb) quartiles: <11,2, < 12,9, <14,3, ≥ 14,3 mg/dl and considering anemia as a dichotomy variable. Then we compared clinical characteristics: age, creatinine level (Cr), clearance of creatinine (ClCr), sodium level and left ventricular ejection fraction (LVEF) in each group. **Results:** Mean age was 70 ± 14 years, 61,9% were male. There were 86,2% of pts in NYHA functional class (FC) III-IV and the mean LVEF was 37,4 ±15,9 %. 105 pts (27,4%) had preserved LVEF. Coronary etiology was predominant (47,6%). The prevalence of anemia was 43,5%, and in the anemic group mean Hb was 10,8 ±1,3 mg/dl. There were no differences in age, LVEF and NYHA FC between the anemic and non anemic group. Most pts presenting hypoperfusion signs (12,5% vs. 6,6%) were anemic (p = 0,039). The use of inotropic (23,5% vs. 10,8%, p=0,001), intraaortic balloon pump (6,9% vs. 3,1%, p=0,078) and dialysis requirements (6,4% vs. 0,9%, p = 0,002) were associated with anemia. Cr level (1,7 vs. 0,65 mg/dl, p=0,008), ClCr (55,6 vs. 62,1 ml/min, p=0,02), sodium level (134,1 vs. 135,3 meq/l, p=0,039) and inhospital length stay (12,8 vs. 6,1 days between quartile 1 and 4, p=0,0001), were significantly associated with anemic pts. In hospital mortality was not different between groups. However total mortality was significantly associated with anemic population (30,6% vs. 40,9%, p= 0,03) at 16±14 months specially those anemic pts with LVEF <40% (40,8%) vs. not anemic pts with LVEF <40% (27,4%), p= 0,035. Neither difference was found between those pts with LVEF >40% independently of the anemia condition. **Conclusions:** The prevalence of anemia in a hospitalized non selected HF population was 43,5%. It might behave as an additional co morbid condition not as an independent in hospital mortality predictor. On the other hand, it predicts a subgroup of pts with higher clinical risk, longer inhospital length stay and higher total mortality specially the subgroup of anemic pts with LVEF <40%.

P1231

Analysis of the relationship of the presence of the resistance to the insulin and diastolic dysfunction in senior.

R.F.M. Viégas[1], R.V.Z. Diniz, T.M.R.F. Viégas, A.M.R.R. Oliveira, A.C. Schimidt, D.R. Almeida . [1]*UNIFESP* [2]*UNITAU*

Analysis of the relationship of the presence of the resistance to the insulin and diastolic dysfunction in senior. **Foundations:** The resistance presence to the insulin increased has been considered as risk factor for the development of cronic heart failure, and the normal systolic function or slightly altered is observed in 30 to 40% of the cases. **Objective:** To analyze the relationship among the presence or not of RI and the diastolic dysfunction and their variables observed in the transtoracic echoddoplercardiogram in senior. **Method:** they were included patient above 60 years, of both sexes, in the period of January of 2004 to June of 2006, being directed for the accomplishment of ETT and laboratory determinatio of the resistance to the insulin (HOMA Method). they were considered as bearers of RI elevated the values obtained larger or equal to 2,4. they were excluded of the studies the patients bearers of systolic dysfunction and/or diabetics in metformina use and/or insulina. **Results:** 123 were studied senior, with average of 70,2 year-old age (varying from 60 to 90 years). 83 senior (67%) they were female and 40 (33%) male. hypertension 80%, dyslipemia 56%, bearers of central obesity 55%, elevated glycemia 11%. bearers of metabolic syndrome were considered 34%. THE increase of RI was found in 25% of the studied population. There was relationship between the presence of RI and SM (P <0,05). there was not relationship between the presence of RI and the measures found in ETT to the way M (P>0,05). however, we found a high prevalence of diastolic dysfunction in this population with strong relationship for the presence of RI elevated (P <0,01) what was not observed in the patients bearers of MS (P>0,05). **Conclusion:** The resistance presence to the increased insulin (and no the occurrence of metabolic syndrome) it presents relationship with the presence of diastolic dysfunction in senior.

P1232

Socioeconomic status, Hospital Volume and Ischemic Stroke Mortality in Canada

G. Saposnik[1], T Jeerakathil[2], D Selchen[1], V Hachinski[3], MK Kapral[1]. [1]*University of Toronto* [2]*University of Alberta* [3]*University of Western Ontario*

Background: Socioeconomic disparities in health care have been documented for several medical conditions in many countries, even in those with universal health insurance. Socioeconomic status has been associated with increased incidence of stroke and poor outcomes. However, few studies analyzed the route followed by different group of patients with stroke. **Objective:** To identify whether low income individuals were more likely to be admitted to facilities with low stroke volume, and whether this contributes to differences in outcomes. **Design, Setting, and Participants:** Multicenter Cohort study including all hospital admissions for ischemic stroke identified from the Canadian Hospital Morbidity database (HMDB) from April 2003 to March 2004. The HMDB is a National database that contains patient-level socio-demographic, diagnostic, procedural and administrative information across Canada. Canada's health care system includes government-funded universal public provision of physician and hospital services and the absence of co-payments and other patient charges. Multivariable analysis was performed with generalized estimating equations to account for clustering of observations at institutions. **Outcome measures:** The primary endpoint was risk-adjusted 7-day mortality and mortality at discharge. Secondary end-points included ICU admissions, medical complications, and length of hospital stay. **Results:** Overall 25,228 patients with ischemic stroke were included in the analysis. Lower socioeconomic status was associated with admission to non-teaching, low volume hospitals, more medical complications, and poor stroke outcomes. Mortality at 7 days was 8.4%, 8.2%, 7.7%, 7.1, and 6.6% (p=0.002) for income quintiles 1 (lowest), 2, 3, 4, and 5 (highest) respectively. Low-income patients admitted to low-volume hospitals had a higher risk-adjusted stroke mortality when compared to high-income patients admitted to high-volume hospitals (7.8% versus 6.2% at 7 days, p<001; 15.2% versus 12.5% discharge mortality, p<0.001) and this was true even after adjustment for multiple prognostic factors. A stratified analysis comparing large academic vs. equally sized non-academic (facilities with greater than 200 stroke admissions per year) showed no significant differences in stroke mortality (12.2 vs. 13%, p=0.12). In contrast, the analysis comparing facility volume in academic institutions showed a significant incremental mortality rate (12% in teaching/high-volume vs. 23% in teaching/low volume, p<0.001) by hospital volume. These results suggest that among other factors, low-socioeconomic status and hospital-volume (rather than rural location or teaching status) are major determinants of stroke mortality. In the multivariable analysis, after adjusting for age, sex, comorbid conditions and other covariates, low-income patients seen at low-volume facilities had higher mortality rates than other combination groups (high-income/high volume, high-income/low-volume and low-income/high volume). **Conclusions:** Low-income patients presenting with an acute stroke are more likely to be seen in low-volume facilities. This subgroup of patients had higher risk adjusted mortality than other groups. Understanding the pathways through which socioeconomic status affects health care may lead to strategies for quality improvement.

P1233

Aortic insufficiency and ventricular septal defect – Analysis of surgical treatment

L. Simões[1], AF Malheiros[1], J Caliani[1], LC Arongaus[1], F Gurgel[1], F Lino[1], JAT Marinho[1], CC Assef[1], PR Travancas[1], W Peixoto[1]. [1]*NATIONAL HEART INSTITUTE (RIO DE JANEIRO) - BRAZILIAN HEALTH INSTITUTE*

Objectives: The incidence of aortic regurgitation (AR) is reported to be 5,5 – 9,4% of patients with perimembranous ventricular septal defect (VSD) but there are few data avaiable about the evolution of AR in perimembranous VSD. The progressive nature of this lesion is well illustrated by the finding of Otterstad and colleagues (Acta Med Scand 1986; 219(suppl 708):1–39), and there is also an increased risk of endocarditis. The purpouse of this review is to describe the presence of aortic cusp prolapse (ACP), the clinical and echocardiografic findings, the surgical approches and results of surgery in patients treated in our institution with VSD and AR. **Design:** Retrospective study. **Setting:**Tertiary referral centre for paediatric cardiac care. **Methods:** Review of Doppler echocardiograms of 319 patients with VSD who had surgical indication in the last five years. In 36 patients AR was present. **Results:** The incidence of 11,3% de AR was observed in the patients with VSD who had surgical indication. The majority (91,5%) had perimembranous VSD. The median age of onset of AR was 5 years and 3 months. 50,5% of the patients had mild AR, 32,5% had mild to moderate AR and 17,2% had severe AR. Cusp prolapse was seen in 83,3%, with predominance of the right coronary cusp. The surgery was performed in 60% of the patients, with aortic valvoplasty in 42,85%. In 66%, the AR reduced after the surgery. **Conclusion:** The best opportunity to prevent progressive aortic regurgitation may well be early in the course of this complication, but the optimal timing of surgical intervention in this subgroup of patients with VSD remains to be defined in long term follow up studies. In our experience aortic valvoplasty reduced de AR on the time of surgery for VSD closure in the most of patients, with better results in the group with moderate AR.

P1234

Heart failure in a public universitary hospital in Argentina. Causes of acute decompensation.

V. Volberg[1], A. Pesantes[1], O. Grosso[1], J. Lerman[1], C. Berensztein[1], D. Pineiro[1]. [1]*UNIVERSIDAD DE BUENOS AIRES, ARGENTINA*

Aim. To asses the causes of acute decompensation of heart failure in a population hospitalized in a public universitary hospital in Argentina. **Population and methods.** We evaluate retrospectively a randomized sample of records of 108 in-patients admitted for heart failure between years 2001 and 2006. **Results.** The median of age was 89 years (rank 55–101), 75 % were women. The causes of decompensation were (it could be more than one per patient):

Infections	59 %
Incomplete treatment	38 %
Progression structural cardiac disease	31 %
Treatment abandon/Alimentary transgression	19 %
Arrhythmias	17 %
Hypertension	12 %
Anemia	7 %
Acute ischemic syndromes	6 %
Pulmonary embolism	1 %

Conclusion. Most patients admitted in a public universitary hospital in Argentina for HF had decompensation attributable to preventable or controllable causes.

P1235

Primary Percutaneous Coronary Intervention. A comparative analisys according to Infarct localization in a General Hospital

MANUEL Nicolas Cano[1], DINALDO Cavalcanti Oliveira[2], ANDRÉS Sanches Esteva[3], SILVIA Judith Fortunato De Cano[4], CLEBER Do Lago Mazzaro[5], EDUARDO Jaccoud[6], IGOR Alexander[7], MARIA Cristina Ferrari[8], PEDRO Augusto Abujamra[9], FLAVIO Antonio De Oliveira Borelli[10]. *[1]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [2]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [3]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [4]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [5]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [6]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [7]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [8]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [9]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP [10]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular. – Santo André – SP*

Background: Risk stratification of patients with acute myocardial infarction (AMI) contributes to an adequate selection of treatment, and as a consequence, to better outcomes. The electrocardiogram (ECG) has an important role in this evaluation, helping in the diagnosis of localization and extension of infarction. It is accepted that primary percutaneous coronary intervention (PCI) results in better clinical results, diminishing morbi-mortality in patients with acute myocardial infarction. **Objectives:** We aimed to compare the clinical evolution of patients suffering anterior infarction versus patients with no-anterior infarction, treated with Primary PCI in a General Hospital. **Methods:** From July 2001 to September 2006, 222 consecutive patients were submitted to Primary PCI. The patients were divided in two groups, according to ECG localization of AMI. Group one (Anterior AMI) included 106(67 men) patients with ST segment elevation in anterior precordial leads. Group two (No-Anterior AMI) included 116 (92 men) patients with ST segment elevation in any other leads except anterior precordials. The clinical evaluation included events at 30 days and one year of follow-up: death, AMI, Stroke, new PCI and/ or revascularization surgery (CABG). **Results:** The table below shows the results comparing the variables in the two groups at 30 days and one year of follow-up.

Variables 30 days follow-up	Anterior (n=106)	No-Anterior (n=116)	p
Age	60.5 ± 12.1	58 ± 12.9	0.01
Diabetes mellitus	24 (22.6%)	23 (19.8%)	0.6
30 days events	Anterior (n=106)	No- Anterior (n=116)	p
Death	05 (4.7%)	05 (4.3%)	0.8
AMI	01 (0.9%)	02 (1.7%)	0.9
Stroke	01 (0.9%)	01 (0.8%)	0.5

1 year events	Anterior (n=101)	No-Anterior (n=111)	p
Death	07 (6.9%)	08 (7.2%)	0.8
AMI	02 (1.9%)	06 (5.4%)	0.3
Stroke	01 (0.9%)	03 (2.7%)	0.6
New PCI *	9 (8.9%)	8 (7.2%)	0.9
New CABG *	0	0	0.8

* for new target lesion revascularization.

Conclusion: There were older patients in group one as compared to group two and in the clinical follow-up there were no significant differences at the end of 30 days and one year as regard events in both groups. Risk stratification according to ECG localization of AMI (anterior Vs No-anterior) did not identify which patient was at higher risk for developing a clinical event.

P1236

CLINICAL AND ECHOCARDIOGRAPHYCAL FOLLOW-UP AFTER ONE YEAR IN PATIENTS WHO UNDERWENT MITRAL VALVULOPLASTY WITH DOUBLE-BALLOON TECHNIQUE FOR SEVERE MITRAL STENOSIS

S. Sandoval-Navarrete[1], G. Llamas-Esperon[1], R. Muñoz-Sandoval[1], S. Varela Ortiz[1], A. Rosas Cabral[2], F.J. Serna Vela[1], M.L. Fuantos Delgado[1], U.T. Casas Juarez[1], A. Zamora Muciño[1], J. Albarran Dominguez[1]. *[1]HOSPITAL CARDIOLOGICA AGUASCALIENTES [2]UNIVERSIDAD AUTONOMA DE AGUASCALIENTES*

Objective: To present the clinical and echocardiographycal follow-up of patients who underwent mitral valvuloplasty with double-balloon technique in our hospital. **Methods:** We compared the clinical and echocardiographycal evolution 24 hours before the valvuloplasty and one year after the procedure. A total of twenty patients underwent mitral valvuloplasty with multitrack monorail balloon system (double-balloon technique), from December 2003 to December 2006, at Hospital Cardiologica Aguascalientes. **Results:** 20 patients were analyzed for severe mitral stenosis, in which a mitral valvuloplasty with doble-balloon technique was done, and documented clinically and with an echocardiogram. Six patients (30%) were in class II of the NYHA Classification, 13 (65%) were in class III, and one patient (5%) in class IV. Twenty-four hours after the procedure, 18 patients (90%) were in class I of the NYHA Classification, and 2 (10%) were in class II. One year after the procedure 18 (90%) patients remained in class I, and 2 (10%) in class II. All twenty patients had severe mitral stenosis by echocardiogram, with a mitral valve area of 0.5 to 0.9 cm2, average of 0.78 ± 0.13 cm2, the transvalvular gradient was 14 mmHg to 19 mmHg, average of 15.55 ± 1.50 mmHg. Twenty-four hours after the procedure the valve area was 1.4 to 1.9 cm2, average 1.66 ± 0.19 cm2, $p \leq 0.000$; the transvalvular gradient was 2 to 4 mmHg, average 2.85 ± 0.67 mmHg, $p \leq 0.000$. One year after the procedure, the valve area was 1.3 to 1.9 cm2, average 1.61 ± 0.19 cm2, $p \leq 0.000$. The gradient was 2 to 5 mmHg, average 3.10 ± 0.96 mmHg, $p \leq 0.000$. **Conclusions:** The follow-up done to patients with severe mitral stenosis that underwent valvuloplasty with doble-balloon technique, showed clinical and echocardiographycal improvement in the mitral valve area, left atrial diameter, transmitral gradient and the pulmonary artery pressure.

P1237

The prevalence of risk factors for cardiovascular disease in university hospital

T. Paes[1], D. Orlandi[1], F. Gazoni[1], H. Guimaraes[1], L. Vendrame[1], R. Lopes[1], A. C. Lopes[1]. *[1]Sao Paulo Federal University*

Introduction:: The cardiovascular diseases (CVD) are the most prevalent causes of mortality in Brazil. Most patients admitted to the hospital don't know the risk factors for cardiovascular disease. **Objectives:** To evaluate the prevalence of risk factors for cardiovascular disease in university hospital **Methodology:** Transversal study using a protocol form asking about consume of fruits, vegetables and alcohol, use of tobacco, history of hypertension, diabetes, dyslipidemia, and a knownhistory of cardiovascular disease. **Results:** One hundred fifty four patients were studied, from 18 to 80 years old (mean: 56.7 years). The prevalence of risk factors was: 59.7% to hypertension, 20.7% to diabetes, 23.3% to dyslipidemia, 24% to use of tobacco. 32.4% had depressive symptoms and 29.2% had abdominal obesity, according to body mass index 28.5% were overweight. The waist-hip index was high among 66.8% of the patients. The protective factors found were: daily consume of fruits and vegetables (57.8%) and daily exercise (23.3%) **Conclusion:** The risk factors for cardiovascular disease had a high prevalence in the study population. Identifying and evaluating risk factors and protective behavior are essential methods to manage and prevent cardiovascular complications.

P1238

Ability of aortic atheromas to predict coronary and cerebral events.

H. Deschle[1,2], A. Salazar[1,2], M. Fernandez[1], R. Pissinis[1], P. Carrascosa[1], J. Carrascosa[1]. *[1]DIAGNOSTICO MAIPU [2]DISTRITO CONURBANO NORTE SAC*

Objective: The aortic atheromas are considered atherosclerotic disease markers. The aim of this study was to evaluate prospectively the risk of cerebral and/or coronary events according to the size and severity of aortic atheromas. **Methods:** One hundred and nineteen consecutive ambulatory patients (p) were included in this observational-prospective study. The p were referred for transesophageal echocardiography due to different reasons. A 5 MHz multiplane transducer was utilized. Age, gender, the indications for TEE, previous stroke, classical risk factors [diabetes (DBT), smoking, hypertension (HBP), hypercholesterolemia, coronary disease (CHD)] and presence of atrial fibrillation were registered. Aortic arch and ascending and descending aorta were examined. The findings were divided into: a) atheromas protruding 4 mm or more and/or with ulcerated lesions or thrombus (p=44) and b) normal aorta or simple ateromas protruding less than 4 mm (p=75). The mean follow-up period was 681 days (211–1012). One hundred and three patients or their relatives (86.55%) were contacted by phone and asked about cardiovascular death, stroke, myocardial infarction, need of revascularization and unstable angina. A multivariate analysis was performed. For quantitative variables the student T test was used. Kapplan Meier event-free survival curve after 1012 days was carried out. **Results:** Mean age was 64.82+-10.91. Seventy four p were male. Twelve p (11.65%) had events during follow-up period. Table 1 shows characteristics of the population and prevalence of risk factor and group b aortic lesions. 67 % of patients in group a and 83 % in group b were event-free at end of follow-up period. Multivariate analysis showed that atheromas protruding 4 mm or more and/or with ulcerated lesions or thrombus independently predicted combined cerebral or coronary events. (OR 6.04, 95% IC 1.27–28.58 $p<0.05$). **Conclusions:** Atheromas protruding 4 mm or more and/or with ulcerated lesions or thrombus found through transesophageal echocardiography predict future cerebral or coronary events.

TABLE 1

	Age	Male	Group a atheromas	Previous Stroke	CHD
Without events (n=91)	65,96±10,8	57 (62,6%)	30 (33%)	31 (34,1%)	10 (11%)
With events (n=12)	67,42±7,29	8 (66,7%)	8 (66,7%)	4 (33,3%)	4 (33,3%)
	DBT	HBP	Hypercholesterolemia	Current smokers	AF
Without events (n=91)	17 (18,7%)	47 (51,6%)	32 (35,2%)	19 (20,9%)	12 (13,2%)
With events (n=12)	0 (0%)	8 (66,7%)	2 (16,7%)	2 (16,7%)	4 (33%)

P1239

Does Myocardial Perfusion Scintigraphy Help in the Definition of Therapy to Assymptomatic Patients with Myocardial Ischemia?

C. Zukowski[1], R Leite[2], C Albertini[3], R Kanthack[4], R Lopes[5], M Oliveira[6], F Alves[7], P Smanio[8]. *[1]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [2]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [3]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [4]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [5]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [6]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [7]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA [8]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA*

Background: The relationship between the amount of inducible ischemia present on stress myocardial perfusion Sintigraphy (MPS) and the present of cardiac events (CE) have already been established. However, the importance of MPS helping in the definition of therapy in assymptomatic patients (p) with myocardial ischemia in the MPS is still not clearly defined. **Objectives:** To verify if p without typical chest pain and with ischemia in the MPS have better evolution when are clinically treated or when are submitted to revascularization (RV). To

evaluate which clinical-epidemiological characteristics are associated with CE in the follow up period of 18 months. **Methods:** Between 01/2006 and 09/2007 15.002 p performed MPS with 99mTc-MIBI by gated-SPECT technique and 2 days standard protocol. From the total, 201 p were included because they had no typical chest pain. There were 63% male, 88% had hypertension, 74% hyperlipemia, 36% diabetes, 26% was tobacco user, 22% had positive familiar history, 22% had dyspnea or any other symptom (no chest pain); 80% had known CAD; 6,5% had peripheral vascular disease and 9% chronic renal disease. The statistical analysis was performed using chi-square, independent T and Fisher's exact tests and it was considered significant a p value $<$0,05. **Results:** Even without chest pain, 80% had ischemia on the MPS (48% moderate to severe), p=0,001. Because of the lack of chest pain from the group of p with ischemia, only 12% had RV procedures in a mean follow up time of 18 months (p=0,001) although 3% had AMI and 2,5% death. **Conclusions:** The obtained results may suggest a high prevalence of ischemia in high pretest likelihood even without typical chest pain. The majority of patients without typical chest pain even after ischemic MPS were kept in clinical treatment. Maybe it was a group of p that in which should be considered RV as 5,5% presented major CE in a mean follow up of 18 months.

P1240

Obstetrical and clinical factors related to the mode of delivery in pregnant women with heart disease

M.R.F.L. Bortolotto[1], M Zugaib[1]. [1]*Depto. de Obstetrícia, Hospital das Clínicas, FMUSP*

This study reviewed the data of 571 pregnancies in 556 pregnant women with heart disease admitted for delivery in a tertiary university hospital between 2001 and 2005. The objectives were to assess the prevalence of cesarean sections and vaginal births among the whole group of cases and in three subgroups: patients with arrhythmias (A – 57 cases / 10%), congenital diseases (CD – 163 cases / 28,6%) and acquired diseases (AD – 351 cases / 61,4%), and to determine the clinical and obstetrical factors related to the mode of delivery in the whole population and in the subgroups, as well as the association between the mode of delivery and clinical and obstetrical complications. The frequencies of cesarean sections were: 57,2% (whole population), 45,6% (A), 64,2% (CD) and 55,7% (AD); the cesarean sections were performed due to obstetrical reasons in 77% of the cases. In the 425 cases with no previous cesarean sections, the frequencies of c-sections deliveries were 47,1% (whole group), 37,8% (A), 57,8% (CD) and 43,3% (AD). The factors related to a higher probability of cesarean section were: previous cesarean section, gestational age at delivery of less than 37 weeks, presence of obstetrical events, diagnosis of congenital heart disease, heart failure (NYHA functional class III/IV) and use of cardiovascular drugs. The parity above 1 was related to a lesser probability of c-sections, and previous cesarean was the main factor related to the risk of abdominal delivery. In the cases with no previous cesarean sections, according to the subgroups of heart disease, the probability of cesarean section was heightened in the presence of the following factors: group A: use of cardiovascular drugs, CD: functional class III/IV and obstetrical events and AD: obstetrical events and gestational age in delivery less than 37 weeks. The rate of obstetrical complications was 6,8%, most of them in group A and in vaginal birth. Major clinical complications occurred in 2,5% of the cases (3 maternal deaths-0.5%), and were more related to cesarean sections (3,8%). **Conclusion:** the rates of cesarean sections observed in pregnant women with heart disease were high (mainly in the CD group), and related to previous cesarean sections, heart failure, use of cardiovascular drugs, presence of obstetrical events and gestational age at delivery less than 37 weeks.

P1241

ISCHEMIA ON RIGHT CORONARY TERRITORY DEMOSTRATED BY MYOCARDIAL PERFUSION SPECT, CONDITIONED BY A UNIQUE LEFT CORONARY ARTERY, CORROBORATED BY CORONARY CT SCAN AND CORONARY ANGIOGRAPHY

S. Sandoval-Navarrete[1], G. Llamas-Esperon[1], R. Muñoz-Sandoval[1], S. Varela Ortiz[1], A. Loera Pinales[1], E. Sandoval Rodriguez[1], M.L. Fuantos Delgado[1], U.T. Casas Juarez[1], J. Albarran Dominguez[1]. [1]*HOSPITAL CARDIOLOGICA AGUASCALIENTES*

Objective: To present the case of one patient in whom we found ischemia in the lower region and after that found a unique left coronary artery which conditions the ischemia. **Methods:** 58 year-old male patient, with family background of coronary artery disease, smokes 8 cigarrettes per day, non hypertensive or diabetic. The patient arrives with oppressive chest pain, diaphoresis, dyspnea, and fading sensation. The EKG had ST rectification and T wave inversions on the lower region; exercise tolerance test was positive to ischemia on the lower region; echocardiogram with LVEF of 67%, adequate mobility, pulmonary artery pressure of 32 mmHg; perfusion SPECT with mild ischemia in the lower region, right ventricle dilatation, and normal systolic function of the left ventricle. Due to these findings we decided to do a coronary CT Scan and a coronary angiography with the following results. **Results:** Coronary CT Scan: showed a unique left coronary artery, from the circumflex artery originated the descending posterior artery and gave off what would correspond to the right coronary artery. Coronary angiography: unique left coronary artery, diffuse atheromatosis on the proximal third of the descending anterior artery, the circumflex artery gives the descending posterior branch, the aortogram proved the non existence of the right coronary ostium. The patient began beta blockers, and aspirin and four months later remains asymptomatic. **Conclusions:** In this patient we show that an anatomical variant characterized by a unique left coronary artery, conditions myocardial ischemia, and due to the territory, it may condition right ventricle dilatation.

P1242

Fascicular Tachycardia in children and adolescents: Important aspects for tachyarrhythmia aproach

R. Andalaft[1], D. Moreira[1], R. Habib[1], L. Moraes[1], K. Tukamoto[1], G. Bellini[1], R. Hams[1], V. Cerutti[1], A. Guimaraes[1], M. Juliano[1]. [1]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA - BRAZIL*

Background: Ventricular tachycardia is uncommon in the absence of heart disease. Narrow complex tachycardia most often represent supraventricular tachycardia, however ventricular tachycardia may not always be presented as wide complex rhythm on ECG. **Objectives:** Describe clinical and electrocardiographic aspects of three children and two adolescents with fascicular tachycardia. **Patients:** Five healthy patients aged between 9 days and 18 years-old with a relatively narrow complex tachycardia with RBB block with LA axis deviation. Case 1 – Twenty three month-old white boy came to ER with syncope and tachycardia. He was DC cardioverted and treated with p.o amiodarone, verapamil and propranolol. He has remained assymptomatic for 18 months. Case 2 – Nineteen month-old white girl presented to ER with an hemodynamically stable tachycardia. She received adenosine intravenously followed by p.o amiodarone, procainamide, verapamil and phenytoin without any response. The patient underwent RF ablation unsuccessfully and died after 1 month.. Case 3 – Nine day-old white girl presented to ER with cyanosis and tachycardia. She received ventilatory support and i.v amiodarone with tachycardia interruption and remained in sinus rhythm. Case 4 – Eighteen years-old white female presented to ER with an hemodynamically stable tachycardia. She received i.v adenosine without any response. Verapamil termined the tachycardia and she remained assymptomatic using p.o verapamil in the last 12 months. Case 5- Fourteen years-old white male presented to ER with tachycardia. He received adenosine and amiodarone without any response. Verapamil termined the tachycardia. The patient remained assymptomatic using verapamil in the last 2 years. **Conclusion:** 1- Fascicular tachycardia can be fatal in children; 2- Treatment with conventional antiarrhythmic therapy may fail; 3- In children RF ablation will be reserved to critical cases.

P1243

BEHAVIOR OF THE ATRIOVENTRICULAR PRE-EXCITATION DURING AN EXERCISE TESTING

M. C. Thomazi[1], C.A. Hossri[1–2], N. Scarin[1], R. Meneghelo[1]. [1]*INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA, SAO PAULO, BRASIL* [2]*HOSPITAL DO CORAÉAO, SAO PAULO, BRASIL*

Background: The management of patients with asymptomatic ventricular pre-excitation (Wolff-Parkinson-White pattern on electrocardiogram) is a common practice for the general cardiologist. Although it has an established prevalence in international literature, the behavior of the atrioventricular (AV) conduction during the exercise and its association to the localization of accessory pathway, need more studies. **Objective:** To analyse the response of ventricular pre-excitation during an exercise test, according to its prevalence, localization of the anomalous pathway, and the behavior of the atrioventricular conduction during the exercise. **Method:** Patients submitted to an exercise test in a treadmill, between the years of 1993 to 2007, with known pre-excitation or documented during the exam, were included in this study. Atrioventricular conduction and the localization of the accessory pathway, according to Milstein's electrocardiographic algorithm, were analysed. **Results:** The prevalence of Wolff-Parkinson-White pattern on electrocardiogram found in our population was about 0.2%. The localization of the accessory pathway were the following - left ventricular free wall: twelve patients (28%), right ventricular free wall: 9 patients (21%), posteroseptal: twelve patients (28%) and anteroseptal: ten patients (23%). The behavior of the AV conduction during the exercise was the following: a steady conduction through the accessory pathway during the test happened in twenty subjects (47%), thirteen patients (30%) showed intermittent conduction through the accessory pathway, seven patients (16%) had disappearance of the conduction through the anomalous pathway during the exercise, and three patients (7%) had appearance of conduction through the accessory pathway during the exercise. **Conclusion:** The exercise test is an important instrument to evaluate patients with asymptomatic ventricular pre-excitation (Wolff-Parkinson-White pattern on electrocardiogram). It shows additional information about the behavior of the accessory pathway during the exercise that helps us to stratify the risk of sudden death on these subjects.

P1244

LIPID PROFILE RESPONSE TO RESISTED PHYSICAL EXERCISE PROGRAM IN TYPE 2 DIABETICS

E. Fernandes[1], A. L. A. Branquinho[1], S. M. R. Castro[1], V. A. Leite[1], B. V. França[1], A.L.R.M. Freitas[1], L. C. Silva[1]. [1]*University of Brasília - UnB, Brazil*

Introduction: Diabetics present an atherogenic lipid profile which constitutes an important risk factor for atherosclerotic disease development. Aerobic exercises reduce triglycerides serum levels and favorably affects HDL levels. However, the influence on LDL plasmatic level is still controversial. Resisted physical exercises could produce similar effects in this group of patients. **Objective:** To evaluate if resisted physical exercises during 12 weeks improve lipid profile in type 2 diabetics. **Methods:** In this study of series of cases, 11 type 2 diabetics (9 men, mean age = 59±10 years), diagnosed for 5,6±2 years, and presenting no clinical or laboratorial complications were invited to participate on an institutional educational program "PROAFIDI" developed at the University of Brasília. They were submitted to individualized training with resisted exercises for 12 weeks, including a frequency of 12 to 15 repetitions of the exercises: leg press, supine, pull and squatting, with one minute interval between each series, during around 45 minutes, 3 times a week. Laboratorial exams were collected before and after the training period. During the study all patients received nutritional orientation. The statistical analysis was carried on by using the package SPSS v.12, accepting a value of p $<$

0.05 as statistically significant. **Results:** There was a significant increase (p=0.013) on physical strength, considering the measure in Joules. The basal lipids levels were: triglycerides = 141.2±61.8; HDL = 40.1±9.5; LDL = 101.8±25.8; and VLDL = 29.2±16.5 mg/dL. After the training period, the lipids measures were: triglycerides = 125.8±55.6; HDL = 43.3±8.5; LDL = 87.4±24.1; and VLDL = 26.8±11.2 mg/dL. P values were as follows: 0.46; 0.07; 0.08 e 0.68, respectively. **Conclusions:** This 12 weeks resisted physical exercises program could not significantly improve the lipid profile of these type 2 diabetics, although the HDL and LDL values tended to significance.

P1245

Planimetric determination of left ventricular outflow tract: diagnostic importance on prosthesis patient mismatch

E Castro[1], M Cavazzi[1], A Curcio[1], G Converso, J Quiroga[1], S Chekerdemian[1]. [1]*Hospital Churruca*

Background Obstructive aortic prosthetic valves (effective orifice area [EOA] < 0.85 cm2/m2) may increase operative mortality and impair functional recovery after aortic valve replacement (AVR). One key factor in the estimation of the EOA is the left ventricular outflow tract area (LVOT). **Objetive** The aim of this study was to compare the diagnosis of prosthesis patient mismatch (PPM) estimating the EOA with the continuity equation using the LVOT area determined by the circle formula versus the LVOT planimetry by bidimensional echo. **Methods** Twenty six patients with AVR, mean age 65 ± 12.9 years, 80.8% males, were prospectively studied 6 or more month after surgery. Of these, 69.2% were mechanical valves and 76% >21 in size. Bidimensional echo was used to estimate the LVOT area by calculating a circular area using the LVOT diameter from the 3 chamber view and by planimetry from the short axis view. The time-velocity integrals, the peak and mean gradients of the LVOT and prosthetic aortic valve were mesured with Doppler from the 5 chamber view. We used the continuity equation to calculate the prosthetic aortic area indexed by body surface area, and a modified continuity equation using the LVOT area by planimetry. Simpson's rule was applied to estimate ejection fraction. We defined PPM when EOA < 0.85 cm2/m2. The Wilcoxon Signed rank Test for nonparametric variables and the Binomial test for percentages were used. The Spearman Rank Correlation (rs) was used to relate gradients and EOA. **Results** The planimetric EOA ranged from 0.43 to 1.93 cm2/m2 (median 0.86) and the circular EOA ranged from 0.23 to 1.06 cm2/m2 (median 0.50) p < 0.001. The peak and mean gradients and the ejection fraction were 35 mmHg (10.9 – 94.8), 17 mmHg (6.7 – 53.9) and 61.5 % (44 – 72) respectively. Similar moderate but statiscally significative correlations were observed between EOA calculated by the circular and planimetric LVOT areas and the peak and mean gradients. **Conclusion** This study showed that the EOA calculated with the modified continuity equation categorized much less patients as having PPM than the estimated EOA by LVOT circular area. The elliptic shape of the LVOT may underestimate the EOA of the prosthesis and overestimate the diagnosis of prosthesis patient mismatch.

		EOA circular	EOA planimetry	P
PPM	%	92.3	46.2	< 0.001
Peak gradient	r_s	0.63*	0.59*	*< 0.001
Mean gradient	r_s	0.63*	0.63*	*< 0.001

P1246

CASE FATALITY IN CORONARY ARTERY BYPASS GRAFT ALONG THE FIRST YEAR AFTER HOSPITAL DISCHARGE IN RIO DE JANEIRO STATE, 1999 TO 2003

P. Godoy[1], N. A. Souza E Silva[1], G. M. M Oliveira[1], C. H Klein[2]. [1]*FEDERAL UNIVERSITY OF RIO DE JANEIRO* [2]*PUBLIC HEALTH NATIONAL SCHOOL*

Objective: To estimate case fatality and identify death causes related to the circulatory system and diabetes and those death causes concerned to the procedures (ApCDMC), from the internment moment to one year later after hospital discharge, in the patients who underwent coronary artery bypass graft (CABG) and financially supported by the Brazilian Unified National Health System (SUS) in Rio de Janeiro State (ERJ) from 1999 to 2003. **Methodology:** CABG data were obtained from the State Health Department's database on Authorizations for Hospital Admissions (AIH) and on Death Certificates. The database probabilistic correlation used to identify individuals that died after a procedure was performed by using RecLink® in order to identify those individuals that died after CABG. Surgeries with valve replacement were excluded from the analysis. Four periods of time were considered as follows: in-hospital, up to 30 days, 31 to 180 days and 181 to 365 days after hospital discharge. Three age ranges were under analysis: 20 to 49 years-old, 50−69 years-old and ≥70 years-old. Death percentiles and mortality rates under ApCDMC by period of time, age, gender and hospital, were estimated. **Results:** There were 5180 patients who went through CABG and 675 pairs of individuals that died along one year after hospital discharge. The in-hospital case fatality was equal to 8.0%, according to the AIH. The case fatality rate accumulated during the periods 0−30 days, 31–180 days, 181–365 days after hospital discharge were 10.2%, 11.9%, and 13%, respectively. About 89% of deaths had as their basic causes ApCDMC diseases. The percentile of these causes was 96.4% during in-hospital, 84.7 up to the first 30 days, 70.9% in 31 to 180 days and 74.4% in 181 to 365 days after hospital discharge. **Conclusion:** The in-hospital fatality rates in CABG performed under SUS financial support were high and were similar to those verified in other studies with the same Brazilian databases. These rates remained high following one year after hospital discharge. There was a higher correlation of causes by ApCDMC in women in more distant periods from the procedure, while men died more precociously by these causes.

P1247

Amiodarone as a good intervention for patients with heart failure and ventricular arrhythmias

LP Leopoldo Piegas[1], AA Alvaro Avezum, AG Aloyra Guimaraes, IS Italo Santos, HG Hélio Guimaraes, HR Helder Reis, ES Elizabeth Santos, AM A. Muniz.

Objectives Registers permit to evaluate the daily clinical practice apart of randomized trials scenarios. Patients with acute coronary syndrome that evolving with heart failure and ventricular arrhythmias had the worst prognostic and frequently present cardiac arrest during hospitalization. Although some randomized trials failed to demonstrate the amiodarone's beneffit in this scenario, this drug is a therapeutic option commonly used that need to be analyzed in clinical practice. **Methods:** Data were analyzed from 2540 patients enrolled in a registry of acute coronary syndromes in Brazil from January 2004 to January 2007. Nowadays, there are 27 investigator sites in the 5 different regions of the country. The case reports have been collected with on line forms. Our analysis only included patients whose data about use of anti-arrhythmics drugs were available and that evolved with heart failure and ventricular arrhythmias. **Results:** A total of 228 patients had presented with ventricular arrhythmia needing some treatment, but only 101 had heart failure, ventricular arrhythmias and available data about amiodarone use. The outcomes analysed were cardiac arrest and mortality at hospitalization. Patients treated with amiodarone had less cardiac arrest (table 1 - patients treated x not treated: 63% x 39,5 %, p:0,039) but the mortality was not statistically different between the two groups (table 2- patients treated x not treated:48,3% x 34,9%, p:0,178). **Conclusion** In the setting of acute coronary syndrome, ventricular arrhythmia and heart failure can be considered as risk factors for mortality and cardiac arrest. The use of amiodarone for this patients could be an important approach to reduce the fatality of the cardiac arrest. In our results, the only clinicaly and statistically difference detected were the Recuperation Of Spontaneous Circulation, in favor of amiodarone. Although there were less death (in %) among patients treated with amiodarone, this was not statistically significant. Some limitations could reduce the power to detect a more significant difference. First, this is a register, and all the results can be interpreted as a clinical practice documentation. This data only suggest amiodarone as a potential intervention to reduce mortality and cardiac arrest among patients presented with acute coronary syndrome, ventricular arrhythmias and heart failure. But our sample were so small to detect little but significant reduction in mortality. Our result rise the possibility to use amiodarone as a good interventions for this patients, for whose more studies and/or registries addressed to the same question need to be done.

TABLE 1. CARDIAC ARREST IN PATIENTS WITH HEART FAILURE AND VENTRICULAR ARRHYTHMIAS TREATED WITH OR WITHOUT AMIODARONE

	No		Yes	
Cardiac Arrest	Number of patients	%	Number of patients	%
Amiodarone				
No	17	39.5	26	60.5%
Yes	35	60.3	23	39.7

P=0.39

TABLE 2. DEATH IN PATIENTS WITH HEART FAILURE AND VENTRICULAR ARRHYTHMIAS TREATED WITH OR WITHOUT AMIODARONE.

	No		Yes	
Death	Number of patients	%	Number of patients	%
Amiodarone				
No	15	34.9	28	65.1
Yes	28	48.3	30	51.7

P = 0.178

P1248

Absence Of Correlation Between The Anthropometric Variables And Blood Pressure In Hypertensive Obese Subjects Submitted To An Exercise Physical Program

C.F. Panigas[1], T. Dipp[1], T.F. Panigas[1], K.C. Belli[1], D.C. Bündchen[1], C.M. Richter[1], J.L.C. Pippi[1], P.R.N. Viecili[1–2]. [1]*Cruz Alta Heart Institute - ICCA* [2]*Cruz Alta University - UNICRUZ*

Background: Generally, obese subjects develop hypertensive blood pressure (HBP), along with other diseases, what makes us to believe that there is some correlation between these two diseases. Therefore, through exercise physical program (EPP) for the treatment of the obesity, it can also simultaneously be treated HBP, based on a relationship cause-effect. **Objective:** Analyze the correlation between anthropometric measuring and blood pressure (BP) in hypertensive obese subjects submitted to an EPP. **Methodos:** 77 hypertensive obese subjets were randomized (58 ± 11 years) in experimental group (EG) with 40 individuals that performed EPP and control group (CG) that kept their sedentary lifestyle (n=37). EG performed 40 minutes of aerobic exercise prescribed with 65% of maximal oxygen consumption and resistant exercises, three times a week during three months. Systolic and diastolic blood pressure (SBP/DBP) were measured at rest before starting each session of EPP. Body weight (kg), abdominal circumference (AC:cm) and body mass index (BMI:kg/m2) were measured monthly. Correlation between anthropometric measuring and systolic and diastolic BP were made. Data were expressed by mean ±SD, Student t test to verify differences between measuring before and after EPP; Pearson correlation was used to verify the effect-cause correlation between variables; p ≤ 0.05 was considerate significant. **Results:** No diferrence was inspected in BP and anthropometric measuring in CG. In EG, body weight (87.7 ± 11.5 x 86.3 ± 11.8; p=0.005) and BMI (33.28 ± 2.14 x 32.61 ± 2.19; p<0.001) had a consequently and significantly reduce, AC did not present difference. There were significant difference in SBP (145.8 ± 17.9 X 130.4± 10.3 mmHg; p=0.0005; ?15.6 mmHg) and DBP (90.0 ± 12.2 X 79.6 ± 7.9; p=0.0002; ?10.4 mmHg) after EPP. There were no correlation between anthropometric variables with sistolic and diastolic BP (R:0,1). EPP shown very efficient as non-pharmacological treatment for hypertension, however not so effective for reduction of the weight. **Conclusion:** In

spite of a discret but significant decrease, of anthropometric measures, this did not contribute to the decrease of the pressure levels, physical exercise can possibly present different and independent effects in the treatment for hypertensive and obese subjects.

P1249

Influence of depressive symptoms on the parameters of left ventricular function during ergometric test

J. Tripolone[1], GA Santiago[2], JM Tripolone[3], P Zuliani[4], M Salguero[5]. [1]*UNIVERSIDAD CATOLICA DE CUYO* [2]*UNIVERSIDAD CATOLICA DE CUYO* [3]*UNIVERSIDAD CATOLICA DE CUYO* [4]*UNIVERSIDAD CATOLICA DE CUYO* [5]*UNIVERSIDAD CATOLICA DE CUYO*

We know that even mild depressive symptoms are an independent risk factor for the development of cardiovascular disease. The reason for this investigation was to assess the impact of depressive symptoms and mood on the left ventricular function during the ergometric test. **Materials and methods:** We studied 325 patients who attended the Heart clinic spontaneously and were divided into 4 groups: G1, 39 normal patients without risk factors; G2, 197 patients with cardiovascular risk factors; G3, 54 patients with ischemic heart disease with or without prior infarction; G4, 30 patients with dilated cardiomyopathy. All patients MADE a BDI test (Beck Depression Inventory), which makes it possible to identify patients with depressive symptoms -even if they are sub-clinical-, and its intensity.. They were divided into 4 categories, following the Frasure-Smith's research work (Circulation 2002, 105:1049–53): 0–4, 5–9, 10–18, over 19. They also answered a State of "MOOD" CUESTIONAIRE: Who said to have a good mood was best qualified (8 or more). The ones who had a neutral mood were placed in five to seven. Those who were found with a pessimistic mood, were qualified <5. (Kusvansky, PsYcosom med 2001). Left ventricular function parameters analyzed in basal and ECHO STRESS WITH ergometric conventional effort: 1-Load achieved, IC (chronotropic index), EF (ejection fraction), VEAM, VENTRICULAR LEFT Acceleration(vLa), ELVI. **Where:** VEAM: (speed in the level of mitral ring during the first third of SYSTOLE) (normal values> 9 cm / s) VLA= (VEAM effort - VEAM basal) / (1/FC effort - 1 / FC basal) x 60 (NORMAL > 12 cm/s2 IN OUER LABORATORY); FC = Heart Frequency. The parameters listed before were described by our group in the 2002 to 2006 Argentine Society of Cardiology Congresses. ELVI (left ventricular elastance) in both states, basal and effort. Statistical Analysis: Spearman Test. Significant Difference for P-values <0.05. **Results:** BDI correlated significantly with the following variables: Load ($p = 0$) EF effort ($p = 0.0196$) IC ($p = 0.0009$) VEAM effort ($p = 0.0035$) BDI not correlated with the following variables: Left Acceleration ($p = 0.3561$) Delta EF ($p = 0.9109$) Delta ELVI ($p = 0.3094$) EDA correlated significantly with the following variables: Load ($p = 0$) EF effort ($p = 0.0211$) IC ($p = 0.0012$) VEAM effort ($p = 0.0004$) EDA did not correlate with the following variables: VLA ($p = 0.2622$) Delta EF ($p = 0.4845$) Delta ELVI ($p = 0.2401$) **Conclusions:** 1- BDI and EDA are parameters that were related in a statistical way with left ventricular function parameters such as reached load and chronotropic index. 2- Due to the described changes, EDA and BDI would have to be implemented routinely in Ergometric laboratories (such as gamma camera, Eco stress, and so on). 3- EDA and BDI questionnaires are easily to implement and MUST BE INCORPORATED WIH THE CONVENTIONAL RISK FACTORS 4– The importance of the left ventricular function deterioration and the predictive power for cardiovascular events should be assessed in future research works.

P1250

CARDIAC HYPERTROPHY AND OXIDATIVE STRESS IN RATS TREATED WITH METHIONINE.

R. Sirvente[1], RH. Mendes[2], GO. Candido[1], C. Mostarda[1], L. Jorge[1], A. Belló-Klein[2], K. Rigatto[2,3], MC. Irigoyen[1,2]. [1]*HEART INSTITUTE, MEDICAL SCHOOL UNIVERSITY OF SAO PAULO* [2]*FEDERAL UNIVERSITY OF RIO GRANDE DO SUL* [3]*FEDERAL FOUDATION FACULTY OF MEDICAL SCIENCE OF PORTO ALEGRE*

Introduction: Homocysteine (Hcy) is a suphur amino acid in methionine-cysteine metabolism. An elevation in plasma Hcy, hyperhomocysteinemia (HHcy),has been shown to be an independent risk factor for atherosclerosis. Recent reports indicate that, in addition to the atherothrombotic effects, HHcy is related to cardiac hypertrophy and oxidative stress. (CO=0.82±0.03; ME=0.74±0.01%; p<0.001) **Purpose:** The objective was to evaluate the effect of methionine (ME) on cardiac hypertrophy and oxidative stress. **Methods:** Males wistar rats (n=5/group) were treated by gavage for five days a week for 9 weeks. Animals received water (CO) or (ME 0,1g/kg in water). After treatment, left ventricular echocardiography was performed and animals were killed with collection of hearts (stored -80°C) Oxidative stress was evaluated by chemiluminescence (CL) and antioxidant enzyme activities: catalase (CAT) and glutathione peroxidase (GPx) were measured. **Results:** Results showed that Hcy increased body/heart weight index (CO=2.7±0.07; ME=3±0.2mg; p<0.05) and left ventricular mass (CO=1.28±0.04; ME=1.36±0.04 mg; p<0.05) and reduced function as seen by the decrease in left ventricular ejection fraction (CO=0.82±0.03; ME=0.74±0.01%; p<0.001). The treatment was associated with enhanced GPx activity (CO=16±13; ME=37±14nmol/min/mg of protein; p<0.05), and CL (CO=11490±2222; ME=15750±2441 CPS/ mg of protein; p<0.02) and CAT activity (CO=12.2± 13; ME=8.9±12 nmol/mg of protein; p<0.01). **Conclusion:** These results show prominent effects of ME on cardiac function. Cardiac hypertrophy was associated with lipoperoxidation and enhanced antioxidant enzyme activities.

P1251

EFFECT OF CHRONIC ATORVASTATIN THERAPY IN THE MITOCHONDRIAL FUNCTION

P. Monteiro[1], P. Matafome[2], A. Reis[1], S. Monteiro[1], R. Seiça[2], L. Goncalves[1], L. A. Providencia[1]. [1]*Coimbra University Hospital and Medical School* [2]*Physiology Department, Coimbra Medical School*

Introduction: Obese diabetics have more and worse ischemic heart disease; this may be improved by diet and atorvastatin (ATV) therapy. Mitochondria play an important role in cardiac ischemia. If these subjects are submitted to hypocaloric diet and treated with ATV, do they have better mitochondrial function? **Aim:** To evaluate, in a model of diabetes + hypocaloric diet + ischemia-reperfusion (IR), if chronic therapy with ATV improves cardiac mitochondrial function. **Material and methods:** Goto-Kakizaki (GK) diabetic rats (submitted to dietary restriction - DR between 2 and 6 months) were divided in 4 groups (n=10/group): A-GKDR control (no medication/no IR);B–ATV control (ATV 10 mg/kg/day between month 5 and 6/no IR);C–GKDR IR (as GKDR control and then IR);D–ATV IR (as ATV control and then IR). At 6 months, hearts were removed and submitted to 165 min perfusion (control) or 10 min perfusion+35 min ischemia+120 min reperfusion (IR). Mitochondrial parameters assessed were: oxidative stress (colorimetric thiobarbituric acid colourimetry test - TBARS), mitochondrial swelling and calcium uptake (fluorimetry). **Results:** ATV-treated rats had significantly lower oxidative stress levels, both in control (0.69±0.01 vs. 0.81±0.04 nmol TBARS/mg protein; p<0.05) and IR (0.83±0.02 vs. 1.05±0.02 nmol TBARS/mg protein; p<0.05). ATV-treated animals also showed a significant decrease in mitochondrial swelling, both in IR (42.1±2.0 vs. 68.1±1.8 arbitrary units–AU; p<0.05), and in control groups (28.9±2.4UA vs. 37.8±1.3UA;p<0.05). ATV therapy showed a significant improvement in calcium uptake in IR (63.0±2.8 vs. 53.9±0.8 nmol/mg protein; p<0.05). **Conclusions:** In our model of diabetes, diet and IR, ATV improves cardiac mitochondrial function, due to less oxidative stress and better ischemia tolerance (higher calcium uptake and lower mitochondrial swelling).

P1252

MYOCARDIAL PERFUSION SCINTIGRAPHY IN PATIENTS ASSESSED FOR RENAL OR RENOPANCREATIC TRANSPLANTATION.

R. Ferrando[1], M. Lujambio, M. Kapitan, E. Moreira, J. Vilar, R. Hitateguy, C. Lecot, V. Selios, S. Miranda, P. Marichal. [1]*NUCLEAR MEDICINE CENTER. UNIVERSITY HOSPITAL. SCHOOL OF MEDICINE. MONTEVIDEO. URUGUAY*

Introduction: Ischemic heart disease (IHD) is the most frequent cause of death in patients with end-stage renal disease. Evidence supports a particularly accelerated atherogenic process and high prevalence of silent myocardial ischemia in this population. Consequently, non invasive assessment with functional tests to identify the presence and severity of ischemia is mandatory in patients during pre transplant evaluation. **Objectives:** Evaluate the utility of 99mTc-MIBI Myocardial Perfusion Scintigraphy (MPS) to define cardiovascular risk in candidates for renal or renopancreatic transplantation (R-RPT). **Methods:** Clinical, demographic and testing variables were considered in 56 end-stage renal disease candidates for R-RPT during 2002–2007 (age, sex, hypertension, diabetes, dyslipemia, smoking, previous IHD, familiar history of IHD, angina and stress EKG). 44 patients were candidates to RT and 12 to RPT. Exercise (n=18) or dipyridamole (n=36) MPS was performed using a two days protocol. A semi quantitative scoring system was applied as recommended by ASNC using a 17 segment model. Summed stress score (SSS) and summed ischemic scores (SIS) were obtained grading uptake from 0 to 4 to classify patients in low (LR), intermediate (IR) and high risk (HR). **Results:** RPT patients were younger than RT patients (mean age 55,8 vs 36.6 years; p<0.001). 30 were male and 24 female. Only 4 patients presented angina, all of them in the RT group. Hypertension was the most common risk factor in the RT group (68%) and type I diabetes was present in all patients of the RPT group. 6 RT and 1 RPT patients had previous history of IHD. Using SSS, MPS was abnormal (IR n=13, HR n=14) in 27 patients (48.2%; CI95% 35.2–61.2%). Proportion was similar in RT (50%) and RPT (47.7%) groups. Right coronary artery (RCA) disease was the most frequent finding (32% of the patients). SIS were lower than SSS (Wilcoxon signed rank test; p<0.001), supporting the presence of chronic IHD. Exercise or dipyridamole stress testing was abnormal in only 5 patients and had a very limited diagnostic value. The presence or association of major cardiovascular risk factors was unable to predict MPS result in a logistic regression model. **Conclusions:** As clinical, demographic and stress variables are not reliable predictors of cardiovascular risk in patients candidates for R-RPT, functional imaging can play a major roll in their pre surgical evaluation. MPS was able to detect a high incidence of IHD in these patients and classify the risk prior to transplantation. Perfusion changes showed a predominantly chronic asymptomatic IHD (silent ischemia) with very frequent involvement of RCA.

P1253

CASE FATALITY IN PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTIES ALONG THE FIRST YEAR AFTER HOSPITAL DISCHARGE IN RIO DE JANEIRO STATE, 1999 TO 2003

P. Godoy[1], G. M. M. Oliveira[1], N. A. Souza E Silva[1], C. H Klein[2]. [1]*FEDERAL UNIVERSITY OF RIO DE JANEIRO* [2]*PUBLIC HEALTH NATIONAL SCHOOL*

Objective: To estimate case fatality and identify death causes related to the circulatory system and diabetes from the internment moment to one year later after hospital discharge, in patients who underwent percutaneous transluminal coronary angioplasty(PTCA) financially supported by the Brazilian Unified National Health System (SUS) in Rio de Janeiro State (ERJ) from 1999 to 2003. **Methodology:** PTCA data were obtained from the State Health Department's database on Authorizations for Hospital Admissions (AIH) and on Death Certificates. The database probabilistic correlation used to identify individuals that died after PTCA was performed by using RecLink®. Four periods of time were considered as follows: in-hospital, up to 30 days, 31 to 180 days and 181 to 365 days after hospital discharge. Three age ranges were under analysis: 20 to 49 years-old, 50–69 years-old and ≥70 years-old. Death percentiles and mortality rates caused by the circulatory system an diabetes by period of time, age, gender and hospital, were estimated. **Results:** There were 475 patients that died along one year after hospital discharge. The in-hospital case fatalities were equal to 2.2%, according to the AIH. The case fatalities accumulated during the periods 0–30 days, 31–180 days, 181–365 days after hospital discharge were 3.2%, 5.2%, and 6.9, respectively. About 85% of deaths had as their basic causes the circulator system disease and diabetes. The percentile of these causes was 98.4% during in-hospital, 87.1% up to the first 30 days, 74.89% in 31 to 180 days and 73.6% in 181 to 365 days after hospital discharge. **Conclusion:** Observed case fatalities throughout first year were superior to those observed in other studies that followed patients with clinical treatment or PTCA. Death risk to those who underwent PTCA remained high compared with death risk to population with same gender and age.

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Primary Percutaneous Coronary Intervention during the acute fase of Myocardial Infarction. Are there any differences in the late Evolution of Elderly Vs Younger adult patients?

MANUEL Nicolas Cano[1], DINALDO Cavalcanti Oliveira[2], ANDRÉS Sanches Esteva[3], SILVIA Judith Fortunato De Cano[4], CLEBER Lago Mazzaro[5], EDUARDO Jaccoud[6], IGOR Alexander[7], MARIA Cristina Ferrari[8], PEDRO Augusto Abujamra[9], FLAVIO Antonio Oliveira Borelli[10]. *[1]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [2]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [3]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [4]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [5]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [6]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [7]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [8]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [9]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP [10]Hospital e Maternidade Brasil. Departamento de Hemodinâmica Cardiologia Intervencionista e Intervenção Endovascular – Santo André – SP*

Background: Primary Percutaneous Coronary Intervention (PCI) is the most effective and secure reperfusion treatment for acute myocardial infaction (AMI). When PCI is compared to fibrinolitic reperfusion, it presents better results in all different age groups. **Objectives:** This study was to evaluate if elderly patients who underwent a Primary PCI after AMI had a worse clinical evolution when compared to younger adults. **Methods:** From July 2001 to September 2006, 222 consecutive patients were submitted to Primary PCI to treat Acute Myocardial Infarction. The patients were divided in two groups according to age: Group one (younger adults) was constituted by patients $<$ 65 years old n=141, being 107 men and 34 women, with mean age 51.5 $\pm$ 7.9 years); and Group Two (Elderly) $\geq$ 65 years old n=81, being 52 men and 29 women with mean age 72.6 $\pm$ 6.3 years). Diabetic patients were 20,7%. The clinical evaluation included events at 30 days and one year of follow-up: death, AMI, Stroke, new target lesion revascularization (TLR) and new PCI and/ or revascularization surgery (CABG). **Results:** The table below shows the results comparing the variables in the two groups at 30 days and one year of follow-up. **Conclusion:** The analysis of Consecutive patients with Acute Myocardial Infarction treated with Primary PCI in a General Hospital, showed that Elderly patients had higher rates of AMI at 30 days and increased mortality rates after a year of follow-up when compared to younger adults. The numbers of events found in the follow-up of one year of both groups were very low, evidencing the beneficial effects of Primary PCI to treat acute phase of myocardial infarction for all age groups.

30 days Follow-up	Age $<$ 65 years (141)	Age $\geq$ 65 years (81)	P Value
Death	3 (2.1%)	7 (8.6%)	0.05
AMI	1 (0.7%)	2 (2.5%)	0.6
Stroke	2 (1.4%)	0	0.7
1 Year Follow-up	Age $<$ 65 years (141)	Age $\geq$ 65 years (81)	P Value
Death	6 (4.3%)	8 (10.8%)	0.1
AMI	2 (1.4%)	6 (8.1%)	0.05
Stroke	3 (2.2%)	1 (1.3%)	0.9
Percutaneous TLR	5 (3.6%)	6 (8.1%)	0.5
Surgical TLR	0	0	0.9

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Risk stratification using myocardial perfusion SPECT in the assessment of ischemic heart disease in symptomatic women.

M. Lujambio[1], R. Ferrando, J. Vilar, M. Kapitan, V. Selios, C. Lecot, R. Hitateguy, G. Lago, R. Lluberas, J Gaudiano. *[1]NUCLEAR MEDICINE CENTER. UNIVERSITY HOSPITAL. SCHOOL OF MEDICINE. MONTEVIDEO. URUGUAY*

Introduction: Ischemic heart disease is a challenging diagnosis in women due to atypical presentation and low specificity of conventional stress tests. Myocardial perfusion SPECT (MPS) is a useful test capable to estimate cardiovascular risk and prognosis in this population. OBJECTIVE: To assess the value of MPS in risk stratification of coronary artery disease (CAD) in symptomatic women. **Methods:** A group of 194 symptomatic women evaluated by MPS in the Nuclear Medicine Center at University Hospital were included. Mean age of the patients was 64 years. 24% had a previous history of CAD. 45% presented typical angina and 15% atypical angina. MPI was performed using a two days 99mTc-MIBI protocol. A left ventricular 17 segments model was used and uptake was classified from 0 to 4 (normal, equivocal, mildly decreased, severely decreased and absent). Summed stress scores (SSS) were obtained and 3 different risk subgroups were defined as conventionally established in low risk (LR, SSS = 0–3), intermediate risk (IR, SSS = 4–7), high risk (HR, SSS $\geq$ 8). All patients were followed during 12 to 20 months by clinical interview or phone communication. The following events were considered: cardiac death (CD), myocardial infarction (MI), coronary angioplasty (PTCA) and coronary artery bypass grafting (CABG). Chi-square test and logistic regression were used for statistical analysis. **Results:** 112 patients had LR-MPS, 25 had IR-MPS and 57 patients had HR-MPS. In the LR subgroup 1 non-cardiac death occurred and 1 patient received PTCA (0.089%). In the IR-MPS there was 1 CD (4%), 1 MI (4%) and 1 patient received CABG (4%). In the HR-MPS subgroup occurred 1 CD (1.75%), 14 (24.5%) were treated with PTCA and 10 patients with CABG (17.5%). The proportion CD, MI or coronary revascularization was statistically different between the LR (0.089%), IR (12%), and HR (43.8%). [p$<$ 0.001, chi-square= 55.048]. SSS was able to predict CD, MI or revascularization (p$<$0.001; odds ratio, 1.21; 95% CI, 1.13–1.29). The presence of typical angina did not reach a statistically significant relation with the outcome of the patients (p=0.073) as the existence of previous CAD did (p$<$0.001). The regression model is further discussed. **Conclusions:** MPS is able to define different subgroups of cardiovascular risk in symptomatic women, allowing a proper selection of the patients that will benefit from coronary revascularization.

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Effect of Sleep Deprivation Partial of the Vascular reactivity

J.L. Dettoni[1], F.M. Consolim-Colombo[2], H Moreno-Filho[3], M.C. Irigoyen[2], J.C.A. Ferreira-Filho[2], S.B.C. Souza[2], S. Borile[2], L.F. Drager[1], E.M. Krieger[2], G. Lorenzi-Filho[1]. *[1]Sleep Laboratory Pulmonary Division- Heart Institute (InCor),University of São Paulo Medical School, São Paulo,Brazil. [2]Hypertension Unit - Heart Institute (InCor),University of São Paulo Medical School, São Paulo,Brazil. [3]Cardiovascular Pharmacology and Cardiology, Clinical Hospital of Campinas and Faculty of Medical Sciences, State University of Campinas,*

Introduction:A partial sleep deprivation is common ion our society and can have serious consequences. Epidemiological studies have suggested that partial sleep deprivation is associated with an increased incedence of hypertension, myocardial infarction and stroke. However, the pathofhysiological mechanisms are not fully known. **Objective:** To evaluate the effects of partial sleep deprivation for 5 days on venous endothelium. **Methods and results:** We studied 10 healthy young male volunteers, age 31+-2.05, BMI24.7 +- 1.16. All volunteeers performed polysomnografhy nigth before the study and had no obstructive sleep apnea.The sleep was monitored by daily of sleep and actigraphy for 12 days. The study was divided in 2 phases of 5 consecutive days and intermingled for 2 days of sleep habit of spontaneous. At the sleep deprivation, the volunteer was instructed to sleep $<$ 5 hours/day. In the extended phase of sleep (or "normal"), the volunteer was instructed to sleep more than 7 hours/day (normal sleep). The sequence of phases was randomized. At the and of each phase, the reactivity was analyzed by venous endothelial technique of "Dorsal Hand Vein". The technique assesses, after venous occlusion, determined by % of venodilation saline (venodilation baseline), achetylcholine (venodilation dependent endothelium function) and nitroprusside (venodilation endothelium independent). The volunteers slept on averange 4 hours and half at the time of deprivation and 8 hours of sleep during extended (normal).

Venodilation	Sleep normal	Sleep loss	
Basal	36+-12	25+-10	p$<$0,046
Acetilcholine	101+-22	41+-22	p$<$0,001
Sodium Nitroprusside	171+-71	154+-66	p$<$0.59

Conclusion: The partial sleep deprivation for only 5 days, simulanting a situation common in our society, promotes decreased venodilation dependent of endothelium, suggestig a venous endothelium dysfunction.

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Influence of PTCA on Mobilization of bone marrow-circulating progenitor cells in peripheral blood

R. G. Turan[1], S. Yokus[1], M. Brehm[1], S. Steiner[1], T. Zeus[1], T. Bartsch[1], M. Koestering[1], C.M. Schannwell[1], B.E. Strauer[1]. *[1]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [2]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [3]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [4]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [5]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [6]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [7]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [8]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology [9]Heinrich Heine University Duesseldorf, Division Cardiology, Pneumology and Angiology*

Introduction: Tissue ischemia was found to mobilize bone marrow-circulating progenitor cells (BM-CPCs) into the peripheral blood (PB) and to contribute to neovascularization in an animal model. In addition, human BM-CPCs significantly increased in patients after acute myocardial infarction (AMI). The aim of this study is to investigate the effect of ischemia during PTCA on the mobilization of BM-CPCs in PB **Methods and Results:** Peripheral blood concentrations of CD34+ and CD133+ BM-CPCs were measured by flow cytometry in 16 coronary artery disease (CAD)-patients with PTCA pre-PTCA, immediately post PTCA, on days 1 as well as 2 after PTCA and as a control subjects in 10 CAD-patients without PTCA. The mobilization of BM-CPCs showed significantly increase of on day 1 after PTCA compared to pre-PTCA (CD34+: 180$\pm$69 to 280$\pm$80; CD133+: 66$\pm$31, 70$\pm$32; p$<$0.05), which decrease on day 2 after PTCA. No significant change was observed between pre-and immediately post PTCA. There was no significant different between immediately post coronary angiography and on day 1 after coronary angiography in control subjects without PTCA. **Conclusion:** The present study demonstrated that ischemia during PTCA may lead to short time increase of BM-CPCs-mobilization in PB in patients with CAD

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Valuation of the Excursion and Average Mitral Ring Speed as Left Ventricular Systolic function indexes

J. Tripolone[1], GA Santiago[2], JM Tripolone[3]. *[1]INSTITUTO MEDICO SAN JUAN [2]INSTITUTO MEDICO SAN JUAN [3]INSTITUTO MEDICO SAN JUAN*

Quantification of the role of global left ventricular systolic function is an important parameter in the assessment and clinical management of all types of cardiac pathology. EF (EYECTION FRACTION) is, perhaps, the most widely used parameter for global left systolic ventricular function measuring (FSVI). However, it is determined by: pre-load, post-load, heart rate and

inotropic state The reason for the study was to evaluate a new index of global systolic function of the left ventricle. To that end we took four groups of patients: 2. **Materials and Methods** We took four groups of patients in a prospectively way with the following characteristics: 0) Normal:, FS (FRACTIONAL SHORTENING)> 28%. 1) Patients with hypertension and FS > = 28%. 2) Patients with ischemic heart disease with or without a history of myocardial infarction, FS > = 28%. 3) Patients with dilated ischemic and non-ischemic cardiomioathy with a FS decrease, <28%. Eco-cardiography:. We valued FS (according to the criteria of the American Society of Echocardiography recommendations [ASE]). SPAM and VEAM were assessed from 4 apex chambers with M-mode cursor placed on the union of the side wall and the mitral ring . SPAM: The distance traveled by the mitral ring during systole. VEAM: Distance during the first third of the systole divided by the time. It represents the ascendant pending tangent of the mitral ring systolic displacement by the conventional M-Mode in the first third of systole, DELTA d / DELTA time **Statistical analysis:** Analysis of variance was done to determine the significant difference between ESPAM and VEAM on 0–1–2–3 groups. In order to compare the variables per couple we applied the Bonferroni method. All P values <0.05 were considered statistically significant. **Result:**

ESPAM: THERE ARE STATISTICAL DIFFERENCE BETWEEN	G0 AND G3	(P=0.0001)
	(G0 VS G1 VS G2 ns)	
VEAM: THERE ARE STATISTICAL DIFFERENCE BETWEEN		
	G0 VS G1	(P=0.006)
	G0 VS G2	(P=0.008)
	G0 VS G3	(P=0)
	G2 VS G3	(P=0.01)
	G1 VS G3	(P=0.001)
	G1 VS G2	(P=0.005)
FS:		
	G0 VS G1	(NS)
	G1 VS G2	(NS)
	G0 VS G3	(P=0.05)

VEAM, unlike ESPAM, separated in a statistically significant difference the 4 patient groups, which shows that by incorporating the time parameter in the first third of ESPAM results in a more sensitive index as a marker of left ventricular systolic function and perhaps a heart contractility index. We observed that the only difference marked in some patients at different groups of disease (G0 and G2) with the same ESPAM and FAC, was VEAM.

Conclusions: 1) We showed a clear separation of the studied groups BY VEAM. 2) VEAM is a simple parameter to evaluate at not sophisticated eco-cardiography equipments. 3) There was a 100% of feasibility on the results, prognostic and diagnostics done studying these indexes. 4) It is likely that the index of contractility is independent of the load on the left ventricle.

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Optimization of Medical Therapy in African-American Patients with Heart Failure Referred for Cardiac Resynchronization Therapy

M. Sardar[1], J Shin[1], A Kezerashvili[1], S Maybaum[2], **M Galvao[2]**, K Trivedi[2]. *[1]North General Hospital [2]Montefiore Medical Center [3]Montefiore Medical Center [4]Montefiore Medical Center [5]Montefiore Medical Center [6]Montefiore Medical Center*

Introduction Heart failure (HF) remains a national epidemic. Optimal medical therapy (OMT) for HF includes ACE-inhibitors (ACEI), aldosterone antagonists, and beta-blockers. In African American (AA) patients, the addition of fixed dose isosorbide dinitrate and hydralazine (ISDN/H) to standard medical therapy increases survival in advanced HF (A-HeFT Investigators). Current practice guidelines support the addition of ISDN/H to standard HF medications in AA patients with symptomatic systolic dysfunction. Cardiac resynchronization therapy (CRT) should be considered only if patients remain symptomatic from HF despite OMT. We looked at the utilization of OMT in AA patients with HF referred for CRT at a single, urban teaching institution. **Methods** We conducted a retrospective chart review of 216 patients referred for CRT from Nov 2004 (date of A-HeFT publication) to Jan 2007, in order to determine the utilization of OMT at the time of CRT referral. Individuals were classified by self-identified race. **Results** Medication information was available in 192 patients. Of these, 48 (25%) were AA, 53 (27.6%) were Caucasian, 81 (42.2%) were Hispanic, and 10 (5.2%) were other or unidentified. Of the 48 AA patients referred for CRT, utilization of medications was as follows: 89.6% beta-blocker, 70.8% ACEI, 22.9% ARB, 62.5% aldosterone antagonist, 6.7% fixed dose ISDN/H, 0% individual components ISDN/H, and 12.5% individual components isosorbide mononitrate and hydralazine (ISMN/H). AA patients were more likely to be on aldosterone antagonists than Caucasians or Hispanics. **Conclusion** Despite current evidence-based guidelines regarding optimal medical therapy in patients with HF, less than 1 in 10 AA patients were on fixed-dose or individual components of ISDN/H at the time of referral for CRT. Potential reasons for underutilization of these medications should be explored; as studies demonstrate that adherence to practice guidelines can have a substantial impact on HF survival and readmission rates.

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INCIDENCE OF HOSTILITY IN SUBJECTS FOLLOWING A PROGRAM OF CARDIAC REHABILITATION POST-MYOCARDIAL INFARCTION, PREDICTIVE FACTOR FOR POSSIBLE RELAPSES

M. Alcocer[1], M Rangel[2], E Tirado[3], N Pacheco[4], S Leon[5], E Castro[6], J Alvarez De La Cadena[7], J Rodriguez[8], E Garcia[9], D Arroyo[10]. *[1]INSTITUTO DE CORAZON DE QUERETARO, MEXICO*

Introduction: From the critics done to type A personality as a cardiovascular risk factor that indicated a greater probability of suffering a cardiovascular damage, began a process to identify an effective way to a new conductual pattern. Numerous studies have associated the emotional complex Anger-Hostility with the occurrence of coronary atherosclerosis acute events. This complex is form by a cognitive component (hostility), emotional aspect (anger) and other conductual (aggression), form these tree aspects, one which is stable and perdurable in time is hostility and is the most relevant risk factor. Methodology: To investigate incidence of this conductual complex we performed Derogatis scale for all 32 patients ongoing to a cardiac rehabilitation program in the Cardiac Institute of Queretaro, Mexico after they suffered a Myocardial infarction. **Results:** Total of 32 patients, 13 of them (40 %) were positive to be considered with pathological hostility **Conclusions:** Incidence of pathological hostility in patients undergoing cardiac rehabilitation program, after a myocardial infarction, is notary high compared with general population, we need to continue to know specific weight for new cardiac events.

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Acute Effects of Acupuncture on Hemodynamics Variables in Outpatients With Compensated Chronic Heart Failure

S. Chacon[1], S Soares[1], M Quintão[1–2], D A Bastos[3], L Aragão[1], E T Mesquita[2], S Chermont[1–2]. *[1]SERRA DOS ORGÃOS UNIVERSITY [2]FEDERAL FLUMINENSE UNIVERSITY [3]ALOISIO DE CASTRO CARDIOLOGY INSTITUTE*

Background: Patients with chronic heart failure (CHF) present impairement in functional capacity that decrease the ability to perform daily-life activities reducing the quality of life. Technics of acupuncture has been used in patients with hypertension, but its effects on patients with chronic heart failure (CHF) is poor knowed. **Objective:**The aim of this study was to determine the effects of acunpuncture on non-invasive hemodynamic variables in patients with conpensated chronic heart failure. **Methods:** Following a prospective, transversal, non-controlled protocol, in two moments, eleven patients with conpensated CHF (5 male; 6 female; age 60±12 years; BMI 28,4±4 kg/cm^2, NYHA class II,III) underwent acupuncture 30 min in a lyin down position. Acupoints used in this present study was followed by previous individual based oriental assesment, performed after experimental phase: **CS6, C7, F2, BP3, BP6, IG4** in the midst of others. Statistcal analysis was performed by student-t test for measures before and after. All results are expressed as means ± SEM and P < 0.05 was considered significant. **Results:** Acupuncture decreased resting heart rate (Pre: 84±13; Post (5min): 77±16 bpm; P<0.05) and sistolic blood pressure, diastolic blood pressure, and mean arterial pressure (Pre: 119±13; Post: 112±15mmHg; P<0.05; Pre: 77±11; Post: 67±9mmHg; P<0.05; Pre: 91±11; Post: 82±11mmHg; P<0.05) respectively. During acupuncture, PP increased (Pre: 44±6; Post: 48±5mmHg). but did not change SpO2 (P=0.161). No patients worsed during acupuncture session. **Conclusion:** in this present study, acupuncture has been showed a save technic in patients with heart failure. This method decreased signficantlly hemodynamic paramethers in patients with stable CHF and best effects was showed at 20 min during session decreasing HR and BP. A control protocol and increase the nunber of the sample are necessary to evaluate the magnitude of this effects. Future clinical trials should investigate whether this effect is associated with improved clinical outcome.

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Effect of Daily Versus Alternate Day Therapy With Simvastatin in Reducing LDL-Cholesterol Among South Asian Cohort

M. Sardar[1], S Nadeem[1], A Omer[1], **R Siddiqui** . *[1]North General Hospital [2]Aga Khan University [3]Mount Sinai VA Bronx*

Introduction South Asians are thought to be more responsive to the lipid lowering effects of statins as compared to Caucasian populations. No clinical data is available on response to statins among patients of South Asian origin. Statins lowers LDL-Cholesterol concentration by competitively inhibiting the rate-limiting step of cholesterol synthesis and up-regulating LDL-cholesterol receptors. This upward regulation of LDL-receptor activity has lasted up to two days in human monocyte-derived macrophages. Previous small reports among Caucasians using high dose of Statin versus daily standard Statin dose has shown comparable reductions in LDL-Cholesterol. We aim to estimate the proportion of our South Asian patients achieving LDL-Cholesterol goals on daily standard dose of Simvastatin versus similar dose administered at alternate days. **Methods** In a double-blind, placebo controlled design, 150 eligible patients who met the National Cholesterol Education Program (NCEP) Adult Treatment Panel III (ATP III) guidelines for Statin therapy, were randomized to receive either 20 mg of Simvastatin daily or every other day for 12 weeks duration. A total of 17 patients were unable to complete the entire study period. Final study cohort comprised of 133 patients (daily group n=67, alternate day group n=66). Compliance to study medicine by pill counting was 92% with no difference among the groups. **Results** LDL-Cholesterol was reduced by 29% in daily group versus 22 % in every other day group (p=0.07) with absolute reduction of 41 and 34 mg/dl (p=0.11) respectively. In subset of patients with statin therapy for primary prevention (patients without Coronary artery disease [CAD]) LDL-Cholesterol was reduced by 24% in daily group and 15% in every other day group (p=0.04). Target NCEP-ATP III goal of LDL-Cholesterol of < 130 mg/dl was achieved in 81.8% of daily group and 50% in alternate day group (p=0.02). In secondary prevention cohort (patients with CAD or CAD risk equivalents) LDL-Cholesterol was reduced 30% with daily therapy versus 25% with alternate day therapy (p=0.21). Target NCEP-ATP III goal of LDL-Cholesterol of < 100 mg/dl was achieved in 62.2% of daily group and 47.5% in alternate day group (p=0.17). Independent determinants of LDL-Cholesterol reduction were baseline LDL-Cholesterol (β=0.568; p=0.002), alternate day therapy (β=-0.198; p=0.008) and secondary prevention cohort (β=0.174; p=0.03). Conclusion Significant proportion of our South Asian cohort achieved NCEP-ATP III goals, figures consistent with observations in Caucasian populations. There was a trend towards greater reduction in LDL-Cholesterol in the daily Standard dose Simvastatin group. Higher baseline LDL-Cholesterol and daily Statin therapy were independent determinants of LDL-Cholesterol reduction.

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CT Angiogram as Replacement Diagnostic Investigation for Angioplasty of Coronary arteries

MCL Lim[1], C De Larrazabal[1], TW Wong[1]. [1]*Singapore Heart Stroke and Cancer Centre* [2]*Singapore Heart Stroke and Cancer Centre* [3]*Singapore Heart Stroke and Cancer Centre*

Background. We had been able to demonstrate a high negative and positive predictive value for CT coronary angiogram as compared to invasive coronary angiogram in a previous publication. In this study, we compared the use of coronary CT angiogram with invasive coronary angiogram as the diagnostic investigation of choice for decision making for PTCA. The aim of the study was to assess whether CT coronary angiogram can provide an alternative to invasive coronary angiography as the decision-making diagnostic modality for PTCA **Methods.** A total of 121 consecutive patients with significant coronary artery disease who were listed for PTCA based on the results of coronary CT angiogram were entered into the study. We assessed the diagnostic accuracy of coronary CT angiography on a per patient basis. The coronary CT angiogram results were assessed by 2 experienced observers in the CT laboratory. Pre-PTCA planning using coronary CT angiogram data included assessment of vessel characteristics such as vessel calcification, density and length of plaque, vessel wall diameter, vessel ectasia, visualization of totally obstructed segments and collateral circulation was performed. Coronary stenoses on the invasive coronary angiogram were determined independently in the catherization laboratory using online quantification software. Patient inclusion criteria for PTCA were those with de novo coronary lesions. Coronary CT angiographic inclusion criteria were, 50% to 100% diameter stenosis, and vessel diameter $>$ 2.25 mm. The target lesions were correlated with the angiographic images taken prior to the angioplasty. Peri-procedural complications such as major adverse cardiac events (MACE), stroke and emergency bypass graft surgery were evaluated. Major adverse cardiac events (MACE), including death from any cause, Q-wave myocardial infarction, and target vessel revascularization at 30 days, were analysed. **Results.** At the catherization laboratory, following the pre-PTCA invasive diagnostic angiograms, 118 (97.5%) proceeded with coronary artery stenting. For 3 of the patients, the operator decided not to proceed with PTCA as the intended target lesions were non-significant on the online quantification software during invasive angiogram as compared to coronary CT angiogram. There were no periprocedural complications such as major adverse cardiac events (MACE), stroke and emergency bypass graft surgery. At 30 days, there were no episodes of death from any cause, Q-wave myocardial infarction, and target vessel revascularization **Conclusions.** Coronary CT angiography is an alternative to invasive coronary angiography as a diagnostic modality for decision making for PTCA. In addition, additional information derived from the pre-PTCA coronary CT angiogram such as vessel calcification, density and length of plaque, vessel wall diameter, vessel ectasia and visualization of totally obstructed segments may assist the operator in obtaining a good peri-procedural and 30 day outcome.

P1264

Hospital mortality in acute STEMI in greater of 70 years

M. Correa[1], M Lopez[1], R Codutti[1], M Sanjurjo[1]. [1]*CORDIS* [2]*CORDIS* [3]*CORDIS* [4]*CORDIS*

Introduction: The mortality of the Patients With ST-Elevation Myocardial Infarction is maximum in the first hours of evolution. The sobrelife improves with the diagnosis and precocious treatment, being confirmed the superiority of primary angioplasty coronary like reperfusión strategy. **Objective:** to analyze mortality in the greater patients of 70 years than they entered with ST-Elevation Myocardial Infarction. **Material and methods:** retrospective analysis of 243 patients who entered with diagnosis of acute infarct of myocardium With ST-Elevation between January of 1997 and August of 2007 and that received primary angioplasty. **Results.** The age average was of 61,2 years. 186 patients (76.5%) they were men; 25.5% were greater to 70 years. Mortality was of 22,5% between the greater ones of 70 years, 21 % was women, 50 % diabetics; 85,7 % hypertense,50 % tabaquistas, in 50 % the descendent anterior (DA) were artery responsible for the infarct. 50 % had severe coronary disease of three vessel.The Killip and Kimbal of entrance were greater to A in 61.3%. Mortality was of the 12,7% between the minors of 70 years; 85 % were men; 60.8 % diabetics; 60.8% hypertense ones; 56.5% tabaquistas; in 52.2 % the DA were artery responsible for the infarct. The Killip and Kimbal of entrance were greater to A in 50.3 % (p 0.11). Although there was a greater mortality between the greater ones of 70 years, this not influence in the cup of primary success of angioplasty (p 0.06). **Conclusion:** in the greater patients of 70 years mortality was greater (22.5 % vs 12.7 %), although without statistical (p 0.06). Either there was no difference in the Killip and Kimbalof entrance meaning; with a cup of success in angioplasty similar in both grups(p 0.06).

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Long term results of balloon dilation of the mitral valve for pediatric typical mitral valve stenosis.

A. Peirone[1–2], A. Guevara[1], A. Spillmann[1], B. Vega[1], E. Juaneda[1–2], E. Ruiz Lascano[2], E. Banille[1], L. Alday[1–2]. [1]*Children' s Hospital of Córdoba* [2]*Private Hospital of Córdoba*

Objective: Since there is scanty information regarding the late results of balloon dilation (BD) of the mitral valve in typical congenital mitral valve stenosis (TMVS), a very rare and usually severe condition, we report the long term outcomes of this procedure in infants and children. **Methods:** From August 1986 to September 2006, 8 patients (4 male) underwent BD for severe TMVS. The mean age and weight were 5.2 years (0.7–13) and 21.8 kg (7–49) respectively. The procedure was performed under general anesthesia using the transseptal approach. According to the size of the mitral valve annulus, one or two balloons were simultaneously insufflated across the valve. Single balloons were utilized in 6 pts sizes varying from 15 to 18 mm in diameter and double- balloon technique in the remaining 2 (15 + 15 mm and 15 + 18 mm). The mean follow–up time was 12.5 years (1–21). Clinical events were defined as death, repeat surgical or percutaneous intervention, and readmission because of heart failure. **Results:** All patients were symptomatic: NYHA class II: one, III: 4 and IV: 3, all 3 in pulmonary edema at the time of intervention. Associated lesions included: a small ventricular septal defect in one infant, and coarctation of aorta and patent arterial duct in another one. Post intervention, the mitral valve area increased from 0.74 cm2 (0.48–1.1) to 1.51 cm2 (1.1–1.9) and the mean gradient across the mitral valve decreased from 13.2 mm Hg (6–22) to 5.3 mm Hg (0–11). The mean pulmonary artery resistance predilation was 8.52 (3.6–17.6) Wood units. Left atrial perforation with hemopericardium occurred in one patient who required surgical drainage. Appearance of new mild mitral incompetence was detected in 5 patients. Functional class improvement occurred in 7 patients: IV to II in 2, III to I in 5. In the long term follow-up 2 patients remain in functional class I and 2 more in class II with no further interventions. There were 4 restenosis in a mean time of 4.45 years (1–10 years) post BD. Two patients required surgical intervention (mitral commissurotomy and mitral valve replacement one each). Two patients underwent redilatation. The patient who received the mitral valve prosthesis died in the immediate post operative period. The remaining 3 patients are in functional class II. Mild to moderate pulmonary hypertension was detected in 4 patients during the last follow-up. The estimated actuarial 12-year event-free survival rate was 50%. **Conclusions:** BD of the mitral valve for TMVS is a palliative procedure with varying results. In half of the patients of this series, symptomatic improvement was long lasting. In the other half, surgery or repeat BD was necessary. There was one death after mitral valve replacement. Pulmonary hypertension persisted frequently in spite of improvement in valve function. A multiinstitutional study should be carried out to evaluate a larger number of patients.

P1266

In-hospital management of decompensated heart failure: interaction among NT-proBNP, renal function and diuretic response

ML Coronel[1], PL Pozzer[1], GA Pereira Zini[1], RP Laurino[1], GV Lepore[1], CR Zoni[1], GD Olivera[1], JP Cimbaro Canella[1], SM Macin[1], E Perna[1]. [1]*Heart Failure Clinic, Instituto de Cardiologia J. F. Cabral, Corrientes, Argentina*

Objectives: 1-Evaluate the in-hospital treatment and diuretic response according to the levels of aminoterminal portion of pro-BNP (NT-BNP) in patients admitted by decompensated heart failure (DHF); and 2-Analyze the variation of the renal function. **Material and methods:** We prospectively included 49 hospitalized consecutive patients with clinical diagnosis of DHF and abnormal baseline NT-BNP levels ($>$450 pg/ml in $<$50 years, $>$900 between 50 and 75 years and $>$1800 in of 75). Urea and creatinine were measured on admission and predischarge, calculating the relation BUN ([urea in g/l *100/2.14]) /creatinina (CBC). The instituted therapy, total of dose of fursemide, diuresis and weight was evaluated during the hospital stay. **Results:** The mean age was 62$\pm$11 years and 65% were men. The clinical profile was wet in 98% and cold in 9%. The population was classified in the following tertiles of NT-BNP: 1: $<$3000, 2: 3000 to 9500 and 3: $>$9500 pg/mL. IV treatment EV in groups 1 to 3 included vasodilators in 50, 11 and 12% (p=0.02) and inotropics in 6% in the three groups. In tertile 1 to 3 the total dose of diuretics was 250, 358 and 427 mg (p=ns), with a diuresis of 8.7, 8.5 and 11.2 l (p=ns), with a mean weight reduction of 4.6, 5 and 5 kg (p=ns). The initial and predischarge values of urea were 0.76 and 0.81 g/l (p=0.044), creatinine was 1.44 and 1.41 mg/dl (p=ns) and of CBC 60.6 and 62.2 (p=ns). In tertile 1 to 3, at baseline the urea was 0.61, 0.62 and 1.07 g/l (p$<$ 0,001) and creatinine was 1.18, 1.31 and 1.83 mg/dl (p=0.006), respectively; before discharge the urea was 0.70, 0.69 and 1.05 g/l (p=0.003) and the creatinine was 1.23, 1.29 and 1.73 mg/dl (0.037). The median change of urea was 0.05 g/l, and the variables associated with this finding were higher proportion of diabetes and ischemic etiology, less orthopnea and diuresis on day 1 and higher systolic pressure on day 2, without differences in the dose of diuretics, total diuresis nor total balance. In the multivariated analysis only the ischemic etiology was an independent predictor of increment of urea levels (OR=8, IC95%=1.5–43, p=0.016). **Conclusion:** In DHF patients, mostly with congestive profile, the treatment according with the levels of NT-BNP only differed in the use of vasodilators. The use of diuretics was associated only with a slight increase in the urea, which was independent of the final negative balance.

P1267

Prevalence and treatment of the Arterial Hypertension in the city of Formosa

F. Sosa[1], C. Sosa[2], D. Hernandez[3].

Background: Different epidemiological studies have demonstrated the high prevalence and unsatisfactory control of the arterial hypertension (AH). **Objectives:** To determine the prevalence and to assess the current status of treatment and control of AH. **Methods:** The study was developed in 50 areas of the city of Formosa. The interviews were made to people of 18 years old or older, and a semi- structured questionnaire was used. Two blood pressure (BP) measurements were made according to international recommendations, with the patient seated for at least 5 minutes, using an accurate mercury sphygmomanometer device. AH defined as BP $\geq$ a 140/90 or the presence of antihypertensive treatment. Controlled hypertension (CH) was defined as BP $\geq$ a 140/90 in subjects taking antihypertensive medication. **Results:** 2832 people were interviewed. The mean age was 44,3 $\pm$18, 58.5% were female, 6.4% had diabetes, 10.5% hypercholesterolemia, 13.1% Stroke previous, 22.5% were current smokers, and the mean systolic and diastolic BP levels were 130.2 $\pm$23.5 and 82.1 $\pm$15 mmHg. The prevalence was 39% and increasing progressively with age (15%, group of 20–29 years old to 75% above the 60 years old). 82% from the 1105 hypertensives (H) had at least an additional risk factor, 479 received an antihypertensive drug and 129 (11,2%) had CH. 30% remained with grade 2/3 hypertension values, despite the treatment. 133 out of 182 diabetics were H (73.1%), and less than 10% had BP values under 130/80. Similar observations were obtained in patients with a previous Stroke and H. The most used drug was Enalapril (65%), usually as monotherapy. **Conclusions:** These findings confirm the high prevalence of AH, and an unsatisfactory control, even in high risk groups, supporting the need of urgent actions to improve the management of this disease.

P1268

Finds of Miocardy Perfusion in diabetic asymptomatic patients without previous AMI.

A. Pallares Farias[1], Abalsa Agustina, Joo Turoni Claudio, Rovaletti Federico, Castellanos Ramiro. [1]*INSTITUTO DE CARDIOLOGIA TUCUMAN* [2]*INTITUTO DE CARDIOLOGIA TUCUMAN* [3]*INSTITUTO DE CARDILOGIA TUCUMAN* [4]*INSTITUTO DE CARDIOLOGIA TUCUMAN* [5]*INSTITUTO DE CARDIOLOGIA TUCUMAN*

Objectives: Identify by miocardy perfusion the presence of ischemical cardiopathy in diabetic asymptomatic patients. **Procedents:** In the diabetic patients, coronary desease is severer. There is major prevalency in those patients than in the rest of the population. This desease is likely to be present in earlier ages in diabetic patients, being the silent schemia the most frequent. In diabetic patients, coronary arterial patology is generally detected in advanced conditions, besides a decrease in the ventricular function.However, in asymtpomatic patientes is detected lately. **Methods:** 178 diabetic patients were studied by miocardy perfusion in a period between April 2005 and December 2007, from whom those patients with known ischemic cardiopaty were excluded. The remaining 135 patients were divided into 2 groups: A-symptomatic (N=78); and B- asymptomatic (N=57). **Results:** The age, the sex distribution and the presence of risk factor, were similar for both symptomatic and asymptomatic patients. Normal perfusion was found in 73% of the symptomatic patients and 56% of asymptomatic patients (p:0.046). Presence of Acute Miocardial Infraction (AMI) was found in 9% of the asymptomatic patients and 20% of symptomatic patients. (p:0.042). Ischemia was shown in 7 % of both groups. Less than 60% of ejection fraction were found in 30% of symptomatic patients and 20% of asymptomatic patients (p:NS for both groups). **Conclusion:** Miocardy Pefusion was effective in diabetic patients without AMI. 20% of synmptomatic patients and 9% of asymptomatics patients of these group showed the presence of AMI, as this method is very useful to identify diabetic asymptomatic patients without previos AMI.

P1269

PROGNOSTIC VALUE OF ADMISSION ECG IN NON-ST ELEVATION ACUTE CORONARY SYNDROMES

H. Pomés Iparraguirre[1–2], G Calderón[1], W Santander[2], **G Guglieri**[2], L Ferrer[1], R Aguero[1], O Paredes[2], F Brey[2], J Torres[1], G Guthmann[1]. [1]*SANATORIO FRANCHÍN, BUENOS AIRES, ARGENTINA* [2]*INCOR, LA RIOJA, ARGENTINA*

Objectives: to analize the prognostic value of admission electrocardiogram (ECG) in patients with non-ST elevation acute coronay syndromes (ACS), Unstable Angina and NSTEMI. **Methods:** 503 patients (p) consecutively admitted to CCU were retrospectively studied (378 men and 125 women, mean age: 59.8 ± 11.6 years). We evaluated the association of ST-T changes on ECG, ST depression (↓ ST) and T wave inversion (T-), to baseline characteristics and inhospital outcome by univariate analysis (chi square, Kruskal-Wallis test): gender, age, previous history, clinical presentation, high risk (HR) stratification at admission (ACC/AHA criteria), response to treatment (refractory angina -REF-) and mortality (MORT), (re)-infarction (reINF), mortality and (re)-infarction (M/reINF), and combined events (CE): MORT, reINF, angina and revascularization. **Results:** ↓ ST was present in 121 p (24.1%), T- in 188 p (37.4%) and ECG without ischemic changes (ECG-NC) in 188 p (37.4%); 1 p had LBBB. Patients with ↓ ST were older (63.4±11.6 vs 58.6±11.4 years, p= 0.0003), and with higher rate of previous infarction (30.6% vs 19.5%, p= 0.032) and NSTEMI as clinical presentation (19% vs 6.6%, OR: 3.35, 95% CI: 1.82–6.16, p= 0.0001). They received more intensive medical treatment (NTG-IV: 95.9% vs 86.6%, OR: 3.6, 95 CI: 1.4–9.23, p=0.001; heparin: 73.6% vs 47.6%, OR: 3.06, 95% CI: 1.95–4.8, p=0.001) and had more frequently coronary angiography (59.5% vs 46.1%, p< 0.009), with higher rate of multivessel disease (68.1% vs 52.1%, OR: 1.97, 95% CI: 1.09–3.55, p< 0.02). Regarding to outcome, ↓ ST was associated with REF (9.9% vs 4.5%, OR: 2.35, 95% CI: 1.09–5.07, p< 0.07), reINF (6.6% vs 2.4%, OR: 2.92, 95% CI: 1.1–7.74, p= 0.07) and M/reINF (8.3% vs 3.2%, OR: 2.76, 95% CI: 1.16–6.57, p= 0.05). ECG-NC was associated with lower frequency of reINF (1.6% vs 4.5%, OR: 0.35, 95% CI: 0.1–1.23, p< 0.06) and CE (17% vs 35%, OR: 0.38, 95% CI: 0.24–0.59, p< 0.001) **Conclusions:** 1) Almost 2/3 of patients presented ST-T changes on admission ECG. 2) ST-depression was present in older patients, was associated with NSTEMI, more intensive medical treatment, higher requirement of coranary angiography and more extensive CAD, with higher rate of inhospital events. 3) Absence of ST-T changes was associatted with better outcome.

P1270

Lack of late enhancement with gadolinium in non compaction cardiomyopathy

D. Perez De Arenaza[1], M Falconi[1], M Pietrani[1], P Pollono[1], G Maid[1], P Oberti[1], C Belziti[1], N Vulcano[1], R Garcia Monaco[1], A Cagide[1]. [1]*Hospital Italiano de Buenos Aires*

Introduction Isolated ventricular non-compaction (IVNC) is an idiopathic form of cardiomyopathy. Little is known about the pathogenesis of this cardiomyopathy. Many cardiomyopathies have late enhancement with gadolinium in cardiovascular magentic resonance (CMR) scans that suggests the presence of fibrosis, necrosis or infiltration of the myocardium. The aim of this study was to assess if CMR with late enhancement technique identify potential pathogenic mechanisms of IVNC. **Methods** Patients with suspected IVNC by Doppler echocardiography were referred to a CMR scan to confirm diagnosis. CMR scans were performed in 1.5 Tesla scanners (Vision or Avanto, Siemens). Morphology was assessed by T1, T2 and Haste sequences, ventricular function and volumes by cines sequences, and late enhancement gadolinium by inversion recovery sequences. Diagnosis of non-compaction was confirmed by a ratio of non compacted /compacted myocardium > 2.3 in the left ventricle at end-diastole. **Results** We studied 14 patients that had criteria for non-compaction by Doppler echocardiography and CMR. The mean age was 32 ± 11 years, 53% were male, the mean left ventricle ejection fraction was 51 ± 13 %, left ventricle end-diastolic volume was 172 ± 49 ml and left ventricle end-systolic volume was 88 ± 45 ml. The mean non-compacted / compacted ratio was 3.1 ± 0.52. None of these patients had late enhancement after gadolinium injection. **Conclusions** Late enhancement with gadolinium is commonly seen in diverse forms cardiomyopathies that have fibrosis, necrosis or infiltration of the myocardium. The lack of late enhancement suggests that necrosis, fibrosis or infiltration of the affected myocardium may not play a role in the pathogenesis of this idiopathic form of cardiomyopathy.

P1271

Cardiovascular and electrocardiographic abnormalities observed in patients undergoing chronic dialysis

P. Nasca[1].

Santos JC, Shehadi J, Nasca P, Reinoso S, Grinblat N, Seú F, Bertini D, Piazza S, Galli B, Pereyra JM **Introduction:** The major cause of death and morbidity in End Stage Renal Disease (ESRD) patients is of cardiovascular (CV) origin. The Electrocardiogram (EKG) is a useful tool to screen for cardiovascular disease in these patients. Material and **Methods:** We conducted a descriptive cross-sectional analysis in a population of 240 patients with ESRD undergoing chronic dialysis (hemodialysis and peritoneal dialysis). Twelve lead standard EKGs were done previous to the dialysis session. The EKG data were interpreted by cardiologists. We also looked for the prevalence of different cardiovascular risk factors in this population. **Results:** The population studied was of 240 patients (n=240), 104 females and 136 males, mean age 55 years (rank 17 to 89 years), mean time in HD 47 months (rank 2–192 months). 110 patients suffered from hypertension. Nutritional parameters: BMI < 20:20 pts, BMI 20–25: 86 pts, BMI > 25: 136 pts, BMI > 30: 30 pts and BMI > 35: 5 pts. Patients with albumin levels < 4 mg/dl: 135. Lipid profile: Total cholesterol > 200: 39 pts, HDL-C < 45: 166 pts, LDL-C > 100: 113 pts, Triglycerides > 150: 112 pts. The EKG alterations were classified as follows: -Prolongation of the corrected Qt interval: (50,6%). -Rhythm: Sinus rhythm (94%), Atrial fibrillation (6%). -Premature Ventricular Complex (PVC): without PVC (87,3%), with PVC (12,6%). -Intraventricular conduction abnormalities (IVCA): without IVCA (84%), Right Bundle Branch Block (RBBB) (2%), Left Bundle Branch Block (2%), Left Anterior Bundle Block (LABB) (6%), RBBB and LABB (4,6%), Left posterior block (0,6%) and RBBB + LABB + first degree AV block 1 (0,6%). -Other abnormalities: Ischemic Heart Disease: (30,6%), Left Atrial Enlargement (6%), Left Ventricular Hypertrophy (LVH) (5,3%). High prevalence of PVC (18,7% vs 6,7%), and IVCA (26,7% vs 5,3%) was observed in patients older than 60 years. **Conclusions:** In this population of stable patients undergoing chronic hemodialysis, a high prevalence of prolongation of the Qtc interval was observed (50.6%), as well as EKG signs suggesting ischemic heart disease (30.6%). We observe also a high prevalence of PVC and IVCA in patients older than 60 years. It is also of interest the low prevalence of EKG signs of LVH, a finding that does not match with that seen in the literature. Perhaps this makes the EKG useless to evaluate LVH in this setting. These data confirms the high prevalence of EKG abnormalities besides the high cardiovascular risk of this population in which we found a high prevalence of hypertension, lipid abnormalities and nutritional disorders.

P1272

Regular and chronic use of statin prevents Atrial Fibrillation in the early postoperative period of elective cardiac surgery

R. N. Campos[1], R. J. Alves[1], E. S. Hara[1], K. Nakiri[1].

Background: atrial fibrillation is a frequent complication in postoperative of cardiac surgery, and the use of statin can decrease the incidence of this arrhythmia. Objective: To evaluate if the chronic and regular use of statin prevents atrial fibrillation in the early postoperative period of elective cardiac surgery. **Methods:** Study carried out in 107 patients submitted to cardiac surgery (coronary or valvular heart disease), 66% males, 25 to 84 years old, mean age 60 years. We evaluated the role of statin in regular use regarding the appearance of atrial fibrillation analyzing groups with and without statin in early postoperative period. Patients with previous atrial fibrillation were excluded. **Results:** Forty two patients (39%) presented atrial fibrillation in the early postoperative period, 11 (26%) using dayly some type of statin and 31 (74%) not. Forty five percent with no regular use of statin developed atrial fibrillation while only 22% with statin presented the arrhythmia (ρ=0,02). In patients with isolated coronary artery bypass surgery, the most frequent in this study, 47,5% with no statin developed atrial fibrillation while only 23% with statin had the arrhythmia (ρ=0,02). The presence of atherosclerotic risk factors (diabetes mellitus, dyslipidaemia and smoking) and risk factors for atrial fibrillation were similar between the groups, demonstrating the equivalence of the samples (ρ=0,34). **Conclusion:** The chronic and regular use of statin previous to cardiac surgery lowers significantly the incidence of atrial fibrillation in the early postoperative period.

P1273

Significant percentage of patients using antihypertensive medication are not presenting adequate levels of blood pressure in the twenty-four hours recording

R. N. Campos[1], R. J. Alves[1], T. Inada[1], E. Florido[1], K. Nakiri[1].

Background: Arterial hypertension is one of the main risk factors for coronary arterial disease. However, the success of treatment of high blood pressure with drugs in the regular clinical practice does not seem to reach the goals established by major trials. Objective: To evaluate the percentage of patients using antihypertensive medication with and without adequate blood pressure levels in association with the incidence of atherosclerotic risk factors. **Methods:** Prospective study, carried out with 80 subjects, 31 males, 40 to 79 years old, mean age 61 years. The patients were evaluated by analyzing the parameters of the ambulatory blood

pressure monitoring for 24 hours and considering as normal values those in the criteria of VII Joint National Committee. The relationship with atherosclerotic risk factors was evaluated. **Results:** Of the 80 analyzed patients, 60 (75%) presented abnormal blood pressure levels, 35 (60%) females. Only 20 patients (25%) were in normal range of blood pressure, 14 (70%) females. No difference was observed in the incidence of smoking (5%) between the two analyzed groups, either in normal or abnormal blood pressure level (ρ=0,07). Others diseases as dyslipidaemia (p=0,1), diabetes mellitus (p=0,01), hypothyroidism (p=0,01) and coronary artery disease (p=0,11) were more frequent in the group with inefficient blood pressure control than in those with controlled blood pressure (40%, 33%, 33% and 20%) vs (20%, 5%, 5% and 5%), respectively. **Conclusion:** Only a small percentage of patients presents adequate blood pressure levels in use of antihypertensive medication. Atherosclerotic risk factors were more frequent in the not controlled blood pressure group.

P1274

Mortality in the STEMI according to the age. Experience in Cordis Institute of the heart.

M. Correa[1], M. Sanjurjo[1], R. Codutti[1], M. Lopez[1]. [1]*CORDIS* [2]*CORDIS* [3]*CORDIS* [4]*CORDIS*

Introduction. In the STEMI the age is one of the factors of greater impact has on the prognosis. The increase of the age is associated to an exponential increase of intra and extrahospitalary mortality. **Objective.** To know the existing association between hospitable mortality by STEMI and the age. **Material and methods:** retrospective analysis of 243 patients who entered with diagnosis of acute infarct of myocardium With ST-Elevation between January of 1997 and August of 2007 and that received primary angioplasty. **Results.** The age average was of 61,2 years. 186 patients (76.5%) they were men. They were grouped to patients according to the age in five groups: Smaller patients of 50 years (35); Patients between 50 and 60 years (83); Patients between 61 and 70 years (68); Patients between 71y 80 years (52) and greater patients of 80 years(5). In the first group mortality was of 11,4%, with a cup of success in the PCI of 91.1%. In the second group mortality was of 14 %, with a cup of success in the PCI of 90.3%. In the third group mortality was of 11%, with a cup of success in the PCI of 95.5%; in the fourth group mortality was of 21 %, with a cup of success in the PCI of 81%; and in the last group mortality was of 40%, with a cup of success in the PCI of 100%. **Conclusion:** although there was a greater mortality between the greater patients of 70 and 80 years with respect to the other groups this was not significant (p ns); and the succes of PCI was similar in the five groups.

P1275

RISF FACTORS REDUCCION WITH IMPLEMENTATION OF NUTRICIONAL AND EXERCISE PROGRAM

M. Alcocer[2], **A Nava**[1], S Leon[3], L Robles[4], E Castro[5], E Tirado[6], E Garcia[7], J Alvarez De La Cadena[8], L Mendoza[9], Y Prior[10]. [1]*INSTITUTO DE CORAZON DE QUERETARO, MEXICO*

Introduction: Atherosclerosis increase presentation in relationship with risk factors, some of them are possible to reduce with adequate general recommendations, including nutritional and physical activity program. **Objective:** Reductions of risk factors with a nutritional adjustment of 500kcal per day and progressive physical activity to obtain more than 90 minutes per week. **Results:** We include 70 patients of nutrition clinic from cardiac institute of Queretaro, Mexico, demonstrate: diabetes 10 %, hypertension 41 %, Dislipidemia 33 %, cardiovascular disease 27 %, smokers 9 %, sedentary 72 %. Anthropometric parameters showed initial weight 86.1±18.7kg and after 6 months later 75.5±15.5kg ($p < 0.0001$), waist perimeter from 105.4±14.5cm reduce to 95.4±11.1cm, and initial mass index 30.13±5.7 reduce to 28.2±4.2. Exercise also increase form initial activity more than 90mintes per week in 28 % to 81 % after 6 months of follow up. **Conclusions:** Adequate, moderate and progressive nutritional and exercise program make significant changes in cardiovascular risk factors.

P1276

Discrepancy between Perceived Obesity Status, Self-reported, and measured BMI in the US population; and the strategies employed for weight loss or maintenance: A NHANES 2003–2004 Study.

Ruchika Goel[1], Sunil Kumar Agarwal[1], Nikhil Gupta[1]. [1]*University of North Carolina, Chapel Hill, NC, USA*

Objective: Obesity is a major epidemic in US population. Perceived overweight or obese status can be an important determinant in pursuing healthy behavior. **Methods:** Data of 6166 subjects from NHANES 2003–2004 public-use datasets were analyzed. All analyses were done after applying sampling weights to extrapolate results to the US population. BMI >25 to <30 was defined as overweight and BMI>= 30 was defined as obese. "Measured BMI" was based on examined weight and height and "Self-reported BMI" was based on self-reported weight and height. Perceptions about obesity status and strategies employed (if any) to lose weight (if perceived overweight or obese) and to maintain their weight (if perceived normal) are reported. **Results:** The mean age of the study sample was 44.2±0.6 years (range 16- 85 years). The percentage of individuals considering themselves as overweight/obese, about-the-right weight, and underweight was 54.7±1.1, 39.9±1.1, and 5.3±0.3, respectively. Based on "measured BMI", 59.7±0.9% of the population was categorized as overweight or obese (overweight=30.9%, obese= 28.8%). Based on "self-reported BMI", 60.4±1.0% of the population was categorized as overweight or obese (overweight=33.2%, obese= 27.2%). The concordance of self- reported and measured BMI classification was 82.2±0.8 (percentage correctly classified). Seventy five percent of the overweight/obese individuals perceived themselves as overweight/obese, while 24% perceived themselves as just-about-right weight and only 1% of them perceived themselves as underweight. A desire to lose weight was reported in 96.7±0.1% of the individuals perceiving themselves as overweight/obese and 20.2±0.3% of those perceiving their status as normal, while, 73.8±0.2% of the perceived normal wished to maintain their weight as such. Among the people who attempted to lose/maintain weight in the previous year, the most common strategy employed was by eating less food (43.7%). This was followed by exercise (40.5%), decreasing percentage fat intake (27.7%), switching to food with lower calories (27.4%), skipping meals (12.9%), eating more diet foods (9.2%), joining a weight program (6.1%), using a liquid diet formula (5.3%), and using prescription diet pills by 2.2%. and non-prescription diet pills by 0.6%. **Conclusions:** There was about 18% misclassification of obesity status using self-reported BMI in the US population. About one fourth of the overweight/obese individuals perceive their weight status as normal. Increase in efforts towards individual education and counseling about their weight status and interventions to lose weight are necessary.

P1277

Evaluation of diastolic function in the elderly: comparison of Echo Doppler parameters in patients with and without hypertension.

N. Allende[1], H Deschle[1], A Lakowsky[1], A Miranda[1], D Sanchez Lucero[1], R Calviño[1], J Carabajales[1]. [1]*SANATORIO MATER DEI*

Objective: Diastolic function usually evolves with advancing age showing progressive decrease of E/A relation in left ventricular inflow pattern. We investigated if diastolic function in non hypertensive elderly people differs from hypertensive (HTA) counterparts. **Method:** We prospectively collected in a database echo Doppler results of 108 apparently healthy non hypertensive patients older than 64 years old. We compared them with 108 studies of age and sex matched HTA patients (randomly selected from a 355 sample). Patients with other cardiovascular or clinical comorbidities that could potentially affect diastolic function were excluded. In order to avoid measurements bias we only included patients in sinus rhythm with heart rate below 85 beats/min. Studies were performed in stable condition and following usual techniques. We used non paired T test for statistical comparisons of continuous variables and Chi square test for categorical ones. **Results:** Age range of the study sample was between 65 to 88 years old with a median of 71 for both groups. LV diastolic dimension and septal/posterior wall thickness were similar in both groups. We found no difference in left ventricular mass index, nor in relative wall thickness between the two groups. However E/A relation was lower in HTA patients (0,91 Vs 0,99 P:0,02). Left atrial size was significantly increased in HTA patients (40 Vs 38mm P:0,001). When Ventricular geometry was analyzed a tendency to more eccentric hypertrophy and concentric remodeling was observed in HTA group. **Conclusion:** In spite of usual changes in diastolic function with advancing age, this modifications are more pronounced in HTA patients. The increase observed in left atrial size may reflect an adaptation mechanism to this situation. These two findings may be more sensitive markers of LV pressure overload than LV mass index in the elderly.

P1278

Serum Levels of interleukins 1β, 6, interleukin 2 Receptor and C Reactive Protein for Diagnostic and Prognostic Evaluation in Unstable Angina.

J. Petriz[1–3], A Brasileiro[1], D Albuquerque[1–2], R Abtibol[1], R Gusmão[1], A Figueiredo[1], P Resende[1–3], N Souza E Silva[3], J Moll[1], F Albanesi[1–2]. [1]*BARRA D'Or HOSPITAL* [2]*State University of Rio de Janeiro* [3]*Federal University of Rio de Janeiro*

Introduction: Cytokines are biological elements with systemic and tissular action and its involvement in acute coronary events are based on its capacity to modulate the inflammatory processes involved in the progression and vulnerability of the atherosclerotic plaque. The interleukin 1β (IL1β) is a typical representative of cytokines with pro-inflammatory action which induces the production of interleukin 6 (IL6). The IL6 is recognized as the "messenger" cytokine and promote the liver production of C Reactive protein (CRP). The interleukin 2 Receptor (IL2R) plays an important role in the activation of T lymphocytes and it is a sensitive marker of systemic activation of mononuclear cells. **Purpose:** The aim of this study was to compare the serum levels of IL1β, IL6, IL2R and CRP in patients (pts) with unstable angina (UA) with these cytokines levels on stable chronic coronary disease (SCCD) and evaluate the prognostic value of these inflammatory markers in UA pts. **Methods:** We measured (chemiluminescence immunometric assay) serum concentration of IL1β (5pg/ml - 1000pg/ml), IL6 (5pg/ml -1000pg/ml), IL2R (5U/ml - 7200U/ml) and CRP (0.01mg/dl - 890mg/dl) in 92 consecutive pts (age= 62 ± 9 y, 61 men) with UA (III B Braunwald class) and 41 pts (age= 64 ± 7 y,28 men) with SCCD. All pts had obstructive coronary disease documented by a previous coronary angiography or performed during hospitalization. We also verified the absence of serum elevation of troponin I, infection signs, other inflammatory diseases, recent trauma or surgery. Peripheral venous blood samples were taken from pts with SCCD during routine evaluation and from UA pts after admission to coronary care unit. All cardiovascular events occurred in UA patients were registered for prognostic assessments. **Results:** The IL1β levels were not detectable (<5 pg/ml) in the two groups studied. The IL2R levels were not significantly different between UA and SCCD pts. IL6 and CRP levels were significantly higher in UA pts ($p<0.001$ for both comparisons).The IL6 and CRP cut-off values that best discriminate UA from SCCD pts by ROC Curve and the respective specificity values (spec) were 10 pg /ml (88.6%, CI 95%= 73.2–96.7%) for IL6 and 0.94mg/dl (85.7%, CI 95% = 69.7–95.1%) for CRP. We found a positive association between IL2 levels and cardiovascular events in UA pts. The level of 435U/ml (spec= 69,4% / IC 95%= 51,9%–83,6%) was the most accurate cut-off for prediction of in-hospital events. The IL6 (p=0.017) and CRP (p=0.06) levels and current smoking ($p<0.001$) were associated with the presence of UA in multivariate analysis adjusted for age, hypertension, diabetes and male sex. **Conclusions:** The present study shows that CRP and IL6 levels were significantly higher in pts with UA compared to those with SCCD and IL2R serum levels were associated with in-hospital events between UA pts. These data may provide incremental diagnostic and prognostic data to support medical decision making in UA.

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Percutaneous Left Ventricular Assist in Ischaemic Cardiac Arrest

V. Tuseth[1], M Salem, R Pettersen, K Grong, JE Nordrehaug. [1]*Department of Heart Disease, Haukeland University Hospital* [2]*Department of Heart Disease, Haukeland University Hospital* [3]*Department of Heart Disease, Haukeland University Hospital* [4]*Department for Surgical Sciences, University of Bergen, Haukeland University Hospital, N-5021 Bergen, Norway.* [5]*Department of Heart Disease, Haukeland University Hospital*

Background Ischemic cardiac arrest represents a challenge for optimal emergency revascularization. A percutaneous left ventricular assist device (LVAD) may help support circulation during percutaneous coronary intervention (PCI) and could improve clinical outcomes. Such a device could help maintain systemic blood delivery during cardiopulmonary resuscitation (CPR) and may also facilitate PCI by allowing short-term interruption of chest compression with less detrimental consequences. We investigated the ability of a percutaneous transfemoral left ventricular assist device (Recover LP 2,5®; Abiomed, Aachen, Germany) to deliver blood to the systemic circulation during cardiac arrest, and randomized two groups to receive either conventional or intensive fluid infusion to evaluate the effect of increased right side filling on pump function. **Methods and Results** The study was an acute experimental trial with pigs under general anaesthesia. Farm pigs (n=16) of both sexes had LVAD support during ventricular fibrillation (VF) and were randomized to conventional or intensive fluid. After randomisation for fluid infusion VF was induced by balloon occlusion of the proximal left anterior descending artery. LVAD and fluid was started after VF had been induced. Brain, kidney and myocardial tissue perfusion, and cardiac index, were measured with microsphere injection technique at baseline, 3 and 15 minutes. Additional hemodynamic monitoring continued for at most 30 minutes. Mean cardiac index at 3 minutes of VF was 1.2 L.min/m2 (28% of baseline). Compared to baseline; mean perfusion at 3 minutes was 65% in the brain and 74% in the epicardial myocardium supplied by the open left circumflex artery suggesting possible autoregulation augmenting the proportion of flow to these organs. A moderate but non significant decline was seen at 15 minutes. At 30 minutes LVAD function above 30% of the initial value after induction of VF was sustained in 11 animals (8/8 intensified fluid vs 3/8 conventional fluid) and was associated with intensified fluid loading ($P<0.001$). **Conclusions** During VF a percutaneous LVAD may assist systemic circulation with potential preferential flow to vital organs. Intensified fluid loading may be beneficial for LVAD performance. This approach may improve clinical and technical results in PCI during cardiac arrest. Further investigation is needed to establish a potential clinical benefit.

P1281

ASSOCIATION OF CARDIOVASCULAR EVENTS WITH GLYCOSYLATED HAEMOGLOBIN IN DIABETIC PATIENTS

P. Karki[1], R K, Deo[1], S K Sharma[1], P Acharya[1]. [1]*B.P.Koirala Institute of Health Sciences,*

Background: In persons with diabetes, chronic hyperglycemia (assessed by glycosylated hemoglobin level) is related to the development of microvascular disease; however, the relation of glycosylated hemoglobin (HbA1c) to macrovascular disease is less clear. **Objective:** To study the association of cardiovascular events (CVE) with glycosylated haemoglobin in diabetic patients. **Design:** Case control study **Setting:** B. P. Koirala Institute of Health Sciences (BPKIHS), Dharan, Nepal **Materials and method:** 50 diabetic patients with recent cardiovascular events: myocardial infarction (MI) or stroke was included in the study. There were 25 patients of myocardial infarction and 25 patients of stroke. 50 diabetic patients without cardiovascular events were taken as control. **Results:** After adjustment for age, smoking, body mass index, systolic blood pressure and total cholesterol at baseline, level of HbA1c was statistically significant ($p = 0.017$) among patients with CVE. For MI, level of HbA1c was statistically significant ($p = 0.018$) while for stroke, level of HbA1c was not significant ($p = 0.694$). Mean blood glucose also predicted CVE and MI but not stroke in this study (p values = 0.006, 0.006 and 0.670 respectively). Fasting and postprandial plasma glucose was statistically significant in CVE (p values = 0.024 and 0.019 respectively). Urine protein was statistically significant for CVE, MI and stroke (p values = 0.000, 0.032, 0.032 and OR 4.571 (95% CI: 1.963–10.646), 2.667 (95% CI: 1.043–6.815), 2.667 (95% CI: 1.043–6.815) respectively. **Limitations:** Sample size was limited due to time constrain and limited resources. Cases with peripheral artery disease were not included in the study. **Conclusion:** Glycosylated haemoglobin is associated with cardiovascular events and myocardial infarction but not stroke.

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Effects of Cilnidipine versus Atenolol on Left Ventricular Diastolic Function and Hypertrophy in Essential Hypertension -CANDLE Trial

W-J Chung[1], BC Oh[1], EO Shim[1], M-S Shin[1], WC Kang[1], CI Moon[1], SH Han[1], KK Koh[1], TH Ahn[1], EK Shin[1]. [1]*Gachon University Gil Medical Center*

Background: Effects of Cilnidipine versus Atenolol on Left Ventricular Diastolic Function and Hypertrophy in Essential Hypertension (CANDLE) study was designed as a prospective, randomized, double-blind, parallel-group to test whether cilnidipine achieves greater left ventricular (LV) mass reduction and improves LV diastolic function than does atenolol. **Methods:** Seventy-two patients with uncomplicated essential hypertension and increased LV mass index at screening echocardiography were randomly assigned and forced-titrated to 20 mg/d cilnidipine or 100 mg of atenolol for 36 weeks. Echocardiography, ambulatory blood pressure monitoring, biochemical studies including NT pro-BNP and 24-hours urine microalbumin were measured at baseline and after 36-weeks therapy. **Results:** Clinical examination and blinded echocardiogram in a per-protocol analysis of 28 cilnidipine-treated and 26 atenolol-treated patients revealed similar reductions in systolic/diastolic pressure (-16.5/8.9 versus -23.9/14.8 mmHg) and LV mass index (-21.4 versus -19.5 g/m^2). Interestingly, cilnidipine-treated group showed reduction on left atrial (LA) volume index but atenolol-treated group showed more enlarged LA (-5.1 versus 7.3 %, $p=0.035$). **Conclusions:** Both cilnidipine and atenolol similarly and effectively reduced blood pressure and LV mass index. However, only cilnidipine reduced LA volume index, whereas atenolol increased. Cilnidipine may provide more beneficial effect on the management in essential hypertension with diastolic dysfunction.

P1283

2-Dimensional strain echocardiographic assessment of myocardial function in patients with myocardial bridge.

C. Kyoung Im[1], L. Dong Won[1], L. Hyeon Gook[1], K. Tae Ik[1]. [1]*Division of cardiology, Maryknoll General Hospital*

Aims: We sought to approach for quantitative echocardiographic assessment of myocardial function in patients with Myocardial bridge by 2-dimensional strain, novel software. **Methods and results:** Novel computer software for tissue tracking echocardiography for advanced wall-motion analysis was performed in 18 symptomatic patients (mean age 57.1± 9.7 years, 10 female) with myocardial bridging of left anterior descending coronary artery and age matched 20 healthy controls. Conventional wall-motion scoring was normal in all patients, and the software adequately tracked them. The maximal angiographic systolic lumen diameter reduction within the myocardial bridges was 71±12.6% at rest, with persistent diameter reduction of 31.2±11.3%. Radial strain and displacement of anterior segments were significantly reduced than posterior segments at the papillary muscle level (30.9±13.8% vs. 51.8±17.3% and 4.8±"b0.9 vs. 5.9±1.5, respectively, all $p<0.05$), and showed plateau (39% and 33%) or biphasic (50% and 56%) patterns. Time from R wave on electrocardiography to transition from regional systole to early diastolic lengthening (Tr) was significantly delayed in patients with myocardial bridge than controls (497±20.4 ms vs. 348±12.5 ms, $p<0.05$). **Conclusion:** Delayed systolic contraction and diastolic relaxation is an important mechanism contributing to ischemia in patients with myocardial bridge. 2-dimensional strain can accomplish real-time wall-motion analysis, and has the potential to improve identification and functional quantification of myocardial bridge.

P1284

Comparison of Cardiac Structure and Function in Diabetes Mellitus with and without Systemic Hypertension

C. Kyoung Im[1], K. Bohyun[2], L. Donwon[1], L. Hyeongook[1], K. Taeik[1]. [1]*Division of Cardiology, Maryknoll General Hospital* [2]*Division of Endocrinolohy, St. Mary Hospital*

Background and Objectives: As hypertension and left ventricular hypertrophy (LVH) frequently coexist with diabetes, we sought in this study to compare myocardial functional and structural changes in diabetic patients with or without hypertension with those in nondiabetic subjects with hypertension (essential hypertension), in order to identify the role of diabetes alone in relation to myocardial dysfunction. **Subjects and Methods:** We studied 50 patients with essential hypertension (HTN, 20 men, 30 women, aged 59 ±12 years), 54 diabetes mellitus patients without hypertension (DM-HTN, 24 men, 30 women, aged 60±9 years), 53 diabetes mellitus patients with hypertension (DM+HTN, 23 men, 30 women, aged 61±7 years), 49 normal subjects (22 men, 27 women, aged 56 ± 13 years). We used echocardiography comprising standard 2-dimensional and conventional Doppler imaging for the estimation of left ventricular mass index (LVMI), relative wall thickness (RWT) and Doppler-derives myocardial performance index (MPI). Subjects were considered to have: normal geometry (NG) if both LVMI and RWT were normal (LVMI<104g/m2 in female, LVMI<116g/m2 in male, RWT <0.43); concentric hypertrophy (CH) if both were elevated; eccentric hypertrophy (EH) if LVMI was elevated and RWT was normal; and concentric remodeling (CR) if LVMI was normal and RWT was elevated. **Results:** The MPI was significantly higher in patients with essential hypertension and diabetes, especially DM+HTN (HTN=0.48±0.13; DM-HTN=0.41±0.09; DM+HTN=0.53 ±0.11) compared to controls (0.31"b0.11, $p<0.05$). LVMI and RWT were significantly higher in patients with essential hypertension and diabetes, especially DM+HTN (HTN=132.2±44.4 g/m2 and 0.45±0.11; DM-HTN=125.9±34.4 g/m2 and 0.44±0.07; DM+HTN=153.9±42.9 g/m2 and 0.48 ±0.07) compared to controls (108.9±22.2 g/m2 and 0.39±0.05, $p<0.05$). **Conclusion:** Our study demonstrated the early appearance of adverse myocardial functional and geometric changes in diabetic patients and the contributory effects of diabetes to myocardial impairment and LV hypertrophy produced by hypertension.

P1285

10 - years investigation of influence of depression on myocardial infarction risk at the population of men of 25–64 years in Russia: epidemiological views.

V. Gafarov[1], **E. Gromova**[1], I. Gagulin[1], A. Gafarova[1]. [1]*Collaborative laboratory of Epidemiology Cardiovascular Diseases Siberian Branch of the RAMS*

Purpose of the study: Research of influence of depression on myocardial infarction risk at men of 25–64 years. **Materials and methods:** Within the framework of the program WHO MONICA - psychosocial it was carried out scrinning of the population in 1994. Casual representative sample of men (657 persons) in the age of 25–64 years, inhabitants of one district of Novosibirsk were investigated. The response was 82,1%. The period of supervision has made 10 years (1994–2004 years). Cox - proportional regression model was used for an estimation of relative risk. **Results:** The relative risk of development of myocardial infarction in group of men 25–64 years for the 5-years period appeared in 2,26 times above at men with depression. In age group 55–64 years the relative risk of development of myocardial infarction, within 5 years after scrinning in 2,8 times was higher among the men having symptoms of depression. Within 10 years from the beginning scrinning the relative risk of development myocardial infarction also was high, and as a whole has made in - 2,4 times above at men with depression,

than without it. Prevalence of depression at persons with the arisen myocardial infarction has made 65,8 %. The highest relative risk of myocardial infarction was observed at men with depression and workers of heavy physical work concerning groups, pensioners; having unfinished average - an elementary education; widows and dissolved. **Conclusion:** The received results allow to draw a conclusion, that the risk of occurrence of myocardial infarction is connected to depression which occurrence is caused by the social and economic status.

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OVERWEIGHT, OBESITY AND OTHER RISK FACTORS FOR ISCHEMIC HEART DISEASE IN 10 TO 18-YEAR OLD SCHOOLCHILDREN

S. Barbiero[1], L. Pellanda[1], C. Cesa[1], P. Campagnolo[1], F. Beltrami[1], C. Abrantes[1]. [1]*Institute of Cardiology of Rio Grande do Sul / FUC*

Objective: To estimate the prevalence of overweight, obesity and nutritional habits in 10 to 18-year old schoolchildren. **Methods:** Contemporary, cross-sectional, population based study, with stratified probabilistic sample of secundary schools in Porto Alegre, to a total of 511 schoolchildren. Data on family risk factors, anthropometrics and eating habits was collected. **Results:** The prevalence of excess weight was 27.6% among the schoolchildren, 17.8% with overweight (BMI≥P85

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TYPE OF STRESS FOR MYOCARDIUM PERFUSION STUDIES: REVISION OF THE ADEQUACY OF INDICATIONS.

S. Armijo Rivera,(1), B. Morales Klinkert,(1) I. Lukzic Sandoval,(2) M. Peña Reyes,(1) J. Jensen,(3) Pablo Canales,(3). [1]*Unit of Nuclear Medicine, Hospital Clinic of the Chilean Air Force*; [2]*Unit of Cardiology Clinical Hospital of the Chilean Air Force.* [3]*School of Medicine, Universidad Mayor, Chile*

INTRODUCTION: Myocardial perfusion images are a widely used tool for the diagnostic and prognostic evaluation of Coronary Artery Disease. The sensitivity and specificity of Dipyridamole and exercise studies are similar, but the latter delivers information on tolerance, hemodynamic response and electrocardiographic changes at the time of exercise. **OBJECTIVE:** To quantify wrongs indications of Dipyridamole myocardial perfusion studies in Institutional population. To compare the quality of exercise between patients with Dipyridamole or exercise indications. Assess the cardiovascular events through one year clinical monitoring. **METHODOLOGY:** Retrospective and descriptive study conducted reviewing medical records of 316 patients that was studied by myocardial perfusion SPECT between July 2005 and August 2006. The studies were separated in Dipyridamole and physical exercise, and this group was divided between those who had indication of exercise (EX-EX) and those with an indication of Dipyridamole (DIP-EX). In both groups were analyzed MHR%, the stage reached in Bruce test and METs. Statistical analysis was done using Student's t. One year after the myocardial perfusion study, the cardiovascular events was assessed by review of medical records or structured telephone interview (cardiovascular death, heart attack, ischemia, revascularization, breathlessness, angina.) the results were expressed in % of patients in groups EX-EX, DIP-EX and Dipyridamole-Dipryridamole(DIP-DIP) **RESULTS:** Of 316 perfusion studies performed, 194 were with exercise. The group DIP-EX were 25 patients (17% of the 147 studies indicated with Dipyridamole). The MHR% reached in the group EX-EX was 93.25 ± 9.68 and the group DIP-EX was 89.92 ± 14.1 ($p = 0.265$). The average stage as the METs achieved were significantly lower in the DIP-EX group ($p = 0.015$ and $p = 0.0007$, respectively). These patients had a higher percentage of angina that the group EX-EX and lowest percentage of heart attack and cardiac failure that the group DIP-DIP. **CONCLUSIONS:** The indication of Dipyridamole for myocardial perfusion studies must be reviewed by a Cardiologist at the moment of the study, because there may be a high percentage of studies in which this Dipyridamole indication is inadequate: This patients could lose the opportunity to obtain prognostic additional information that justifies their choice whenever is possible.

TABLE 1: EXERCISE VARIABLES COMPARISON

Parameter	EX-EX	DIP-EX	p
MHR %	93,25 ± 9,68	89,92 ± 14,1	0,265
Stage on Bruce test	3,07 ± 1,04	2,5 ± 1,02	0,015
METs	9,01 ± 2,96	6,97 ± 2,46	0,0007

TABLE 2: CARDIOVASCULAR EVENTS IN A YEAR FOLLOW-UP (% OF PATIENTS)

	EX-EX n=169	DIP-EX n=25	DIP-DIP n=122
Cardiovascular death	1.18	4.00	4.92
Myiocardial infarct	0.00	0.00	1.64
Ischemia	0.59	4.00	1.64
Angina	1.018	4.00	0.82
Breathlessness	2.37	16.00	3.28
Cardiac failure	1.18	2.00	4.10
Revascularization	4.73	12.00	4.92

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Seeking medical advice of patients with myocardial infarction

V. Gafarov[1], A. Gafarova[1]. [1]*Collaborative laboratory of Epidemiology Cardiovascular Diseases Siberian Branch of the RAMS*

The purpose: To study within 22 (1977–1998) years of seeking medical advice (SMA) of patients myocardial infarction (MI).behind medical care and the reasons, on it influencing. **Materials and methods:** WHO programs "Register of Acute Myocardial Infarction" and "MONICA" were performed in population aged 25–64 years in one of district of city Novosibirsk in Russia. From January 1, 1977, to December 31, 1998, monitoring registered 5180 cases of MI. SMA was studied in 4093 patients with MI. **Results:** Within one hour to doctors addresses 18 % - 44,1 % patients with MI, from one hour up to 6–25,4 % - 64,8 %, from 6 till 24–10,8 % - 22,7 %. The number of the patients who have addressed behind medical care over 24 hours - 3,5 % - 35,5 % is significant. Dynamics SMA on years shows, that if till 1991 SMA on time intervals was stable, in 1991–98 has grown SMA behind medical care over day from the beginning of disease and has even more decreased within the first hour. Average time of the SMA patients with MI in the ambulance medical care from the beginning of an attack makes 20,6 hours, per general practice doctors - 65,6 hours, per a hospital - 39,2 hours Conducting reasons late SMA patients with MI behind medical care are: opinion that the attack can be stopped independently; did not see connection between a painful attack and disease of heart; did not know symptoms of a MI; and at last, thought to consult with an attack own forces. **Conclusion:** SMA patients with a MI behind medical care at the first o'clock from the beginning of disease for the long period of time remain unsatisfactory. Taking into account, that SMA patients with MI behind medical aid concerns to behavioral characteristics of the population, it is necessary to tell, that this problem social and it is necessary to solve through education of the population.

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NATIONWIDE TRENDS IN THE UTILIZATION OF MULTI VESSEL PERCUTANEOUS CORONARY INTERVENTION (MPCI) IN THE UNITED STATES.

MR Movahed[1], M Hashemzadeh[2], MM Jamal[3]. [1]*University of Arizona Sarver Heart Center and Southern VA Health Care System, Tucson, Arizona* [2]*Long Beach Veterans Affairs Medical Center, Long Beach, CA* [3]*Long Beach Veterans Affairs Medical Center, Long Beach, CA*

Background: To evaluate nationwide trends in the utilization of Multi Vessel Percutaneous Coronary Intervention (MPCI) in the past in comparison to recent years, we used a large data base from 1988 to 2004. Method: The Nationwide Inpatient Sample (NIS) database was utilized to calculate the age-adjusted rate for PCI from 1988 to 2004. Specific ICD-9-CM codes for Multi vessel PCI were used to compile the data. Patient demographic data was also analyzed from the database. **Results:** The NIS database contained 241,319 patients who had MPCI performed from 1988 to 2004. The mean age for these patients was 64.89 ± 11.84 years old. Male underwent MPCI at the double rate in comparison to female (male: 67.87, female 32.13). From 1988, the age-adjusted rate for MPCI gradually increased to more than 3 times in 1998 [(6.62 per 100,000 (95%CI=5.92–7.33) in 1988 and 23.92 per 100,000 (95%CI=21.62–26.22, $p<0.01$) in 1998] and accelerated to more than 6 time than original rate at the end of the study in 2004 (41.50 per 100,000 (95%CI=37.84–45.16) in 2004, see figure). **Conclusion:** The utilization of multi vessel PCI has dramatically increased to more than 6 times from 1988 to 2004 with acceleration in the recent years. The cause of this acceleration is most likely related to advancement in the percutaneous coronary interventional techniques

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Quality of Life Following Cardiac Transplantation: Do Gender Differences Exist?

V. Micevski[1], HJ Ross[1], J Ross[2], S Kozuszko[3], S Abbey[2]. [1]*Department of Cardiology, Toronto General Hospital, Toronto, ON, Canada* [2]*Department of Psychiatry, Toronto General Hospital, Toronto, ON, Canada* [3]*Department of Transplantation, Toronto General Hospital, Toronto, ON, Canada*

Background: Cardiac transplantation provides a viable therapeutic option for patients with advanced heart failure. Initially transplant studies focused on surgical techniques and outcomes. More recently, quality of life (QOL) post surgery has gained importance in the evaluation of transplant outcomes. The comparison of QOL components between men (M) and women (F) using disease specific tools has demonstrated no significant differences in the cardiac population. The use of a generic QOL tool, the Medical Outcomes Study 36-Item Short Form (MOS SF-36), will allow researchers to compare gender differences in the cardiac population with published norms. **Objective:** The purpose of this study was to examine gender-dependent differences in quality of life (QOL) of patients following cardiac transplantation using the MOS SF-36 QOL tool. **Methods:** This descriptive, prospective, cross-sectional study involved 87 non-randomized patients followed in the heart transplant program at a quaternary hospital in southern Ontario. One hundred and thirty participants were mailed a package including an introductory letter, consent forms, and a self-report questionnaire. Student t-test was used to compare the means of the 8 domains and the 2 summary component scales of the SF-36 between males and females. **Results:** Although 94 participants returned the study questionnaire, 7 did not identify their gender and thus were excluded from the analysis resulting in a 67% participation rate. Of the remaining 87 participants 14 (16%) were female. The mean age was 46.1+12.3 (F) and 56.4+14.0 (M) years ($p<0.05$). There were no statistically significant differences in the domain and component scores between genders (Table 1). A trend toward significance was identified in the area of social function. Men scored lower than women on questions identifying the presence of social support and networks ($p=0.061$). **Conclusions:** Quality of life measures may identify directions for the development of interventions that may impact patient care post cardiac transplantation. Concepts of QOL that are unique to either gender may provide areas of focus to better address the needs of this population. Overall, both men and women in this study scored lower on the 8 health concepts of the SF-36 compared to Canadian normative data when adjusted for age and sex. In our study population, social functioning was a health concept identified as a potential focus for men following cardiac transplantation. Future research, including multiple institutions and larger samples of female participants, may emphasize the need to address health concepts for which women scored lower in this analysis.

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In-vitro and in vivo pharmacodynamic properties of metoprolol in fructose hypertensive rats

C. Höcht[1], C Di Verniero[1], E Silberman[1], M Mayer[1], JAW Opezzo[1], F Bertera[1], CA Taira[1].
[1]*School of Pharmacy and Biochemistry, University of Buenos Aires*

It has been postulated that the overactivity of the sympathetic nervous system plays a key role in the development of the hypertensive stage in rats fed with a high fructose diet (F), an experimental model of insulin resistance related hypertension. The aim of the present work was to evaluate the compromise of β1-adrenoceptors in the regulation of blood pressure and heart rate in F rats. Male Sprague–Dawley rats were randomly divided into two groups: (1) Control (C, n = 30) with tap water to drink for 6 weeks; (2) fructose treated (F, n = 30) with fructose solution (10%, w/v) to drink for 6 weeks. A "shunt" microdialysis probe was inserted in the carotid artery in order to simultaneously determine metoprolol (MET) levels and mean arterial pressure and heart rate after MET (3 y 10 mg/kg, iv) administration. For the evaluation of the relationship between MET levels and its cardiovascular effects and the estimation of pharmacodynamic parameters of MET, a pharmacokinetic-pharmacodynamic (PK-PD) model with a separate effect compartment was used. Constant of dissociation for the β1-adrenoceptor of MET and its inverse agonistic activity were evaluated in vitro in isolated atria of C and F rats. No differences were found in unbound MET plasma levels between C and F groups. Consequently, estimated pharmacokinetic parameters were not different comparing both experimental groups. Although MET induced a greater hypotensive effect in F rats (Maximum effect (Emax): -24$\pm$1 mmHg, n=10, p$<$0.05 vs C) than in C rats (Emax: -14$\pm$1, n=10), there were no differences in MET potency for this cardiovascular effect. Although the bradychardic response to MET administration was similar in both experimental groups (C rats: Emax: -24.1$\pm$1.6 %, n=10; F rats: Emax: -24.0$\pm$1.7 %, n=10), MET potency for the chronotropic effect was greater in F rats (effective concentration yieldying half-maximal response (EC50): 164$\pm$22 ng/ml, n=10, p$<$0,05 vs C) with regard to C animals (EC50: 245$\pm$26 ng/ml, n=10). In-vitro activity of β1-adrenoceptors was not altered in F rats with regard to C group, considering that the constant of dissociation for the β1-adrenoceptor of MET (C rats: pKb: 7.29$\pm$0.13; F rats: pKb: 6.97$\pm$0.23) and its inverse agonistic activity (C rats: Emax: 25$\pm$5 %; F rats: 28$\pm$4 %) were similar in both experimental groups. In conclussion, our results demonstrate the compromise of β1-adrenoceptors in the mantainance of the hypertensive stage in F animals, considering that F rats showed a greater maximal response to the hypotensive effect of MET. A greater potency to the chronotropic effect of MET was found in F rats with regard to C animals. This greater potency was not caused by alteration in the activity of cardiac ß1-adrenoceptors, taking into account that MET constant of dissociation for the ß1-adrenoceptor and its inverse agonistic activity were not different comparing both experimental groups.

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Modification of some components of the cardiac beta-adrenergic system along the experimental Trypanosoma cruzi infection.

M.S. Lo Presti[1,2], H.W. Rivarola[1,2], A.R. Fernández[1], J.E. Enders[1], G. Levin[3], D.F. Comay[4], P.A. Paglini-Oliva[1,2]. [1]*Catedra de Fisica Biomedica. UNC. Argentina.* [2]*Catedra de Fisica Biomedica. UNLaR. Argentina.* [3]*Centro de Investigaciones Endocrinologicas - CONICET, Hospital de Niños Ricardo Gutierrez. Buenos Aires, Argentina.* [4]*INCOR. La Rioja. Argentina.*

Chagas' disease is one of the most important determinants of congestive heart failure and sudden death in Latin America. It has been demonstrated that the cardiac β-adrenergic signal transduction system is altered somewhere along it's pathway in *Trypanosoma cruzi* infected hearts and the study of this system would therefore be important for the understanding of the disease pathophysiology. In the present work, we studied some components of the cardiac β-adrenergic system in mice hearts infected with *T. cruzi*, Tulahuen strain, along the experimental infection: acute phase (30 days post infection – d.p.i.), indeterminate chronic form (75 d.p.i.), early cardiac chronic form (135 d.p.i) and late cardiac chronic form (365 d.p.i). We determined: the primary messenger (epinephrine and norepinephrine) levels in plasma by RF-HPLC; the cardiac β-receptor density and affinity by binding with trited dihidroalprenolol; the cardiac concentration of the second messenger (cAMP) (by ELISA) given its importance for the activation of protein kinase A and the consequent phosphorylation of the proteins involved in cardiac contraction; and the cardiac contractility and functional studies of the β-ARs as a response to the ligand binding to the receptor. Plasma catecholamines levels diminished with the evolution of the infection when compared to the uninfected controls (p$<$0.05). The β-receptor's affinity also decreased with the evotution of the infection when compared to the uninfected mice (p$<$0.05), while their density remained unchanged at the beggining of the infection and started to decrease in the early cardiac chronic form (p$<$0.05). cAMP levels were higher in the infected group (p$<$0.01) relative to the controls in all phases of the infection and increasing significantly increasing in the late cardiac chronic form. However, the basal contractile force remained unchanged, and the response to catecholamines increased only in the chronic indeterminate form of the experimental infection (p$<$0.05). The alterations in the signaling pathways of the cardiac β-adrenergic system start in the acute phase and progress with the evolution of the experimental infection. These results point to alterations at different levels of the system: 1) between catecholamines and the β1-receptors; 2) between the receptors activation and the adenylyl-cyclase activation; and/or 3) between cAMP and the contractile response. Since this system is the most powerful regulator of cardiac function, these alterations could be responsible for inducing the progressive cardiopathy.

P1293

MOLECULAR BASIS OF FAMILIAL HYPERCHOLESTEROLEMIA IN URUGUAY

M. Stoll[1], P. Esperón[1–2], V. Raggio[1], M. Lorenzo[1]. [1]*Area Genética Cardiovascular. Comision H. de Salud Cardiovascular* [2]*Cátedra de Biología Molecular Facultad de Química.Montevideo.Uruguay*

Autosomal-dominant hypercholesterolemia (ADH) has been identified as a major risk factor of morbility and mortality for early atherosclerotic coronary vascular disease (CVD). Since 2002 we began a pilot study of preventive cardiovascular disease in young adults for the first time in Uruguay. All patients included were clinically diagnosed with Familial Hypercholesterolemia (FH) using a uniform protocol and internationally accepted criteria (MEDPED). We estimate that 6000 individuals would be carriers of FH in our country if a frequency of 1:500 for this disease is considered, This configure a high risk group, under-diagnosed and therefore not receiving proper treatment. A case-finding program for the identification of patients with HF was established based in family investigation and molecular testing of the LDLR, APOB mutations and APOE and ACE I/D polymorphisms. All studied subjects provided written informed consent, and the study protocol was approved by our institution's ethics review board. DNA samples from clinically diagnosed FH patients have been analysed for the presence of LDLR gene mutations and the APOB R3500Q mutation. All patients, tested negative for the APOB R3500Q mutation, were routinely analysed for the promoter region, all exons and intronic boundaries of the LDLR gene after SSCP or direct sequencing. From 13 families studied we found 8 different causative genetic variants in the LDLR gene. The distribution of other mutations were: Afrikaner-1 and Padua-1 (exon 4), G1103$>$A (exon 8), T1352$>$C (exon 9), ins4 1384 (exon 10), and InsC2058 (exon 14). Two family groups presented the Lebanese mutation C2043A in exon 14 according to their christian-lebanese origin. Besides, we found 2 new mutations absent in databases: one located at the promoter within the SP1 binding site (-47C$>$A) where homo and heterozygous FH patients were identified, and a second located at exon 14 being an insertion of C at 2058. These variants were confirmed in other symptomatic and presymptomatic family members. The heterogeneity of mutations found is in accordance with the heterogeneous uruguayan population formed mainly by the immigration of European origin. This pilot program has demonstrated the usefulness of targeted screening for FH patient identification in Uruguay and a National Register is being implemented for preventive care and early treatment of HF patients.

P1294

Aldosterone synthase C344T polymorphisms determine circadian arterial blood pressure variation in resistant systemic arterial hypertension

P. R. Benchimol-Barbosa[1,2], A.D. Varanda-Rosario[1], M. Rollin-Ornelas[1], **F.D. Vilela**[2], C. Miranda[1], G.N. Gobbi[1], J. Barbosa-Filho[1,2], I. Cordovil[1,2]. [1]*Gama Filho University* [2]*National Institute of Cardiology, Health Ministry*

Introduction: Essential hypertension (EH) is a multifactor disorder determined by the interaction of environmental and genetic factors. Subjects who do not respond to drug therapy scheme consisting of three or more drugs including a diuretic are classified as Resistant Hypertension (RH). Genetic polymorphism of rennin-angiotensin-aldosterone system (RAAS) may determine circadian arterial pressure behavior and thus influence the risk for adverse outcomes in this population. **Objective:** We sought to investigate the influence of aldosterone synthase (AS) C344T polymorphism on circadian arterial blood pressure variation. **Methods:** We studied 181 subjects under regular follow-up at outpatient clinics of the Department of Arterial Hypertension. On admission, subjects received a standard drug scheme, consisting of ACE inhibitor, thyazide diuretic and beta-blocker, and were re-examined four weeks later. RH was determined by 24h-ambulatory arterial pressure monitoring. Thirty six subjects were true RH, and had 1D/2D echocardiogram to determine left ventricular mass according to Devereux formula. The C344T genotype (CYP11B2) was analyzed using PCR – based techniques by Perkin-Elmer 9600 device. Subjects were arbitrarily divided into two groups according to mean systolic blood pressure nocturnal fall $>$10% (deepers, N=9; G1) and $<$+10% (non-deepers, N=27;G2). Morning systolice blood pressure surge was assessed in both group. Contingency tables, Fisher exact test and Student t test analyzed, respectively, categorical and continuous variables. Odds ratio (OR) and respective exact 95% confidence interval was calculated. Alpha error level was set to 0.05. **Results:** Frequency distribution of AS genotypes were 43.8% TT, 40.6% TC and 15.6% CC (64.1% allele T and 35.9% allele C). Demographic, anthropometric and genetic data is presented in Table 1. In G1, AS genotypes distribution for CC, TC and TT was, respectively, 50.0%, 12.5% and 37.5%. In G2, AS genotypes distribution for CC, TC and TT was, respectively, 4.2%, 54.2% and 41.7% (CC vs non-CC: OR=23.0; 95% CI[1.5–1179]; p=0.009). In G1 and G2, left ventricular hypertrophy was observed, respectively, in 55.6% and 93% (OR=10.0; 95% CI[1.01–127.59]; p=0.02). **Conclusion:** Aldosterone synthase (AS) C344T polymorphisms determine circadian arterial blood pressure variation. In particular, CC genotype prevalence is higher in deepers than in non-deepers and may, thus, impact end organ damage.

TABLE1: DEMOGRAPHIC, ANTHROPOMETRIC AND GENETIC DATA:

Variable	G1	G2	p
N	9	27	-
Age (y.o)	55.2±9.4	55.8±9.2	0.87
Gender (F/M)	5 / 4	19 / 8	0.44
Follow-up time (y.)	3.5±1.6	3.8±1.5	0.61
Daytime SBP (mmHg)	152.6±10.2	152.4±10.4	0.97
Nocturnal SBP fall(%)	12.2±2.5	0.91±5.3	<0.001
Morning surge (mmHg)	23.9±17.2	15.8±10.8	0.10
Genotype CC / non CC (%)	50.0 / 50.0	4.2 / 95.8	0.009
Left ventricular hypertrophy (%)	55.6	92.6	0.02

data as mean±SD; SBP- systolic blood pressure

P1295

Cardiovascular disease risk and anaemia in diabetes. What's the association?

A. Silva[1], A Baptista[1], A Guedes[1], A Cabrita[1], P Neves[1]. [1]*Hospital Distrital Faro*

People with are disproportionately affected by cardiovascular disease (CVD), compared with those without diabetes. The traditional risk factors (obesity, dislipidemia, hypertension) do not fully explain the excess risk for CVD associated with diabetic nephropathy. Therefore, other non-traditional risk factors may be important in people with diabetes. Several studies hem have

demonstrated the association of non-traditional risk factor and the pathogenesis of CVD in people diabetic. The aim of our study was to evaluate the correlation of anaemia, renal function and CVD clinical outcomes in our population of patients followed in our "Diabetic Nephropathy" outpatient clinic. A retrospective analysis we included 90 patients (F= 52, M=48), mean age 56, 7±17,8 years, haemoglobin= 10, 0±1,8 g/dl, the renal function (GFR) a calculated MDRD formula (60,37±14,8 ml/min). To identify independent factor that would influence the CVD we used a multiple regression model. As the dependent variable we used the CVD and the independent variables we used the haemoglobin and GFR. In the multivariate analysis, the result is, GFR (r=-0,079, p=0,5) only haemoglobin (r=-0,235, p=0,04), is independently related to CVD. In our study showed no significant relation between GRF and CVD but, in contrast showed significant inverse association of haemoglobin level with CVD. In our population, a lower haemoglobin level is an independent risk factor the cardiovascular disease.

P1297

Tachycardia-induced cardiomyopathy by fascicular ventricular tachycardia in a patient with left ventricular noncompaction/hypertrabeculation: A Case Report

P. Pozzer[1], E. Perna[1], I. Reyes[1], L. Coronel[1], J. Silveyra[1], A. Bayol[1], R. Zoni[1], C. Babi[1].
[1]Instituto de Cardiología de Corrientes " [3]Juana F. Cabral"

1 - Introduction:: Tachycardia-induced cardiomyopathy (TIC) is known to appear in presence or absence of any estructural heart disease. In presence of an estructural heart disease TIC may contribute to an hemodynamic deterioration, and the control of rate or rythm can provide some improvement in the cardiac function. **2 - Case Presentation** We report a case of TIC in a patient with left ventricular noncompaction/ hypertrabeculation (LVNC). A 23 years-old male was refered to our clinic because he was found to have an asymptomatic dilated cardiomyopathy. At physical examination we found evidence of left ventricular (LV) enlargment, no murmurs, horizontal, bidirectional nistagmus and palsy of dorsiflection in the left ankle. The electrocardiogram demonstrated a sustained wide QRS complex tachycardia, with 125 beats per minute, wich was characterized as a fascicular ventricular tachycardia (FVT). The sinus rythm ECG demonstrated signs of left and right sided dilation, tall QRS complexes and ST/T wave abnormalities without conduction abnormalities. Transtoracic echocardiography showed dilated left and right cavities, depressed left ventricular eyection fraction (30 %), with no hypertrophy and an heterogeneous tissue in free mild-ventricular lateral wall, mild-ventricular anterior wall and apex of LV. We performed a volumetric 64-detectors multislice computed tomography wich showed hypertrabeculation of LV. Also it was evident absence of atheroscleortic coronary disease but an ectopic origin of the Left Circumflex Coronary Artery from the Right Coronary Artery was found. The patient underwent an electrophysiology study in wich was no possible the FVT induction. Through pace-mapping, de FVT focus was localized in the postero-septal LV wall, and radiofrecuency application was made. In the following days no episode of ventricular tachycardia (VT) or ventricular ectopics beats were observed. Finally cardiac magnetic resonance documented intramyocardial recceses of the mild-ventricular anterior and lateral wall and apex of LV, with signs of hipertrabeculation; systolic function was depressed (32 %). Serology was normal. Trough a bibliography revision we assesed the prognostic relevance of the cardiologic and neuromuscular findings in this patient, the therapeutic options and the association of LVNC and FVT. The patient became to another echocardiographic evaluation two months after the arrhytmia ablation, with medical teraphy on carvedilol and enalapril. His LV diameters, end-systolic and end-diastolic, were reduced from 64 mm to 55 mm and from 49 mm to 41 mm, respectively. The eyection fraction change from 30 % to 50 % in the later echocardiographic asessment. Despite the diagnosis of an irreversible cause of LV disfunction (LVNC) and having adverse clinical and echocardiographic prognostic findings, this patient also suffered from a reversible cause of hemodynamic deterioration of the LV, the TIC in its impure form; wich as well was due to a FVT in an incidental association with LVNC.

P1298

Prognostic value for CA125 antigen in newly diagnosed, advanced congestive heart failure

K. Filipiak[1], A Folga[1], M Grabowski[1], S Szmit[1], R Glowczynska[1], A Budaj[1], M Marchel[1], A Serafin[1], B Przybysz[1], G Opolski[1]. *[1]Warsaw Medical University, Poland*

Background: Cancer antigen CA125 has been reported as the new marker of congestive heart failure (CHF) prognosis. Aim of this study was to prospectively observe patients (pts) with newly diagnosed, advanced CHF, not optimally treated until the time of diagnosis, with long-term observations of CA125 and its changes after the standard therapy initiation. **Methods:** 65 pts, mean age 60.3+/-9.5 years,with CHF (left ventricular ejection fraction ≤40%) and II-IV NYHA class symptoms, were included. Blood samples for CA125 were taken at baseline and during 3, 6, 12-month follow-up period. All other clinical features and echocardiographic findings were put into the model. Multivariate logistic regression analysis was performed to estimate 1-year total mortality. **Results:**1) the mean CA125 values et entry were 66.01+/-143.47 U/ml (median: 24.19 U/ml) 2) The mean decrease of CA125 value in 3 month observation was 1.79 U/ml 3) one-year mortality after standard therapy initiation in this population was 16.9%. All deaths were cardio-vascular 4) multivariate logistic regression analysis demonstrated as independent death predictors: simultaneously raised NT-proBNP and CA125 concentrations at entry (both>median values; OR=492.9, p=0.006), renal failure with glomerular filtration rate ≤60ml/min (OR=19.4, p=0.024), inframedian left ventricular mass index (LVMindex <171.46 g/m2; OR=18.0, p=0.034), too low decrease of CA125 concentration at first 3-months of treatment follow-up (median) had higher mortality (40%) than the group with only one higher marker concentration (8%). The lowest mortality (5%) was observed in the group with both NT-proBNP and CA125 concentration below median (respectively: <1754 pg/ml and <24.19 U/ml). **Conclusions:** Baseline CA125 concentrations and the value of its change during first 3-month therapy add important information for CHF prognosis

P1299

Electrocardiogram (ECG) in acute coronary syndromes - the specific ECG features to predict total mortality

K. Filipiak[1], M. Grabowski[1], R. Glowczynska[1], A. Budaj[1], Z Huczek[1], M Marchel[1], A Serafin[1], T Imiela[1], F Szymanski[1], G Opolski[1]. *[1]Warsaw Medical University, Poland*

Background: Admission ECG remains the important tool for the risk prognosis, both in ST-elevation myocardial infarction (STEMI), as well as in non-STEMI and unstable angina (NSTEMI/UA) patients (pts). Aim: to prospectively compare the impact of different admission ECG features for short 30-day total mortality prediction in unselected acute coronary syndromes (ACS) pts treated in an university cardiologic centre with 24-hour invasive cardiology on-site. **Methods:** One-centre, 601 STEMI and 330 NSTEMI/UA pts registry from 2002–2003 years with 30-day follow-up, using multivariate logistic regression model for admission ECG analysis. The predictive value of the model was assessed with the evaluation of area under ROC curves. The model's goodness-of-fit was checked by Pearson or Hosmer-Lemeshow tests. **Results:** Mean age in 931 pts was 63 years, 27% with previous myocardial infarction, 16% diabetes, 6% NYHA III/IV class, 3% in cardiogenic shock. 88% STEMI and 81% NSTEMI/UA pts were treated invasively. 30-day total mortality was 9.8%. Left bundle branch block (LBBB) on admission (odds ratio [OR]=6; 95%confidence interval[CI]=2.28–15.8), pacemaker rhythm in ECG (OR=5.43; 95%CI=1.15–4.93), II/III degree atrio-ventricular block (II/III A-V) (OR=4.18; 95%CI=1.55–11.3), right bundle branch block (RBBB) (OR=3.74; 95%CI=1.65–8.46), ST depression in V1-V4 leads (OR=3.26; 95%CI=1.77–6), ST elevation in V1-V4 leads (OR=3; 95%CI=1.6–5.65), ST depression in II, III, aVF leads (OR=2.46; 95%CI=1.38–4.39), atrial fibrillation (OR=2.38; 95%CI=1.15–4.93), ST elevation in V5, V6 leads (OR=1.83; 95%CI=1.04–3.2), and heart rate >75/min (OR=1.7; 95%CI=1.01–2.86) were independent predictors of 30-day total mortality. The developed predictive model, proved to offer both high goodness-of-fit and predictive value (ROC=0,80). **Conclusions:** LBBB, pacemaker rhythm, II/III A-V, and RBBB in admission ECG are the most important predictors of the 30-day total mortality in unselected ACS pts, regardless of ST changes type.

P1300

The change in predicitive value of different electrocardiogram (ECG) features in follow-up of acute coronary syndromes patients

K. Filipiak[1], M. Grabowski[1], R. Glowczynska[1], A. Budaj[1], A. Kaplon[1], B. Przybysz[1], A. Serafin[1], F. Szymanski[1], J. Olszewski, G Opolski[1]. *[1]Warsaw Medical University, Poland*

Admission ECG remains the tool for the risk prognosis, both in ST-elevation myocardial infarction (STEMI), and in non-STEMI and unstable angina (NSTEMI/UA) patients (pts) but particular ECG features may change their prognostic value upon time. Aim: to prospectively compare the prognostic value of different admission ECG features for short 30-day (s), medium 6-month (m) and long-term 1-year (y) total mortality prediction in unselected 601 STEMI and 330 NSTEMI/UA pts treated according to contemporary guidelines. **Methods:** One-centre registry from 2002–2003 years, using multivariate logistic regression model for admission ECG analysis. Models' predictive value assessed with the evaluation of area under ROC curves, goodness-of-fit checked by Pearson/Hosmer-Lemeshow tests. **Results:** Mean age in 931 pts:63 years, 88% STEMI and 81% NSTEMI/UA pts treated invasively. S, m, and y total mortality were: 9.8, 12.5 and 14.1%, respectively. All independent ECG predictors of total mortality for s, m, and y follow-up are given in table. The developed predictive models, proved to offer both high goodness-of-fit and predictive value (ROC=0,77–79). **Conclusions:** ECG features may change their predictive value with the increase value of LBBB and the decrease value of ST elevation in V1-V4 for long-term total mortality.

ADMISSION ECG FEATURES' PREDICTIVE VALUE

	s OR [95% CI]	m OR [95% CI]	y OR [95% CI]	p for change trend
Non-sinus rhythm	2.38 [1.15–4.93]	2.8 [1.46–5.41]	2.52 [1.32–4.82]	
Pacemaker rhythm	5.43 [1.08–27.3]	6.6 [1.65–26.0]	5.51 [1.35–22.4]	
HR > 75/min	1.7 [1.01–2.86]	1.87 [1.18–2.97]	1.82 [1.17–2.82]	
ST elevation in V1-V4	3.0 [1.6–5.65]	2.15 [1.20–3.85]	1.73 [0.98–3.06]	p<0.05
ST elevation in V5-V6	1.83 [1.04–3.2]	1.75 [1.03–3.0]	2.02 [1.21–3.37]	
ST depression II, III, aVF	2.46 [1.38–4.39]	2.53 [1.47–4.37]	2.45 [1.43–4.21]	
ST depression in V1-V4	3.26 [1.77–6.0]	2.74 [1.62–4.63]	2.93 [1.77–4.86]	
Pathological Q in II, III, aVF		1.96 [1.1–3.5]	2.27 [1.31–3.92]	
Pathological Q in V1-V4			2.26 [1.21–4.24]	
II/III degree A-V block	4.18 [1.55–11.3]	3.0 [1.16–7.9]	3.07 [1.22–7.74]	
LBBB	6.0 [2.28–15.8]	5.57 [2.23–13.9]	10.61 [4.46–26.3]	p<0.001
RBBB	3.74 [1.65–8.46]	3.7 [1.76–7.78]	4.82 [2.37–9.81]	

P1301

LONG-TERM FOLLOW-UP OF PATIENTS WITH HEART FAILURE AND INDICATION FOR A DEFIBRILLATOR FOR PRIMARY PREVENTION OF SUDDEN DEATH.

C. Hadid[2], P. Avellana[1], D. Di Toro[2], C. Fernandez Gomez[1], M. Visser[1], N. Prieto[1].
[1]HOSPITAL FRANCISCO SANTOJANNI. BUENOS AIRES, ARGENTINA. [2]HOSPITAL COSME ARGERICH. BUENOS AIRES, ARGENTINA.

Background: Recent MADIT II and SCD-HeFT trials have led to an expansion of indications for prophylactic Implantable Cardioverter Defibrillator (ICD) implantation in patients with severe left-ventricular impairment. This therapy has not been fully adopted in our health care system, mainly owing to its high cost. **Objectives:** To assess total mortality of SCD-HeFT-like patients from our daily practice who are under stable, optimal medical treatment and who have not received an ICD; and to compare it to that of the placebo arm of the SCD-HeFT Trial. **Methods:**

SCD-HeFT-like patients identified from office medical records were included in our study. Total mortality was assessed by telephone contact. Statistical analysis was performed by Student's t-Test, Mann-Whitney Test or Chi2 test, depending on the type of variable. Cumulative mortality rates were calculated according to the Kaplan-Meier method. **Results:** Our study comprised 102 patients with a median age of 64 years old. Seventy-four (72.5%) were men with an overall median ejection fraction of 25%. We found no differences between our patients and SCD-HeFT patients across these 3 variables. Over a median follow-up period of 19.6 months, 21 patients died (20.6%) vs. 28.8% of the SCD-HeFT patients. This difference was not statistically significant ($p = 0.08$). Kaplan-Meier estimates of death from any cause showed similar mortality curves for both populations with an annual mortality rate of 8.25% for our patients vs. 7.25% for SCD-HeFT patients (p = NS). (Table I). **Conclusions:** SCD-HeFT-like patients from our practice had no different mortality rate than that of patients enrolled in the placebo arm of the SCD-HeFT trial. These results may indicate that the SCD-HeFT population is representative of our patients.

TABLE I. ACTUARIAL MORTALITY RATE FOR OUR PATIENTS AND FOR PATIENTS ENROLLED IN THE PLACEBO ARM OF THE SCD-HEFT TRIAL.

	12 months	24 months	36 months	48 months
Our patients	5%	16%	23%	33%
SCD-HeFT patients	4%	14%	21%	29%

P1302

INSULIN POTENTIATES THE CENTRAL PRESSOR RESPONSE TO ANGIOTENSIN II IN RATS

M. Mayer[1], C Höcht, J Giani, F Dominici, E Silberman, JAW Oppezzo, M Gironacci, C Taira, B Fernández, AM Puyó. [1]*UNIVERSITY OF BUENOS AIRES*

It has been postulated that insulin-resistance related hypertension is due, at least in part, to insulin actions at central level. However, although many data confirm the ability of insulin to stimulate the sympathetic nervous system by means of a renin-angiotensin dependent mechanism, contradictory results have been reported related to its influence on central blood pressure control. The aim of the present study was to evaluate if insulin modifies the pressor response to angiotensin II applied centrally. In accordance, the effects of a sub-pressor dose of angiotensin II were tested after intracerebroventricular perfusion of insulin in control (C) and insulin resistant rats (F). Male Sprague-Dawley rats were divided in two groups: 1) Control group (C) with tap water to drink for 6 weeks; 2) fructose treated, with fructose solution (10% w/v) to drink for 6 weeks. On the day of the experiment, rats were fasted for 5 h, weighed and anaesthetized with a mixture of chloralose (50 mg.kg$-$1, i.p.) and urethane (500 mg.kg$-$1, i.p.). The left carotid artery was cannulated and the intra-arterial cannula was connected to a pressure transducer for mean arterial pressure (MAP) recording. MAP was calculated as the sum of the diastolic pressure and one-third of the pulse pressure. A 32 gauge stainless-steel needle was inserted into the right lateral ventricle according to stereotaxic coordinates. A perfusion with Ringer's solution in the abscense or in the presence of insulin (12mU/h) were carried out for two hours. Inmediately, changes in MAP were evaluated in C and F rats in response to angiotensin II 5pmol. Meanwhile angiotensin II 5pmol did not modify MAP in C rats after receiving Ringer's solution alone (DMAP:-0.74$\pm$1.1 mmHg), it significantly increased MAP in C rats after previous administration of insulin (DMAP: 6.2$\pm$0.9 mmHg, $p<0.001$ vs. C).Angiotensin II 5 pmol injection significantly increased MAP in F rats after previous administration of Ringer's solution alone (DMAP:5.6$\pm$1.3 mmHg, $p<0.01$ vs. C) or insulin (DMAP: 3.5$\pm$0.5 mmHg, $p<0.01$ vs. C; NS vs F Ringer). These results suggest that insulin potentiates the pressor response to angiotensin II applied centrally in C rats. On the other hand, the existence of a pressor response to angiotensin II 5pmol in F rats, and the absence of changes in this response after previous administration of insulin could be due to the chronic hiperinsulinemia present in this experimental model.

P1303

DISORDERS IN HEART RHYTHM AND DISTURBANCES IN INTRAVENTRICULAR CONDUCTION SYSTEM IN HEART FAILURE

G. Vieyra[1], S Folino, O Agri, E Pautasso, M Koretzky, H Bovero, J Aiub, R Montecchiesi. [1]*Sociedad Argentina de Cardiología. Distrito Conurbano Norte* [2,3,4,5,6,7,8]

Objetive: The aim of this presentation is to evaluate disorders in heart rhythm and disturbances in intraventricular conduction system present in patients with adult chronic heart failure and their association with functional classes and different aetiologies. **Methods:** In a database, we incorporated ambulatory patients from public health system and private institutions in the Northern Area of Greater Buenos Aires with adult chronic heart failure diagnosis. The diagnosis of heart failure was based on Framingham's criteria. Patients were excluded when cause was toxic, acute or congenital diseases and all those with reversal aetiology, as well as those who were younger than 18 years old. From the ECG of 152 patients admitted in our registry, we calculated the prevalence of each heart rhythm and the disturbances in intraventricular conduction system and their association with function classes and different etiologies. Chi-square test was used in the statistical analysis. We considered an association statistically significant when $p < 0.05$. **Results:** We included 152 patients (P) with a mean age of 67 (+/- 10) (range 42 to 88 years). Sex distribution was 65% male (99 P). Of the total 152 ECG analyzed, 95 (64%) had sinus rhythm, 44 (29%) had atrial fibrillation and 11 (7%) had their heart rhythm controlled by a pacemaker. Only one patient presented an atrial flutter. Right bundle branch block (RBBB) was present in 24 (18%) of the cases and left bundle branch block (LBBB) in 31 (23%). Left anterior fascicular block and left posterior fascicular block were present in 35 (27%) and 6 (5%) of the cases, respectively. The relationship between heart rhythm and functional class showed that sinus rhythm was associated significantly with better functional status (FC I) ($p=0.0008$) and atrial fibrillation with poorer functional status (FC III) ($p=0.02$). The relationship between disturbances in intraventricular conduction system and the different aetiologies of heart failure showed that LBBB was associated with idiopathic aetiology ($p=0.0006$) and RBBB, with Chagas disease ($p=0.01$). **Conclusion:** Sinus rhythm was the most frequent heart rhythm detected in our registry and it was associated with a better functional class than atrial fibrillation, that was associated with worse functional class. LBBB was associated statistically significantly with idiopathic aetiology and RBBB with Chagas disease.

P1304

HEART FAILURE REGISTRY IN THE NORTHERN AREA OF GREATER BUENOS AIRES

G. Vieyra[1], E Pautasso[1], S Folino[1], O Agri[1], M Koretzky[1], E Pardo[1], M Rey[1], M Chiozza[1]. [1]*Sociedad Argentina de Cardiología. Distrito Conurbano Norte.* [2,1,3,1,4,1,5,1,6,1,7,1,8,1]

Objectives: The aim of this study is to establish the prevalence of functional classes and different aetiologies of adult ambulatory patients (P), in a database, with chronic heart failure (CHF) diagnosis. Then we will evaluate the association between functional classes and different aetiologies with different health systems from where they were recruited, either public or private. **Methods:** Adult patients with diagnosis of CHF were included. They were ambulatory patients from the public health system (PHS) and private institutions (PI) in the Northern Area of Great Buenos Aires. The diagnosis of heart failure was based on Framingham's criteria. Patients were excluded when cause was toxic, acute or congenital diseases and all those with reversal aetiology, as well as those who were younger than 18 years old. Distribution was determinate by age and sex, as well as where they were coming from (either public or private) Then, we calculated the prevalence of different functional classes and aetiologies and their association with their recruitment health system (either public or private). The chi-square test was used to test these associations. We considered an association statistically significant when $p <0.05$. **Results:** We included 152 patients (P) with a mean age $\pm$ SD of 67$\pm$10 (range 42 to 88 years). Sex distribution was 65% male (99 P). One hundred ten patients were coming from the PHS (72%) and 42 P from PI (27%). There were 33% (50 P) in functional class I, 45% (67 P) in functional class II and 21% (31 P) in functional class III. The prevalence of the different aetiologies showed: hypertensive (59 P) 38%, isquemic/necrotic (51 P) 33%, Chagas disease (17 P) 11%, idiopathic (13 P) 8% and others (15 P) 9%. No statistically significant differences were observed between the functional classes and the recruitment health system ($p=0.439$). The relationship between aetiology and the patients' origin showed a statistically significant association between isquemic/necrotic aetiology and the origin from PI ($p=0.003$), hypertensive aetiology and the origin from PHS ($p=0.02$) and Chagas disease aetiology and the origin from PHS ($p=0.003$). **Conclusions:** Hypertensive, Isquemic/Necrotic and Chagas disease aetiologies were the most common in our patients (83%). No association was observed between functional classes and the origin of the patient. We observed a statistical significant relationship between isquemic/necrotic aetiology and the origin from private institutions ($p=0.003$), and hypertensive and Chagas disease aetiologies and the origin from public health system ($p=0.02$ and $p=0.003$, respectively).

P1305

Can Dipyridamole act as a bridge for DES patients undergoing Non cardiac Surgery Off Clopidogrel

A. Magd[1], H Ragy, I Attia, A Zaki, N Okasha. [1]*Azhar University Hospital* [2]*National Heart Institute* [3]*Ain Shams University* [4]*Alexandria University Hospital* [5]*Ain Shams University Hospital*

The 2 major factors for late stent thrombosis are premature stopping of ASA/clopidogrel (DAPT) and non-cardiac surgerycarrying a risk of about 7–10 %. Dipyridamole is a weak antiplatelet agent but may be more effective at higher doses on non-biologic surfaces. We aimed to determine if large dose dipyridamole canprovide a safe bridge during the high risk peri-operative period. The primary endpoint was MACE up to 4 weeks post-op. The 2ry endpoint was any excess perioperative bleeding.**Methods :** 73 consecutive patients with previous DES undergoing non-cardiac surgery were included according to our current protocol : 1- DAPT stopped 4–7 days pre-procedure. 2 - Dipyridamole started at a dose of 150mg TID 4–7 days preprocedure. All patients had platelet aggregation studies done usin LTA while on DAPT and later while only on dipyridamole. **Results:** The mean age was 59 years, 79 % were malesand 49 % were diabetic. The interval from DES implant to surgery was a mean of 33 weeks (range = 1–102). There were no MACE recordednor were there any excess bleeding episodes. Platelet aggregation studies using LTA revealed the following ; 1 - On DAPT : The aggregation response to collagen was 53 % (range = 35– 82)while the aggregation response to ADP (5 mM) was a mean of 43 % (range = 22–78) P =.01. 2 - On Dipyridamole alone : The aggregation response to collagen was 42 % (5–72) p=.01 while the aggregation response to ADP (5mM) was 87 (range = 72–93).**Conclusion :** Dipyridamole monotherapy may act as a safe bridge in the perioperative period with no MACE or excess bleeding. It seems to act primarily via inhibition of collagen induced platelet aggregation. These results are encouraging and should be studied in larger groups of patients

P1306

Is Platelet Aggregation Adequately Inhibited by Current Clopidogrel Dosing Regimens ?

A. Magd[1], M Sawasany, A Ramzy, S Builtagy, A Zaki, M El Badry. [1]*Azhar University Hospital* [2]*Azhar University Hospital* [3]*Azhar University Hospital* [4]*Alexandria University Hospital* [5]*Alexandria University Hospital* [6]*Cairo University Hospital*

Recent data has shown that up to 19 % of DES patients may not have adequate platelet aggregation inhibition to the standard 75 mg of clopidogrel and that this may be corrected via increasing the dose to 150 mg/day.The aim of this work is to evaluate the efficacy of increasing

the dose of clopidogrel from 75 mg to 150 mg/day in those patients with an inadequate platelet aggregation response using LTA with collagen and ADP (5mM) as inductors. The primary endpoint was achievement of > 40 % platelet inhibition, the 2ry endpoint was any MACE.. **Methods:** 74 consecutive patients were included. All received 600mg loading dose at the time of their DES implant and then were kept on 75mg clopidogrel with platelet aggregation studies measured on day 7 post-procedure using the Light Transmission aggregometor(LTA) response. Those with an impaired response defined as less than 40 %inhibition of platelet aggregation were then subjected to a doubling of the clopidogrel dose to 150 mg / day. Repeat LTA platelet aggregation studies were repeated after a further 7 days. **Results:** The mean age was 58 years, 47 were males, 38 were diabetic and 12 had abnormal renal function. There were no adverse clinical events in the first 3 months. 47 patients had adequate platelet aggregation response to the 75 mg dose with the mean response to ADP (5mM) being 43 % (p,.01)while the response to collagen was 54 %. The 25 inadequate responders were then restudied one week later after increasing the clopidogrel to 150 mg/day.16/25 showed an improvement in their aggregation response to ADP with a mean of 34 % (p<.01) but with no improvement in their response to collagen with a mean of 53% (p =.98). Thus, 9/25 patients continued to have an inadequate platelet aggregation response even on the high dose clopidogrel. **Conclusion :**Increasing the dose of clopidogrel from 75 mg/ day to 150 mg / day improves the percentage of patients with an adequate platelet aggregation response but nevertheless, about 12 % continued to inadequate platelet aggregation. The clinical implications of these findings is under current study.

P1307

Estimation of the level of knowledge and adherence to dietary guidelines designed for hypertension treatment in a population of patients under dialysis

I. M Masuda[1], AN *aguirre N,*, MA Marcozzi A, FM Ferrero M, **ZC Ziella Jc** , HA Hansen A, HS Hecker S, CM Ciprés M,, RA Ríos A.

Background: High Blood Pressure (HBP) in patients under chronic dialysis constitutes a hard-to-manage problem due to its multifactorial pathogenesis. We have determined, amongst our patients, a high prevalence of predialysis HBP, even though we implemented of the intradialysis measures along with dietary and pharmacological indications that are recommended in this kind of pathologies. **Objective:** to estimate the degree of understatement that our patients have on regards of their disease, as well as the level of comprehension and observance of medical indications among a population of patients currently undergoing chronic dialysis in a facility located in Merlo, state of Buenos Aires, Argentine. **Methods:** we conducted a prospective study, in 1116 adult patients under dialysis. The sample was consecutive and the data were obtained via a self-administered questionnaire with both open and closed questions. 55.62 % were man, with a mean age of 57.21 years ± 14.77, vintage on dialysis of 61.45 ± 47.58 months and a 75.13 % with primary studies. The mean ± SD for blood pressure on the beginning of dialysis was 137.51 ± 22.26 mmHg and the interdialysis weight gain, expressed as a percentage over SW (standard weight), was of 3.14 ± 2.06 %. **Results:** 1) Questions attaining the patient's knowledge: 71.3 % answered correctly the normal values for BP. 70.8 % knew the effects that BP had on one or more target organs. 86.30% knew the benefits of a low-sodium diet and 84.34% could correctly identify foods that should be avoided. 95.6 % thought it was important to take the doctor's indicated drugs. 89.57 % knew the acceptable values for interdialysis weight gain. 2) Questions attaining adherence. 69.57 % said that, on occasions, they ate with salt (33.94% always and 36.52% on occasions), it is worth to notice that we found a significative relationship between eating with salt and time-on-dialysis (p > 0.005). 82.61 % said that they observed drugs indications. **Conclusions:** the results of our job demonstrate that our patients, despite knowing the optimum values for BP and the consequences of its deleterious effects on target organs, almost two-thirds of them did not strictly observed de low sodium diets and the water restriction, eve though they know that they were measures that intended to benefit them 28. It is important to notice the cultural influence on the diet, both at the local level and worldwide. In some cases, we have to add to this last remark social and economical aspects that are very difficult to eradicate. The challenge before us is to keep reinforcing, by the persistent interdisciplinary work, both the knowledge and the will of patients suffering from chronic, high prevalence diseases in order to achieve the maximum level of observance possible.

P1308

EXERCISE STRESS ECHOCARDIOGRAPHY PRIOR TO DISCHARGE FROM A CHEST PAIN UNIT IN PATIENTS WITH DIABETES MELLITUS

B. Lopez Ledesma[1], **E. Ludueña Clos[1]**, H. Avaca[1], G.M. Ferrari[1], C. Kudrle[1], M. Gingins[1], M.F. Larin[1], P. Pieroni[1], J.D. Humphreys[1], O.D. Manuale[1]. *[1]Hospital Británico de Buenos Aires, Argentina*

Purpose: To examine the incidence of an ischemic response to an exercise stress echocardiogram (S-Echo) and the degree of ischemic burden (IB) in a cohort of patients (p) with diabetes mellitus (DM) with known or suspected coronary heart disease referred to a chest pain unit (CPU) and compare them with the non diabetic (non-DM) cohort of similarly referred subjects. **Methods:** A sample of 2130 p (mean age 57.5±12 years) who presented to the emergency room with typical, atypical or non-specific chest pain, one or more coronary risk factors, negative EKG (normal or non-diagnostic if compared to a previous EKG) and negative biochemical markers on arrival were referred to the CPU. In this sample 192 p had a prior diagnosis of DM. During the 12-hour observation period in the CPU, 154 non-DM p and 18 DM p were admitted to hospital because of abnormal EKG changes and/or positive biochemical markers and/or an alternative non-cardiac diagnosis. The remaining subsets of 1784 non-DM p and 174 DM p (mean age 63±11 years) had a S-Echo performed prior to discharge to rule out ischemia. The S-Echo response was considered ischemic if two or more segments presented a change in segmental wall motion and IB was categorized by calculating the variations from baseline in wall motion score index (WMSI). IB was considered to be low when WMSI varied <0.25, moderate when it varied between 0.26 and 0.50, and high when variation was >0.50 **Results:**

S-Echo	High IB	Moderate IB	Low IB	Negative	RR (95% CI)
DM (174 p)	6 p (3.4%)	10 p (5.7%)	12 p (6,9%)	146 p (84%)	1.63 (1.12–2.38)
non-DM (1784 p)	41 p (2.3%)	46 p (2.6%)	91 p (5.1%)	1606 p (90%)	

Conclusion: Out of all patients referred to a CPU, those with DM have a significantly greater risk of having an ischemic response to a S-Echo and greater ischemic burden than the non-DM population.

P1309

AIR QUALITY AND RESPIRATORY AND CARDIOVASCULAR DISEASES IN A SOUTHERNS BRAZILIAN CITY FROM 1997 TO 2006

E. O. Fernandes[1], R. Zumach[2], G.M.O. Fernandes[2], J. Müller[2], S. C. Faria[3]. *[1]University of Brasília - UnB, Brazil [2]Municipal Environmental Foundation (FAEMA), Blumenau-SC, Brazil [3]3Catolic University of Brasília (UCB), Brasília-DF, Brazil*

Background: A considerable amount of evidence associates poor environmental quality with hospital admission and mortality from respiratory diseases in other communities in the industrialized world. In Blumenau, a city located in south Brazil, with a population of 301.333 inhabitants, the Municipal Environmental Foundation (FAEMA) technicians have been measuring the air quality since 1997, attempting to the established governmental parameters. Besides, morbidity and mortality from respiratory and cardiovascular diseases augmented from 1997 to 2006. **Objectives:** To establish the existence and the type of association between the air quality indexes measured by FAEMA specialists during the last ten years and the available data concerning morbidity and mortality from respiratory and cardiovascular diseases over the same period in Blumenau. **Methods:** The relationship between the Ringelmann scale and the particulates concentration in g/m3/20 s, measured in diesel vehicles circulating in specified streets of Blumenau from 1997 to 2006 was computed as the air quality index. Data from respiratory and cardiovascular diseases for Blumenau over the same years were obtained from governmental statistics registers at http://tabnet.datasus.gov.br (accessed November 30, 2006). **Results:** The better air quality indexes were found between 1999 and 2003. Between 1998 and 1999 there was an improving in air quality and a reduction in mortality for respiratory disease, but an augmentation in morbidity. Otherwise, morbidity and mortality for cardiovascular disease augmented 23% and 3%, respectively. From 2003 to 2004 there was a worsening of air quality and a worsening of the morbidity of respiratory disease but a maintenance of the mortality indexes. For CVD the morbidity was better and mortality worse. In 2005 air quality worsened but not the morbidity for both diseases. **Conclusions:** An adverse impact of air quality worsening was associated with higher morbidity and mortality from respiratory and cardiovascular diseases in this southerns Brazilian city over the last ten years, yielding to the recommendation of a better environmental control and the need of other specific measure parameters.

P1310

ATRIAL FIBRILLATION IN PATIENTS WITH AORTIC STENOSIS: CLINICAL SIGNIFICANCE OF TISSUE INHIBITOR OF MATRIX METALLOPROTEINASE-1

N. Goncharova[1], O. Moiseeva[1], G. Aleshina[2], E. Shlykhto[1]. *[1]Federal Centre ob Heart, Blood and Endocrinology named V.A. Almazov [3]Research Institute of Experimental Medicine*

Introduction: Left atrium fibrosis is the main morphological substrate for atrial fibrillation (AF) in patients with cardiovascular diseases. Myocardial TIMP-1 abundance and lack of matrix metalloproteinase-9 (MMP-9) is associated with increased collagen deposition in pressure overloaded heart. Little is known about the prognostic impact of serum TIMP-1 in patients with aortic stenosis (AS) and AF. **Design and methods:** 34 patients with severe AS underwent echocardiography examination (60.6±9.7 yrs; 12 women, mean transvalvular gradient 82.3±26.4 mm Hg). Serum TIMP-1 and MMP-9 were measured with ELISA. **Results:** AF was observed in 20.6% patients and was associated with left atrium (LA) dilatation (48.9±2.2 in AF vs. 42.9±0.9 mm; p=0.02), mitral regurgitation (MR) (χ=9.2; p=0.01). Serum MMP-9 concentration was in normal range (259.1±124.9 ng/ml; normal range 169–705 ng/ml), whereas serum TIMP-1 content was markedly elevated (586.8±123.5 ng/ml; normal range 92–116 ng/ml). Results of multiple linear regression analysis indicated that serum TIMP-1 level is independently associated with LA dilatation (R2=0.20; F=4.9; p<0.04). **Conclusion:** One of the reasons of AF onset is exuberant matrix accumulation due to high serum TIMP-1 level in pressure overload hypertrophy.

P1311

Are there clinical and outcome differences in patients with aortic stenosis treated with angiotensin converting-enzyme inhibitors?

P. Oberti[1], R. Pizarro[1], M. Falconi[1], F. Achilli[1], A. Arias[1], F. Sosa[1], L. Lucas[1], J. Krauss[1], A. Cagide[1].

Background: Recent observational studies have suggested benefits of angiotensin converting-enzyme inhibitors (ACEI) use in patients with aortic stenosis (AS). However, their prescription was not use widely because the potential risk of excessive vasodilatation and hypotension in this group of patients. **Objective:** To asses the indication of ACEIs, clinical profile, outcome, and adverse events rate in patients with AS. **Results:** We reviewed 505 consecutive patients (48% male sex, mean age 76+/-8.6 years old) with aortic stenosis (peak velocity 3.5 +/- 0,88 m/s, aortic valve area (AVA) 0.93+/-0.24 cm2 and mean pressure gradient 31.8+/-17.8 mm Hg). At follow-up of 749 +/- 389 days, 104 were admitted by cardiovascular symptoms. At hospital admission 34 patients (33%) were treated with ACEIs. There was no significant difference for

valve area, peak gradient, mean gradient, systolic pulmonary artery pressure, left atrial size, LV hypertrophy, and LV ejection fraction between the two groups. Those treated with ACEIs had more frequently hypertension but not more frequency of diabetes mellitus, previous infarct, or previous coronary artery revascularization. Patients under treatment with ACEI had less heart failure symptoms (p=0.03) but were not associated with an increase in prevalence of angina or syncope. The mortality and aortic valve replacement rates were similar for both groups. **Conclusion:** In patients with AS treated with ACEI we did not observe a higher incidence of adverse events or worse outcome and their use appears to be relatively safe. However, there seems to be no beneficial effect on mortality or aortic valve replacement rates.

CLINICAL AND ECHOCARDIOGRAPHIC CHARACTERISTICS OF POPULATION

Variable	All patients (n=104)	ACEI therapy (n=34)	No ACEI therapy (n=70)	P
Male sex, %	46	50	43.5	0,532
Age, %	76.1±8.6	78.7±1.2	78.9±0.77	0,924
Peak velocity, m/s	3.5±0.88	3.5±0,19	3.5±0,10	0,881
Aortic valve area, cm^2	0,93±0,24	0,93±0,05	0,89±0,03	0,506
Ejection fraction, %	58.5±7.8	57.9±1.5	57.1±0.93	0,611
AMi previous, %	10.6	11.8	10.1	0,802
Hypertension, %	78.9	88.2	73.9	<0,05
Diabetes, %	23	24.2	22.4	0,836
Angina, %	16.3	17.6	15.9	0,826
Disnea, %	41.3	26.5	47.8	0,03
Syncope, %	2.9	0	4.3	0,217
Aortic valve replacement, %	3.96	0	4.41	0,228
Mortality, %	20.8	21.9	19.1	0,748

P1312

Kymogram - a new tool for the assessment of heart valve performance

M. Kondruweit[1], R. Cesnjevar[2], T. Wittenberg[3], S. Friedl[3], **T. Strecker[1]**, M. Weyand[1].
[1]Center of Cardiac Surgery, Friedrich-Alexander-University of Erlangen-Nuremberg [2]Center of Pediatric Cardiac Surgery, University Hamburg-Eppendorf [3]Frauenhofer Institute for Integrated Circuits, Erlangen

Objective: The aim of this study was to examine the potency of heart valve Kymograms generated from digital high speed camera data. We conducted these investigations in an ex vivo beating pig-heart model. **Methods:** After cardioplegic arrest the heart was explanted and then reperfused with the donor-blood. When the heart started beating again, it was rinsed thoroughly with warm physiological sodium chlorid. Physiological blood pressures were reached by reducing the aortic diameter. The recording of the mitral valve was performed due to a rigid 0o endoscope attached to a high-speed camera inserted into the left atrium with a recording rate of 2000 frames per second. After recording, the image sequences were analysed and several digital kymograms were calculated. Creating digital Kymograms is a technique of data reduction and simplified visualisation for time related image sequences. In each single image of the sequence, all pixels along a manually selected line are automatically extracted in a first step, and then recombined to form a new image by transferring all extracted lines along the time axis. **Results:** This investigation showed that in reconstructive surgery of the mitral valve, the coaptation phase had to be preserved by all means, because the relationship between closing (180 ms) and coaptation (167 ms) is nearly equal and therefore essential for the efficient function. **Conclusions:** This exemplary investigation shows the potency of the Kymogram as a new tool for heart valve investigations especially for the mitral and aortic valve.

P1313

Coffe consumption and atrial fibrillation

A. Mattioli[1], E. Tarabini Castellani[2], S. Bonatti[2], C. Miloro[3], D. Lodi[4], G. Mattioli[5].
[1]Cardiology Dpt Biomed Sc University of Modena and R.E. [2]Cardiology University of Modena and R.E. [3]Nutrition Dpt University of Modena and R.E. [4]Biomedical Science University of Modena and R.E. [5]National institute of Cardiovascular Research Bologna

Background. Coffee is one of the most popular beverages consumed in a large amount in Western Countries. Coffee contains several hundred different substances but its effects on cardiovascular system have been mainly related to caffeine. Caffeine is the most widely consumed behaviorally active substance in the world. The study evaluated the influence of habitual high espresso coffee consumption, nutritional factors and acute stress events on the development and conversion of acute lone atrial fibrillation (LAF). **Methods.** The study group included 220 patients (pts) with LAF. The coffee consumption, alcool and smoking, and body mass index=BMI were investigated. Pts underwent a series of cognitive tests to evaluate acute psycological stress (mean life acute stress score= LCU). A control group age- and sex-matched was selected and compared. **Results.** The mean LCU score among pts with LAF was 62 + 34, while in control was 36 + 28 (p<0.01). We categorized pts according to coffee consumption as habitual (from 1 to 3 cups/day) heavy habitual (more than 3 cups/day) and non habitual. We observed that a recent acute life change (LCU units >50), habitual high espresso coffee consumption and high body mass index (>27) were associated with greater risk of atrial fibrillation: respectively LCU higher tercile (OR 3.4 95%CI 2.6–3.0, p<0.001), habitual high coffee (OR 2.04 95%CI 1.5–2.1, p<0.001) and BMI>27 (OR 1.4 95%CI 1.2–1.7, p<0.05). Spontaneous conversion to sinus rhythm was observed in 102 pts (46%). Acute stress was associated with an increase in coffee consumption in almost all subjects (habitual and nonhabitual drinkers). Habitual high expresso coffee consumption (RR 0.8 95%CI 0.12–01.19; p<0.001) and BMI>27 were associated with a significantly greater risk of persistent atrial fibrillation (RR 1.2 95%CI 1.0–1.71). **Conclusions.** High espresso coffee consumption (>3 cups a day) was associated with an increase risk of AF but pts habitual drinkers had a low probability of spontaneous conversion of the arrhythmia. This effect could be the consequence of the more marked sympathetic activation induce by caffeine in nonhabitual coffee drinkers.

P1314

Pulmonary valvuloplasty in adults using the Inoue Balloon Catheter

H.M. Pham[1], H.L. Nguyen, Q.N Ngoc, H.M Nguyen, H.N Khong, V.L Nguyen, L.D Do, K.G. Pham.

Background: Although pulmonary valvular stenosis is not uncommon in adults. There are few reports of percutaneous pulmonary valvuloplasty in adults, especially using Inoue balloon. **Objectives:** This report describes the experience in adult patients undergoing Pulmonary valvuloplasty using Inoue balloon and evaluates its effectiveness and tolerance. **Methods:** Over an 7-year period (2000–2006), pulmonary valvuloplasty using Inoue balloon was considered in 65 adult patients [39 men, 26 women; mean age 28.0 years ± standard deviation (SD) 10.3; range 16–53 years] with congenital pulmonary valve stenosis. Twenty-five patients were asymptomatic with pulmonary systolic murmurs, although 40 patients presented with dyspnea. Before the procedure, the peak-to-peak transpulmonary valve gradient was 91±40 mmHg SD, with a mean right ventricular systolic pressure of 107±41 mmHg SD. **Results:** The procedure was technically successful in all patients but one (98.46%). One falure because balloon could not pass throught pulmonary orifice valve due to very tight valve stenosis. Among all patients with technical success all tolerated well and free of major complications. The mean right ventricular systolic pressure and the pulmonary valvular peak-to-peak systolic gradient decreased from 107±41 to 56±19 mm Hg (p = 0.001) and 91±40 to 21±7 mm Hg (p = 0.0002), respectively. An infundibular peak-to-peak systolic gradient either developed (n = 13) or increased (n = 17). None of these patients were treated with beta-adrenergic blockers before or after the valvuloplasty. Incontrast, this gradient decreased or did not develop in the remain patients who were on beta- blokers before procedures. All patients underwent echo follow up study for 6–60 months (mean 24) after treatment, and had no evidence of valvular restenosis. The mean right ventricular systolic pressure and the mean infundibular peak-to-peak systolic gradient decreased, compared to the values immediately after valvuloplasty (56 to 47 mm Hg, p = 0.03, and 28 to 10 mm Hg, p = 0.03, respectively). **Conclusions:** The study suggests that pulmonary valvuloplasty in adults using the Inoue balloon catheter technique is feasible, safe, and effective.

P1315

PHYSICAL AND SEDENTARY ACTIVITIES IN SOUTHERN BRAZILIAN TEENAGERS: A POPULATION BASED CROSS-SECTIONAL STUDY

C. Cesa[1], A. Andreola[1], T. Santos[1], R. Petkowics[1], S. Barbiero[1], P. Campagnolo[1], F. Beltrami[1], E. Vigueras[1], L. Pellanda[1]. *[1]Instituto de Cardiologia do Rio Grande do Sul / FUC*

Background: Sedentary activities (TV, games and internet) are putative risk factors for childhood obesity. The prevalence of obesity among children increases with the time spent watching television. On the other hand, it has been demonstrated that physical activity is effective in preventing and treating obesity in this age group. **Objective:** Describe physical and sedentary activities habits in school teenagers in Porto Alegre, southern Brazil. **Methods:** Cross sectional population-based study, with probabilistic cluster sampling of 809 students. Parents and students answered questionnaires about family and personal history, and health habits. Students were weighted and measured at school. **Results:** Of the 809 included students, 55,1% were female. Mean age was12,7 ± 1,6 yrs. 96,2% students reported to engage in physical education classes and 97,9% considered important to practice sports. Most participants went to school walking (65,4%), during approximately 15 min in 84,4% of these. 40,4% engage in formal sports, and 73,9% in non-formal physical activity outside school. 96,8% teenagers reported to watch TV daily, spending up to 5 hours/ day with this activity. Computer and games are utilized by 54,8% during up to 4h in 74,1% of these cases. **Conclusion:** Informal and formal sports, and walking to school are important opportunities of physical activity in this population. The large amount of time spent with sedentary activities such as watching TV Is worrisome. Education of families and teenagers is important to achieve the goals of a healthy lifestyle and future.

P1317

Advantages of CT angiography in the planning and follow up of abdominal aortic aneurysm

C Capuñay[1], **P Carrascosa[1]**, A Deviggiano[1], E Martin Lopez[1], J Vallejos[1], J Carrascosa[1].
[1]Diagnostico Maipu

Purpose: to show the advantages of the CT angiography in the pre and post-treatment evaluation of abdominal aortic aneurysm. **Methods:** a total of 353 CT angiographies of the aorta (274 of the abdominal aorta; 35 of the thoracic aorta, 40 of the thoracic-abdominal aorta), performed between May 2002 and August 2007 were retrospectively evaluated. CT scans were performed using a 4-row, 16-row and 64-row multidetector CT scanners (Mx8000, Brilliance 16, Brilliance 64; Philips Medical Systems) with slices of 1 to 2.5mm thickness and injection of 80–120ml of contrast material using a power injector. A second CT acquisition 10 minutes after the first CT scan was obtained if the patient had endovascular aortic aneurysm treatment. CT images were analyzed in a dedicated workstation using different post-processing tools: multiplanar reconstructions; maximum intensity projections and volume rendering images. **Results:** In the pre-treatment group, the measurements of the aneurysm neck, its length and diameters were determined. Also the iliac artery diameters and angulation were evaluated. In the post-treatment group, the presence of complications, such as peri-prosthetic hematoma, thrombosis or the presence of endoleaks were assessed. **Conclusion:** CT angiography is a fast and minimally invasive imaging method for the diagnosis and characterization of aortic pathology, providing important information for the treatment planning and also in the evaluation of complications after abdominal aortic aneurism repair.

P1318

Multidetector CT features in the follow up of patients with endovascular aortic aneurysm treatment

P. Carrascosa[1], C Capuñay[1], A Deviggiano[1], J Vallejos[1], E Martin Lopez[1], J Carrascosa[1]. [1]*Diagnostico Maipu*

Objective: to illustrate the spectrum of Multidetector CT angiographic features in the follow up of patients with endovascular aortic aneurysm treatment. **Material and Methods:** a total of 142 follow up CT angiographies of the aorta (133 of the abdominal aorta; 9 of the thoracic aorta), performed between May 2002 and August 2007 were retrospectively evaluated. CT scans were performed using a 4-row, 16-row and 64-row multidetector CT scanners (Mx8000, Brilliance 16, Brilliance 64; Philips Medical Systems) with slices of 1 to 2.5mm thickness and injection of 80–120ml of contrast material using a power injector. A second CT acquisition 10 minutes after the first CT scan was obtained. CT images were analyzed in a dedicated workstation using different post-processing tools: multiplanar reconstructions; maximum intensity projections and volume rendering images. The characteristics of the residual aneusrismatic sac, of the endovascular stents and the presence of treatment complications were assessed. **Results:** In 31/142 of the patients, complications were detected: a) periprosthetic hematoma (n=2); b) partial stent-graft thrombosis (n=13); c) total stent-graft thrombosis of the aortic segment (n=1); d) total stent-graft thrombosis of an iliac branch (n=12); e) endoleak type II (n=1); f) endoleak type II (n=4); g) endoleak type III (n=4). **Conclusions:** Multidetector CT angiography is an accurate, fast and minimally invasive imaging method useful in the follow up of endovascular aortic aneurism repair.

P1319

CT features in pulmonary embolism. Impact of the Multidetector technology

C Capuñay[1], **P Carrascosa**[1], A Deviggiano[1], E Martin Lopez[1], J Vallejos[1], J Carrascosa[1]. [1]*Diagnostico Maipu*

Purpose: to describe the most important CT features in the detection of pulmonary embolism and the improvement in the visualization of peripheral pulmonary arteries. **Material and methods:** sixty-five arterial phase contrast enhanced CT scans of the pulmonary arteries were retrospectively reviewed. All of the patients were derived to our institution with a probable clinical diagnosis of pulmonary embolism and the first line diagnostic imaging method was CT examination. CT's were performed on a 16-row and 64-row CT scanners (Brilliance 16 and 64; Philips Medical Systems) using 16x1,5 configuration; 2mm collimation and 64x0.625 configuration; 1mm collimation and the injection of 80–100ml of iodinated contrast material using a power injector. An automated bolus-tracking program for optimal opacification of the pulmonary vasculature was used when possible. Images were evaluated on a dedicated workstation, a systematic analysis using multiplanar reconstructions and maximum intensity projections for evidence of emboli disease and it's localization was performed. **Results:** Negative results for pulmonary embolism were found in 46 patients. In the other 19 patients, pulmonary emboli were diagnosed. CT evidence of pulmonary emboli was described in the main pulmonary arteries in 3 patients, in the lobar and first order segmentary arteries in 9 patients; in the second or greater order segmentary arteries in 11 patients. Only in 2 patients, CT features of pulmonary infarction was found. In 23/68 of the patients with negative results for pulmonary embolism, an alternative diagnosis was established by the CT scan. **Conclusion:** the development of multidetector CT has led to improved visualization of peripheral pulmonary arteries and detection of small peripheral emboli. For all practical purposes, CT can be use as the first-line imaging technique in patients suspected of having pulmonary embolism. Nevertheless, prospectively acquired patient outcome studies are still needed.

P1320

IVC-SCV Filters. A comprehensive review of the spectrum of complications.

J. Tisnado[1], MK Sydnor[1], DJ Komorowski[1], DA Leung[1]. [1]*MCV Hospitals / VCU Medical Center*

Purpose: About 4000 filters (all kinds) have been placed by us in the IVC and SVC during the last three decades. Therefore, we have accumulated a vast experience in filter placement and have seen or experienced all types of complications of the procedures. **Materials and Methods:** We hereby attempt to classify the spectrum of complications of filter placement: (A) Vascular access: bleeding, hematoma, rupture, pneumothorax; (B) Placement: misplacement in different sites such as iliac veins, renal veins, hepatic veins, aorta, extravascular in the retroperitoneum, failure to open, embolization into right atrium, right ventricle, PA; (C) Complications: migration, rupture of prongs, "collapse," embolization; (D) Injuries to IVC-SVC: perforation, thrombosis, stenosis, rupture; (E) Multiple insertions: 1, 2, 3 filters needed because misplacement, embolization, recurrent pulmonary embolism; (F) Iatrogenic: rupture, extrusion, tilting, etc. **Results:** We describe some of the ways or methods to avoid complications and to solve them once occurred. **Conclusions:** Filter placement in the IVC-SVC has become a "routine" procedure. Some operators with minimal experience are placing filters. We discuss ways to avoid complications and ways to solve problems.

P1321

CHEST PAIN UNITS: CLINICAL FEATURES OF THE PATIENTS

J. Ibañez[1], J. Muntaner[2], V. Mansilla[3], R. Corbalan[4]. [1]*Centro Modelo de Cardiología*

Background: Chest pain units had demonstrated being a secure help assistance system for patients with chest pain, lowering costs and optimizing resources of the health system. The patients admitted in this units belong to low cardiovascular risk group. We made a study for knowing local experience and clinical features of these patients. **Objetives:** To determine the clinical features of patients admitted in chest pain unit, and possible relation with biological markers as Troponin T and hs PCR. **Methods:** Information had been collected from clinical history for patients admitted in the chest pain unit of the Centro Modelo de Cardiologia between 06/2006 to 08/2007. Patients received serial ECG, biomarkers measurements for CPK-mb, Troponin T and hs-PCR. Patients with positive biomarkers or ECG changes received full treatment for ACS, those with negative results were studied accord medical criteria with SPECT or treadmill test within internation or ambulatory. Negative results were discharged home. **Results:** 80 patients were enrolled. 47 (58,7%) male, 33 (41,2%) female. 58 (72,5%) had HTA, 15 (18,7%) Diabetes, 36 (45%) smoker history, 42 (52,5%) dislypidaemia, 39 (48,7%) had overweight, 58 (72,5%) sedentarism, 16 (20%) had familiar antecedents for CV disease. A total of 23 patients (28,7%) passed by stress test, 21 (26,2%) SPECT and 2 (2,5%) treadmill test, 51 discharged patients (72,8%) were study with ambulatory stress test. 8 patients (10%) had values $>$ 0,01 ng/ml. 32 patients (40%) had hs-CRP, 15 (46,8%) had high risk values ($>$3 ng/mL). 70 patients (87,5%) were discharged with non coronary pain diagnostic, 10 remain inhospital with ACS diagnostic. **Conclusions:** It is remarkable the high prevalence of risk factors among these patients, HTA, smoke history and sedentarism. Patients discharged with non coronary pain diagnostic were similar with other series. Troponin T was a high confidence risk marker, hs CRP had high values considered for this low risk group by initial diagnostic, this could be because high incidence of risk factors among the patients. There is the need to further evaluation by clinical end points. Less stress test were made for this population during hospitalization compared with another series publicated, perhaps because the reference system with patient's cardiologist. It is remarkable too, the low use of treadmill test and great use of SPECT, maybe this is the result of availability of the method, high prevalence of risk factors, and medical criteria from the local service.

P1322

Idiopathic ventricular and atrial arrhythmias. Relationship with developmental dismorphogenesis of their involved structures.

M. Elizari[1], **S. Lupano**[1], M. Ferreiro[1], M. Civetta[1], F. Lubenieki[1], S. Sicouri[1]. [1]*Hospital Ramos Mejía*

Atrial and ventricular arrhythmias in the absence of overt structural heart disease are common entities. Exclusion of concealed diseases is critical as this diagnosis impacts both ablation outcomes and long-term prognosis. Among the wide spectrum of idiopathic arrhythmias (IA), right ventricular outflow tachycardia, left ventricular outflow tract tachycardia, tachycardias originating within the main stem of the pulmonary artery and pulmonary and aortic valve cusps and ventricular and atrial arrhythmias arising from the mitral annulus are the most common and a distinct subgroup of the so-called IA. Electroanatomic mapping and intracardiac echocardiography can identify accurately the origin of the above mentioned tachyarrhythmias. Interestingly, mapping of VTs arising in the main stem of the pulmonary artery approximately 2 cm above the pulmonary valve and application of radiofrequency at this site resulted in termination of ventricular tachycardia. At present, these atrial and ventricular tachyarrhythmias do not have, on the whole, a satisfactory explanation regarding their etiopathogenesis. **Objectives** The aim of this study was to explore histologically the origin of the great arteries and the outflow tracts of embryonic hearts to determine the anatomic features of these areas. **Material and Methods** Embryonic human hearts were studied histologically at different developmental stages (11 to 32 weeks). Serial sagital cuts (5–10 μ thick) from the pulmonary artery and outflow tracts were performed. Haematoxylin-eosin and Mallory Heindenhain staining techniques were used. Nikon Eclipse E 200 and Zeiss Axiophot 40 for optic microscopy were used and documented with digital Nikon Coolpix 5000 and Canon Power Shot G-6 in different magnifications. **Results** In the human embryonic hearts, the main stem of the pulmonary arteries and the pulmonary valves showed a significant amount of myocardial tissue surrounding the developing arterial valves. The structures did not possess any characteristic cytological features. The myocardial cells running in all directions showed different sizes, some of them appeared pale-stained and poorly striated. In some areas of the right ventricular outflow tract, immediately below the pulmonary valve, the fibers are interlaced as a network of pluridirectional anastomosis. In the aortic- pulmonary septum, a nodal-like structure composed of myocytes focal fibrosis and Purkinje-like cells not following any discernible geometric pattern was observed in 3 hearts. It is assumed that heterotopic or abnormal muscle surrounding the developing structures should normally disappear with ongoing maturation. However, when VT arises in the pulmonary or aortic cusps or in the main stem of the pulmonary artery, it must be accepted that abnormal excitable muscular tissue remains despite maturation, probably because incomplete apoptotic cell deletion or a still unknown genetic disorder. A similar mechanism can be applied to other areas of the heart disclosing IA. It is noteworthy that the sites of origin of IA are all located in areas whose embryogenesis is related or served by the migration of the neural crest cells.

P1324

PSEUDO INCOMPLETE RIGHT BUNDLE BRANCH BLOCK. ITS RELATIONSHIP WITH THE EMBRYOLOGIC DEVELOPMENT OF THE RIGHT VENTRICULAR OUTFLOW TRACT.

M. Elizari[1], **MF Lambardi**[1], M Ferreiro[1], RS Acunzo[1], PA Chiale[1], MM Civetta[1], RR Bonato. [1]*HOSPITAL RAMOS MEJIA*

Considerable disagreement still exists concerning the electrogenesis and clinical significance of secondary R waves (rSr' pattern) in the right chest leads in the presence of normal or slightly prolonged QRS interval in subjects with normal hearts. The rSr' pattern in leads V1 to V3 may be attributed to two different mechanisms: 1. delay of the cardiac impulse within the right bundle branch or true incomplete right bundle branch block (TIRBBB) and 2. zonal or regional block due to delayed activation of he right ventricular outflow tract (RVOT) defined as pseudo incomplete right bundle branch block (PIRBBB). A uniform criterion to differentiate the ECGs of

TIRBBB from those of normal subjects having PIRBBB has not yet been found. **Objectives** To determine the prevalence of both forms of block in a population of students aged 13 to 18 years and to attempt to find reliable differential criteria. **Material and Methods** We recorded 485 ECGs focusing on the correct recording of the right precordial leads V1-V3. In the cases showing secondary R waves, additional lower and higher chest leads as well as leads V3R to V5R were recorded. In selected cases, the recordings were also performed in different phases of respiration. Vectocardiographic recordings were also performed in cases showing rSr' pattern. Special attention was paid to the final portion of QRS loop (beyond 0.06 s after onset of ventricular depolarization). **Results** Thirty one cases of secondary R waves were detected (6.39%). In TIRBBB, the rSr' pattern persisted in leads taken one or two spaces below and in V3R to V5R. In contrast, the r' tended to disappear when additional leads were taken 1 and 2 intercostal spaces above the routine level. In contrast, in the PIRBBB right upper chest leads showed an increase in amplitude, particularly in V2. The forces beyond 0.06" of the QRS loop of the VCG are oriented posteriorly, superiorly and to the right in PIRBBB, while in TIRBBB these forces are oriented anteriorly, inferiorly and to the right; in the limb leads, the direction of these forces generates S1S2S3 and S1R3, respectively. **Conclusions** The pattern PIRBBB is attributed to delayed activation of the RVOT due to a heterogeneous distribution of Conexine 43 and hence of gap junctions and to the absence of Purkinje fibers in this area. Interestingly, the PIRBBB resembles the QRS observed in the Brugada syndrome, in which abnormalities in the RVOT have been widely documented. In conclusion, these findings suggest that PRIBBB may be a developmental variation with a lower gap junction density as a minimal manifestation of abnormal expression of the cardiac neural crest cell migration in heart morphogenesis.

P1326

INTRAMYOCARDIAL OR INTRACORONARY CELL DELIVERY: WHICH IS THE BEST ROUTE FOR CELL THERAPY IN IDIOPATHIC DILATED CARDIOMYOPATHY?

A. C. Campos De Carvalho[1], F. B. Muccillo[1], P. C. S. Costa[1], S. N. S. Arvelo[1], E. Assunção E Silva[1], P. S. Oliveira[1], C. M. Gouvêa[1], C. T. Mesquita[1], H. F. Martino[1]. *[1]INSTITUTO NACIONAL DE CARDIOLOGIA, RIO DE JANEIRO, RJ, BRASIL.*

Introduction: The development of new therapeutics procedures, such as the myocardial implantantion of autologous stem cells obtained from bone marrow aspirate, constitutes a promising therapeutic option for several cardiomyopathies. We have been particulary interested in using cell therapies for idiopathic dilated cardiomyopathy (IDC). The non-focal nature of the disease requires a strategy for widespread release of the cells, such as intracoronary delivery. However, the mild inflammatory state usually associated to IDC, does not favor, in theory, the homing of the cells to the myocardium and intramyocardium injection would be a good alternative administration way for cell delivery. It is therefore essential to use techniques to follow the migration of the cells after catheter delivery. Nuclear medicine techniques allow cell tracking. In this study, Technetium-99m hexamethylpropylene amine oxime (^{99m} Tc-HMPAO) labeling technique was modified and applied to detect cell homing and hearth engraftment in IDC for either intracoronary and intramyocardium cell delivery. **Objective:** The aim of this work was to evaluate myocardium bone marrow mononuclear cell (BMMC) retention and hearth fuction whem cells were delivered by intramyocardial (IM) or intracoronary (IC) route to patients with IDC. **Methods:** Patients were subject bone marrow aspiration (80–90 mL) under sedation and local anesthesia. Ten percent of BMMC obtained after Ficoll Gradient centrifugation was labeled with ^{99m} Tc -HMPAO. Labeled cell were diluted with the unlabelled ones either in 20 mL or 5 mL of saline containing 5% autologous serum. Cells were then delivered through catheterization into the coronary arteries (10 mL in LAD, 5 mL in RC, 5 mL in CX) or injected in the left ventricular wall. SPECT images were obtained 2, 4 and 6 hours after hemodynamic procedure. For control perfusion images with tomographic views of the hearth labeled with ^{99m} Tc-SESTAMIBI were obtained 48 hours before BMMC implantation. Patients were subjected to LVEF evaluation (Simpson method) at baseline, 2 and 6 months after cells therapy. **Results:** We observed cell retention in areas of the myocardium with the two delivery techniques. Difuse myocardial retention was observed with IC delivery (n=2) and a multifocal pattern was observed after IM injection (n=1). Echocardiographic evaluation showed an increase in LVEF at two months after IM (baseline 17%, 2 months 26% and 6 months 19%) and no variation in EF% after IC injection (baseline 33%, 2 months 34% and 6 months 29%). **Conclusion:** Scintigraphy is a useful method to trace BMMC in the first hour after cell delivery. Were preliminary data suggests that intramyocardial cell delivery may be a better route for cell therapy in IDC. Further studies are warranted to confirm the observed differences in cell retention pattern and its possible implication on cardiac performance after cell therapy.

P1327

Early prognosis of patients with valve prosthesis regurgitation immediately after heart surgery.

RO Sampaio[1], FCS Silva Jr, IS Oliveira, GS Spina, F Tarasoutchi, M Grinberg. *[1]Heart Institute [2]Heart Institute [3]Heart Institute [4]Heart Institute [5]Heart Institute [6]Heart Institute*

Valve prosthesis regurgitation immediately after heart surgery has been poorly studied. In order to evaluate this issue we performed a retrospective study. **Methods:** Among 1350 valvar heart surgery in the last 10 years, it was selected a sample of 76 patients, mean age 51 ± 16 years, 46 male, all of them with valve prosthesis regurgitation early after heart surgery. 3 patients were operated because of endocarditis. Two groups were constituted depend on the grade of prosthetic regurgitation: 64 with mild/moderate and 12 with severe regurgitation. We analyze early prognosis (number of deaths), complications and reoperations. **Results:** 76 bioprosthesis (48 in the aortic position, 27 in the mitral position and 2 tricuspid), and 6 mechanical prosthesis (3 in the mitral position and 3 in the aortic position) were implanted. Also, there were 4 associated conservative valve surgeries. Prosthetic regurgitation was observed in 12 patients early after valve surgery. Two of them died, and 10 were operated until 4 months after surgery (medium of 58 ± 43.6 days postoperation). Of these, early prosthesis endocarditis were seen in 7 patients (6 in the aortic and one in mitral position), 2 patients had bioprosthesis dysfunction and one had hemolysis. There was one death in this second postoperation due to endocarditis. The remaining 9 patients survived (6 aortic and 3 mitral). Data below show different correlations between severe and mild/moderate valve prosthesis regurgitation early after surgery. Death: Mild/moderate (= zero) vs Severe (= 3), (p=0.003),relative risk= 8.1 [3.1–8.1]. Reoperation: Mild/moderate (= 2) vs Severe (= 10), (p< 0.001),relative risk= 33 [12.6 – 33]. Endocarditis: Mild/moderate (= 5) vs Severe (= 7), (p= 0.001),relative risk= 9.2 [3.77–17.82. **Conclusions:** Severe valve regurgitation early after surgery was associated with early prosthesis endocarditis, high risk of death and reoperation.

P1328

The Trypanosoma cruzi infection with an isolate obtained from an endemic area produces alterations in the complexes of the cardiac mitochondrial respiratory chain

A Baez[1], MS. Lo Presti, HW Rivarola, G Guzmán Mentesana, D Comay, P Paglini-Oliva. *[1]Catedra de Física Biomédica, UNLaR [2]Catedra de Física Biomédica, UNC, UNLaR [3]2 [4]Catedra de Física Biomédica, UNC [5]INCOR (La Rioja) [6]2*

Reactive oxygen species have direct effects on cellular structure and function; mitochondria are damaged with the entrance of *Trypanosoma cruzi* into cardiac cells as a consequence of the immflamatory processes that provoke oxidative stress. In the present work we studied the effect of the *T. cruzi* infection upon the mitochondrial function measured by the enzymatic activity of respiratory chain complexes (CI –CIV) in myocardium from mice infected with an isolate obtained from Santiago del Estero (endemic area). Albino Swiss mice (n= 30) were used and divided into the following groups, G1= non-infected (n=10); G2= infected with 50 trypomastigotes of *Trypanosoma cruzi*, SGO Z12 isolate (n=20). Cardiac tissue samples were obtained from both groups 10 and 30 days post infection (d.p.i.), (acute phase) and 365 d.p.i. (chronic phase). Mitochondria were isolated by subcelullar fractioning determining CI, CII, CIII and CIV enzymatic activity by spectrophotometry. The enzymatic activities (μm.min-1/mg prot) obtained were: CI in G1=0.04±0.02, in G2 an increment was determined 10 d.p.i. and a significantly decrease at 30 and 365 d.p.i. ($p<0.05$). CII in G1=1.1 x 10^{-9} ±5.7 x 10^{-11}, G2 showed similar activity to G1 at 10 and 30 d.p.i but significantly diminished in the chronic phase ($p<0.01$). CIII value in G1 was 0.17±0.03, but its activity in G2 was reduced in the acute and chronic phase of the infection ($p<0.0001$). G1 presented a CIV activity of 0.11±4.4 x 10^{-3}, similar values were obtained in G2 at 10 and 30 d.p.i., but at 365 d.p.i. decreased ($p<0.01$). The functional alterations in the mitochondrial respiratory chain described, surely alter the energy production showing that this organelle is involved in the physiopatogenia and evolution of the cardiopathy in Chagas disease.

P1329

Effectiveness of different ablation methods for paroxysmal atrial fibrillation in randomized study

D. Lebedev[1], **E. Mikhaylov**[1]. *[1]Almazov Heart, Blood and Endocrinology Centre, Saint-Petersburg, Russian Federation*

Purpose: to perform comparative effectiveness analysis of different atrial fibrillation (AF) catheter ablation methods: circumferential pulmonary veins (PVs) isolation (CPVI), selective ganglionated plexi (GP) ablation and segmental ostial ablation of PVs (SOA). **Methods:** catheter ablation of AF was performed in 120 patients. Mean age 58±7 years old. Men 48%. The patients were randomized into 3 groups: A – CPVI (57 patients), B – selective GP ablation (32 patients), C – SOA (31 patients). Three groups were comparable each other in relation to patients' age, sex, duration of AF history, left atrium size, ejection fraction and hypertension, diabetes, coronary artery disease rates. Follow-ups were carried out at 3, 6, 12 months after procedure. Arrhythmia assessment was guided by transtelephone event recording and 2–3 times Holter monitoring at each follow-up. **Results:** at 12th month after procedure repeat procedures were performed: group A – in 4 (7%) patients, group B – in 3 (10%) patients, group C – in 20 (62%). At 12 month in group A 42 (73%) patients were free of atrial arrhythmias, in group B – 20 (65%) patients, in group C – 21 (66%). Left atrial flutter was registered in 4 patients from group A. Significant PV stenosis was revealed in 1 patient from group C. Acute transient stenoses of 3 PVs were observed in 1 patient from group B. **Conclusion:** the most effective AF catheter ablation method with the smallest number of repeated sessions AF was CPVI, but left atrial flutter was registered only after CPVI. Acute PV stenosis can be a complication of selective GP ablation.

P1330

P-wave analysis as a clue for optimization of paroxysmal atrial fibrillation ablation

D. Lebedev[1], **E. Mikhaylov**[1]. *[1]Almazov Heart, Blood and Endocrinology Centre, Saint-Petersburg, Russian Federation*

Background. Paroxysmal atrial fibrillation (PAF) can be treated with segmental ostial ablation of the pulmonary veins (SOA) and with circumferential left atrial ablation around the pulmonary veins (CLAA). There is no unified rule to select one of these approaches. **Purpose.** The aim of the present study was to demonstrate the possibility to select the catheter ablation method using Holter monitoring and a special ectopic P-wave analysis. **Methods.** 58 symptomatic patients (pts) (34 male; age 56±17 years) were included in the study. Holter monitoring was performed in 12 leads in all patients. Early "P on T" premature atrial contractions (PAC) were assessed using pre-ectopic T wave subtraction. Using vectorial and morphologic analysis we could determine localization of ectopic premature beats and number of arrhythmogenic foci. SOA was performed using Lasso catheter (group A) and CLAA was performed using Carto navigation system (group B). **Results.** According to ectopic P-wave analysis 16 (27.6%) pts had

only one "P on T" ectopic P-wave form, 27 pts (46.6%) had two ectopic P-wave forms, 15 (25.8%) had three forms. 28 pts underwent SOA (12 with one ectopic P-wave form, 11 with two forms and 6 with three forms). CLAA was performed in 30 pts (4 with one ectopic P-wave form, 16 with two and 11 with three forms). During 12±6 months we could observe recurrences of PAF and necessity of repeat ablations. In group A all 6 pts with three forms of ectopic P-waves (100%) had symptomatic recurrence of PAF and underwent repeat ablation, 4 of 11 (36%) pts with two ectopic P-wave forms underwent repeat ablation and only 1 pts with one form (8%) needed a repeat procedure. In group B only 2 patients (7%, both with three ectopic P-wave forms) had non significant benefit of the first procedure and needed repeat ablation. **Conclusions.** In pts with PAF number of atrial triggering ectopic foci can play significant role in SOA effectiveness. In pts with more than two atrial ectopic foci can be recommended CLAA to get more effective catheter treatment.

P1331

Misleading interpolated premature atrial contractions in patients with paroxysmal atrial fibrillation: their mechanism and origination

E. Mikhaylov[1], D. Lebedev[1]. [1]*Almazov Heart, Blood and Endocrinology Centre, Saint-Petersburg, Russian Federation*

Background. A spontaneous interpolated atrial premature contraction (PAC) is an infrequent and poorly studied phenomenon. **Purpose.** The aim of the present study was to evaluate how often interpolated PACs can be uncovered in patients (pts) with paroxysmal atrial fibrillation (PAF) according to Holter monitoring data, and to discover distinctive features of interpolated PACs in comparison with non-interpolated PACs. **Methods.** 44 pts with PAF were observed with 12-leads Holter monitoring. 22 of them had already undergone segmental ostial ablation or circumferential ablation of the pulmonary veins. 29 pts took antiarrhythmic agents. Interpolated PACs were compared with non-interpolated PACs which had compensatory pauses and were positioned within 60 seconds around interpolated PACs. We have used following comparing criteria: PAC coupling interval, time of appearance, heart rate, sinus cycle lengths before ectopic event (10 cycles), sinus cycle lengths after ectopic event (8 cycles), sinus P width and PQ duration before ectopic event, features of intraventricular conduction, ectopic P wave morphology with mathematical subtraction of pre-ectopic T wave, antiarrhythmic therapy and history of ablation procedures. Statistical difference was noted when $p<0.05$. **Results.** We uncovered interpolated PACs in 5 patients (11.4%). One pt had periods of interpolated atrial bigeminy, one had blocked interpolated PAC. There were assessed 34 interpolated PACs and 92 PACs with compensatory pauses. All interpolated PACs were "P on T'. We found statistically significant difference between interpolated and non-interpolated PACs in pre-ectopic sinus cycle lengths; "coupling interval of PAC/pre-ectopic sinus cycle" ratio was 0.377 ± 0.03 and 0.45 ± 0.08 respectively. We also found a significant PQ interval prolongation after interpolated PACs in the first post-ectopic sinus complex. All other criteria did not have significant difference. According to vectorial and morphological analysis of ectopic P-waves after subtraction of pre-ectopic T-wave, we localized their origination from left upper pulmonary vein (LUPV) (3 pts) and from right upper pulmonary vein (RUPV) (2 pts). **Conclusions.** In our study 11.4% pts had interpolated "P on T" PACs, presumably from LUPV and from RUPV. Noteworthy that coupling intervals did not differ between two types of PACs. We suppose that pre-ectopic sinus cycle length can play the most important role in forming of atrio-sinus block leading to interpolated PAC. Interpolated atrial bigeminy can imitate paroxysmal atrial tachycardia. Blocked interpolated PACs can be missed on ECG in a case of inattentive Holter analysis.

P1332

Arial arrhythmias and their origination in patients with paroxysmal atrial fibrillation according to ambulatory observation

E. Mikhaylov[1], D. Lebedev[1]. [1]*Almazov Heart, Blood and Endocrinology Centre, Saint-Petersburg, Russian Federation*

Background. Atrial ectopic events on the surface ECG are well described, but their features in outpatients are not well known. Purpose. The aim of the present study was to assess atrial arrhythmias during 24-hours ambulatory Holter monitoring in patients with paroxysmal atrial fibrillation (PAF), including ectopic P-wave analysis after pre-ectopic T-wave subtraction. **Methods.** 58 patients (pts) (34 male; age 56±17 years) were included in the study. All pts underwent 12-lead ambulatory Holter monitoring. We assessed and classified atrial arrhythmias as single and coupled premature contractions (early "P on T" and late), paroxysms of atrial tachycardias, typical and atypical atrial flutter (AFlut) and PAF. All early "P on T" premature atrial contractions (PAC) were assessed using pre-ectopic T wave subtraction in 12 leads. **Results.** 53 pts (91%) had single early "P on T" PACs, 43 (74%) pts had early coupled PACs, 38 (65%) had paroxysms of atrial tachycardia. Single late PACs were uncovered in 28 (49%) pts, coupled late PACs – in 8 (13%) pts. Blocked PACs were revealed in 7 (12%) pts, interpolated PACs in 5 (12%) pts. 23 (49%) pts had PAF during ECG registration. Initiation of PAF was only with early "P on T" arrhythmias. Atrial fibrillation was observed during all day of Holter monitoring in 3 pts. AFlut was revealed in 16 (28%) pts, 8 (14%) pts had atypical forms of AFlut. Aberration of atrial arrhythmias was diagnosed in 28 (47%) pts. Daytime arrhythmias had prevalence in 17 (29%), nighttime – in 3 (5%), mixed appearance was in 38 (68%) pts. After pre-ectopic T-wave subtraction in 12 leads we could assess polarity and morphology of early ectopic P-waves. P-waves with characteristics similar to P-waves from the left upper pulmonary vein (PV) were defined in 30 (52%) pts, similar to the right upper PV – in 33 (57%), similar to the left lower PV – in 17 (30%), similar to the right lower PV – in 10 (17%), similar to the inferior caval vein – in 8 (15%) pts. In 3 (5%) pts we found P-waves without described morphology. The following endocardial stimulation did not reveal atrial substrate which could lead to such P-wave morphology. In 16 (27.6%) pts we found one "P on T" ectopic P-wave form, in 27 (46.6%) pts – two ectopic P-wave forms and in 15 (25.8%) – three ectopic P-wave forms. **Conclusions.** Pts with PAF have different forms of atrial arrhythmias. Only early "P on T" arrhythmias can initiate PAF. AFlut was revealed in 28% pts, many of them have atypical forms of AFlut. Atrial arrhythmias frequently combine with atrioventricular and intraventricular conduction disturbances. More than 72% pts have more than two atrial ectopic triggering foci.

P1333

Adventitial infectious agents in heart transplant accelerated graft coronary atherosclerosis (AGCA)

NV Sambiase[1], ML Higuchi[1], MM Reis[1], E Bocchi[1], N Stolf[1]. [1]*Heart Institute of Sao Paulo Medical School*

Background: Vasculitis at adventitia of epicardial coronary arteries is associated with accelerated graft coronary atherosclerosis (AGCA) in heart transplanted (HT) patients. Chlamydophila pneumoniae (CP) and Mycoplasma pneumoniae (MP) antigens were found associated with adventitial inflammation in vulnerable coronary atheroma plaques as well as with the progression of early atheromas in ascending thoracic aorta. Objective- in the present work we investigated if MP and CP microorganisms are present in the epicardial coronary arteries of donor hearts and if the development of AGCA is associated with adventitial inflammation and increase of CP and/or MP following the immunosuppressive therapy. **Material and methods**-necropsied proximal and distal epicardial coronary segments from 34 HT recipients were grouped according to graft survival time and AGCA degree: G0<= 3 days of transplant/ no AGCA; G1>3 and <=160 days, and G2>160 days. G1+G2 were analysed and subgrouped in: with or without AGCA. Representative cross-sections were measured for: Intimal (INT) and total vessel areas; CP+ cells/mm2; MP-DNA/mm2; adventitial inflammation (ADV INFL). **Results** Intimal area correlated positively with adventitial inflammation total vessel area and graft survival time. CP antigens and MP–DNA were present in 100% cases. Numbers of CP+ cells/mm 2 in G1 and G2 were significantly higher than in G0 in the INT and ADV layers ($p<0.001$), not followed by difference in MP-DNA values ($p=0.37$ and $p=0.11$). In G1, there was a positive correlation between INT CP vs ADV CP ($r=0.83$, $p=0.01$) and with MP values in INT vs ADV ($r=0.69$, $p=0.05$), but not in G2. INT MP-DNA correlated with INT area ($r=0.82$; $p<0.001$) and ADV MP-DNA with total vessel area ($r>0.61$, $p<0.001$). In G2, there was a positive correlation between ADV INFL vs ADV CP ($r=0.57$, $p<0.05$), INT area with graft survival time ($r=0.57$ $p<0.05$) and INT area with VT ($r=0.81$, <0.001). Subgroup with AGCA (considered when presented higher intimal area in both proximal and intimal segments) showed significantly higher amount of CP ($p<0.05$), and higher CP/MP ratios than the subgroup without AGCA. **Conclusion:** C.pneumoniae antigens and M. pneumoniae DNA are usually present in the coronary arteries of donor hearts, immunosuppression was accompanied by increase of CP but not of MP, which were associated with adventitial inflammation and intimal thickening. Development of AGCA was associated with increased amount of CP antigens and in CP/MP ratio, independently of the post transplant follow up period.

P1334

Serum Paraoxonase 1 Activity and Oxidative Markers of LDL in patients with Cardiac Syndrome-X

M. Kayikcioglu[1], S Saygi[1], E Azarsiz[2], LH Can[1], H Kultursay[1], EY Sozmen[2]. [1]*Ege University Medical School Cardiology Dept* [2]*Ege University Medical School Biochemistry Dept*

Objective: Myocardial ischemia in cardiac syndrome-X (CSX) is believed to be due to microvascular dysfunction. Increased oxidative stress is one of the suspected mechanisms of microvascular dysfunction. The aim of this study was to evaluate the oxidative status in patients with CSX, by determining serum paraoxonase-1 (PON-1) activity in addition to LDL-oxidation markers. **Methods and results:** This cross-sectional study consisted of patients with CSX (Group-I, n=30), patients with coronary artery disease (Group-II, n=31), and healthy controls (Group-III, n=32). Lipid parameters, PON-1 activity, and LDL oxidation markers (conjugated-diene and thiobarbituric acid-reactive substance- TBARS) were measured. Endothelium-dependent vasodilatation was determined by brachial artery ultrasonography. There were no significant differences in serum LDL, apolipoprotein-B, baseline LDL-diene, and LDL-TBARS levels between groups. There were no differences in both apolipoprotein-A1 and HDL levels between Group-I and Group-III. Apolipoprotein-A1 and HDL levels were significantly lower in Group-II than Group-I patients ($p<0.001$). PON-1 activity was lowest in Group-II patients. Average PON-1 activity in Group-I was in between of Group-II and-III. The percent change of LDL-diene levels after stimulation was significantly higher in Group-II than in Group-I and III ($p=0.005$ and $p=0.02$, respectively). The percent change of LDL-TBARS levels was lowest in Group I ($p=0.03$). There was a moderate correlation between endothelium-dependent vasodilatation and PON-1 activity in Group-I ($r=0.43$, $p=0.04$). **Conclusions:** Enhanced oxidative stress might be one of the causes of impaired endothelial functions resulting in myocardial ischemia and chest pain in patients with CSX. The relatively preserved HDL and apolipoprotein-A1 levels in patients with CSX might be a protective mechanism against progression of coronary microvascular dysfunction to atherosclerotic coronary artery disease.

P1335

Does Myocardial Perfusion Scintigraphy Useful in the Detection of Ischemia after Surgical Revascularization?

L. Cardenas[1], H Herbas[2], R Conti[3], Z Fichino[4], A Thom[5], R Lopes[6], M Oliveira[7], P Smanio[8].

Background: There is still no definition of the exact time after CABG that patients (p) should make a cardiac evaluation after surgical revascularization (CABG) and also it not well established which one is the best method to evaluate this group of patients. There are many important variables to be considered when a p presented clinical signs of ischemia after myocardial CABG. Many p have multiples cardiac risk factors and they may need another angiographyc study (cine) to evaluate if there is progression of disease, lack of coronary reserve, incomplete CABG or insufficient collateral circulation (CC). Myocardial perfusion scintigraphy (MPS) is a non-invasive method with high diagnostic accuracy in the detection of

CAD that also helps in the clinical management of this group of patients. **Objectives:** To evaluate the prevalence of ischemia after CABG trying to verify which p should go to an invasive evaluation. Also to verify which clinical-epidemiological characteristics are associated with ischemia on MPS. **Methods:** It was a retrospective, observational study of 181 p after 72 (+/-13) months of CABG. There was 77% male, mean age of 63+/- 9 years, 88% with hypertension, 78% with hyperlipemia, 46 with diabetes, 39% was tobacco user, 32% had positive familiar history, 22% obesity, 17% peripheral vascular disease and 15% chronic renal insufficiency. From the total, 46% had episodes of chest pain and 26% dyspnea. In 19% of p the CABG was incomplete and in 24% it was observed presence of CC in the cine. The functional test performed was exercise stress test (ETT) in 60% and it was considered suggestive of ischemia if ST segment changes after stress phase. The MPS were performed with MIBI-Tc-99m by gated-SPECT technique and it was considered suggestive of ischemia in the presence of reversible perfusion defects after stress. The mean basal left ventricular ejection fraction (LVEF) observed was 50 % (+/-13). The statistical analysis was performed by chi-square and independent T tests and it was considered significant if p value $\leq$ 0, 05. **Results:** The functional tests (ETT and dipyridamole) were suggestive of ischemia in 34% and the MPS in 78% (p=0,001). Of the p with ischemia on MPS in 64% it was observed in the treated with CABG areas. There were no clinical-epidemiological characteristics able to discriminate p with ischemia. **Conclusion:** The obtained results suggest that patients with multiple cardiac risk factors to CAD after a mean period of 72 months after CABG have high prevalence of ischemia in treated areas and maybe they ought to perform a MPS. The MPS showed higher prevalence of ischemia in comparison with functional non-invasive tests.

P1336

COMBINATION OF GENETIC POLYMORPHISMS AND SMOKER STATUS IN HIGH RISK FAMILIES

M. Stoll[1], P. Esperón[1–3], V. Raggio[1], M. Lorenzo[1], M.C. Artucio[1], F. Kuster[2]. [1]*Area Genética Cardiovascular. Comision H. de Salud Cardiovascular* [2]*Servicio de Cardiología Hospital de Clínicas* [3]*Servicio de Cátedra de Biología Molecular Facultad de Química.Montevideo.Uruguay*

The goal of the study is to evaluate the clinical applicability of genomic profiling in guiding preventive interventions in high risk patients. Most genetic association studies in highly complex diseases, like coronary artery disease, do not take into account combination of risk alleles of low additive effect in the determination of risk in genome-environment interactions. As a result many single locus associations have not been replicated giving rise to controversial results. Several gene polymorphisms previously associated with cardiovascular risk were determined and the additive effect of different genotype combinations (genomic profile) and smoker status were tested. The study involved 172 patients (aged 30 to 80) in high cardiovascular risk families, selected by premature disease or familial aggregation of early cardiovascular events (before age 60 for both sex) according to a qualitative risk score. Phenotypic data on cardiovascular risk factors and cardiovascular events were obtained from clinical records and interrogatory. After informed consent, blood samples were obtained, DNA extracted and genotyping for Apolipoprotein E (Apo E) E2, E3, E4 and Angiotensin Converting Enzyme (ACE) insertion/deletion polymorphisms was performed. Carriers of ApoE E4 allele have almost twice the frequency of events in all outcomes considered (coronary artery disease, acute myocardial infarction, revascularization and atherosclerosis in any vascular territory), compared with E3 homocygotes (odds ratio (OR) 1,92 for acute myocardial infarction (AMI),95% confidence interval (CI) 1.81 to 10.36 P< 0.0005). The ACE genotype DD conferred an OR of 1.46, 95% CI: 0.59 to 3.55 P< 0.4 for AMI but ACE D/D genotype combined with ApoE E4+ (E4.D/D genotype) increase risk significatively against E3E3/II individuals (OR 27.1, CI 2.20 to 235.5 P< 0.002). The occurrence of AMI among non smokers is less than 2% in E3E3 or E2E3 genotypes in contrast to 29% AMI in E4 carriers (OR 3.22, CI 1.74 to 17.38, P< 0.002 against E3E3 non smokers). Among smokers AMI was 25% in E3E3 carriers (OR 2.86,95%CI 1.18 to 15.84, P< 0.02 against E3E3 non smokers), 48% in E4 carriers (OR 7.95 CI 2.91 to 44.43, P< 0.0001) and 80% in E2 carriers (OR 62.9, CI 4,84 to 557.7, P< 0.0001). The presence of allele E4 in non smokers generates an equivalent amount of AMI than the smoker status in E3/E3 in this high risk individuals. Besides, the E2 allele in smokers seems to be a non-protective high risk allele. Patients ApoE E4 allele was associated with a higher risk of development of CAD, myocardial infarction and need for revascularization. This association is stronger in patients with other risk genotypes (DD for ACE) and smokers. The combined information derived from genomic risk profiles and classical risk factors could be used in preventive programs aimed at avoidance of morbimortalilty specially in young adults from high risk families for cardiovascular disease.

P1337

Importance metabolic syndrome on hypertensive patients with left ventricular hypertrophy – an 10 year follow-up study

I. Tasic[1], D. Djordjevic[1], G. Lazarevic[2], D. Mijalkovic[1], M. Lovic[1], D. Lovic[1], N. Miladinovic Tasic[3]. [1]*Institute of Cardiology " [2]Niska Banja"* [4]*Clinic of Cardiology Nis* [5]*Faculty of Medicine, University of Nis,*

The metabolic syndrome (MS) is an agglomeration of interrlated risk factors that indicate individuals at increased risk for type 2 diabetes mellitus and cardiovascular events. **Aim:** 1. to prove the presence of MS at patients with hypertension and left ventricular hypertrophy (LVH) analyzing clinical parameters; 2. to estimate the impact of MS on risk of new-onset diabetes, subclinical carotid atherosclerosis and patient prognosis. **Method:** There have been analyzed 73 hypertensive patients without diabetes (43 male), average age 56.3 $\pm$ 8.5 with echocardiographically proved LVH (average LVMI 163.5 $\pm$ 31.8 g/m^2). **Results:** 36 patients (55 $\pm$ 8 years) fulfilled the criterion of MS. They had significantly higher glucose level, lower HDL cholesterol, higher triglycerides and higher body mass index (29.6 $\pm$ 3.8 vs. 27.8 $\pm$ 3, p<0.03). This group of patients had more frequent complex VA and significantly lower values of HRV. After ten years of observation 56% patients with MS was new-onset diabetes and 17.4% from group without MS (p<0.02). ColourDuplex ultrasonography of the carotid arteries was performed on Acuson Sequia C236 with high-frequency linear probe with 8 MHz. The thickness of the intimomedial complex in patients with MS was 1.03 $\pm$ 0.03 vs. 0.99 $\pm$ 0.02 mm in patients without MS. Twelve patients with MS (33%) had carotid plaques, and at 43% of patients had been diagnosed coronary disease (3 IM, 2 PTCA with inbuilt stent, ten with angina pectoris and positive exercise tests), while 20% of patients with non MS had carotid plaques (p<0.04), and 9% had coronary disease (3 with angina pectoris and positive exercise tests) (p<0.002). 4 patients in group with MS had fatal CV events (3 CVI – 3 deaths, 1 sudden death), while in the second group 2 patients had 2 sudden death (ns). **Conclusions:** Results of our study showed that patients with LVH and MS had significantly greater risk of the new-onset diabetes, carotid atherosclerosis and CAD, and serious cardiovascular events

P1338

Can Eustachian valve be a risk factor for pulmonary embolism?

I. Kurt[1]. [1]*Adana Numune Education and Research Hospital Department of cardiology-Adana/Turkey*

While pulmonary embolism is common, it is not always possible to determine its risk factors. Recently, it has been noted that a portion of thrombi localized in the right atrium could accompany congenital structures such as eustachian valve. Eustachian valve and thrombus have been identified in the right atria of two cases diagnosed with pulmonary embolism, one occurring after the childbirth and the other one with chronic pulmonary disease.Eustachian valve and associated thrombus development in the right atrium may predispose to pulmonary embolism by forming a mechanic barrier in the presence of recurring pulmonary embolism. **Case 1:** A 31-year old woman without any prior complaints experienced progressively worsening shortness of breath, palpitations and fatigue after brief periods of activity during the last trimester of her pregnancy. TTE examination showed normal left cardiac functions and valves, severely dilated right cardiac spaces, tricuspid valve failure (3+), intact interatrial septum, dilation in the right atrium; and a mobile mass extending from the junction of the inferior vena cava and right atrium up to interatrial septum has been identified as EV (Figure 1). The mismatch ventilation/perfusion defect identified by the pulmonary ventilation and perfusion scintigraphy was reported as highly probable pulmonary embolism. **Case 2** 52-year old male patient admitted with generalized swelling in the abdomen and legs, shortness of breath and fatigue after brief periods of activity that were present within the previous year. COPD was identified in his personal history and his physical examination revealed abdominal ascites, venous distension in the neck and bilateral pretibial edema. TTE showed severe dilation in the right cardiac spaces; within the right atrium, membrane extending from coronary sinus orifice up to inferior vena cava and thrombus were identified with diffuse spontaneous echocontrast (Figure 2). Pulmonarty artery pressure was 80 mmHg. Left ventricle function and dimensions were within normal range. It was found that tension of the Eustachian membrane was increased due to excessive dilation of the right atrium and its mobility was restricted.. In conclusion, in conditions where clotting tendency is increased such as pregnancy and COPD where dilation occurs in the right cardiac spaces, presence of embryonic remnants. in the right atrium might predispose to thrombus formation by behaving as a mechanic barrier. Concomitance of EV and thrombus in the right atrium may also increase the risk for pulmonary embolism. We believe that larger case studies are needed to confirm this association and to determine the predispositional role of EV in the development of right atrial thrombus and pulmonary embolism

Figure 1.Transthorasic echocardiographic view in the subcostal position showing between inferior Vena cava (ÝVC) and right atrium (RA) trombus(Tro), the eustachian valve(EV),Ao=Aort,ÝVC=inferior vena cava

Figure 2.TTE shows severe dilation in the right cardiac spaces; within the right atrium (RA), membrane extending from coronary sinus orifice up to inferior vena cava and thrombus. Eustachian valve(EV), RA trombus (Tro),LA=left atrium,IAS=interatrial septum

P1340

Noninvasive assessment of coronary flow reserve after percutaneous coronary intervention in patients with previous myocardial infarction: Relation to functional recovery

A. Djordjevic-Dikic[1], M. Ostojic[1], B. Beleslin[1], J. Stepanovic[1], V. Giga[1], B. Vujisic-Tesic[1], I. Nedeljkovic[1], M. Nedeljkovic[1], S. Stojkovic[1], Z. Petrasinovic[1].

Background: Impairment in coronary flow reserve (CFR) after myocardial infarction may be due to impaired microvasculature structure and function and/or presence of flow-limiting stenosis in the infarct related artery (IRA). After successful stent implantation in IRA, CFR could be accurately related to microvascular function and viability. **Objective:** The aim of this study was to evaluate in patients with previous myocardial infarction the coronary flow reserve (CFR) in the infarct related artery (IRA), before and after elective stenting, in relation to left ventricular recovery. **Methods:** In order to assess dynamics of CFR, measurements were performed before stenting, 24h and at first and third month of follow-up, in 48 patients (39 male, 9 female, mean age 53$\pm$8) with previous (>7 days) myocardial infarction using Transthoracic Doppler echocardiography (TDE) during dipyridamole vasodilatation. CFR was defined as the ratio of peak hyperemic to basal averaged peak velocity in the distal part of IRA. IRA was LAD in 39 pts and RCA in 9 pts. Ventricular recovery was determined as improvement in resting WMSI >0, 20 at third month follow-up comparing to values before PCI. **Results:** According to the improvement in resting WMSI at third month, patients were divided in two groups: group I recovered (n=35) and group II nonrecovered (n=13). Before PCI, no differences between two groups were observed in WMSI (1.38$\pm$0, 23 group I vs. 1, 47$\pm$ 0, 20 group II, p=ns) and in CFR (1.57$\pm$0.32 group I vs. 1.53$\pm$0.28 group II p=ns). CFR increased significantly in both groups 24h after PCI comparing to values before (p<0.0001), but was higher in pts with left ventricular recovery in comparison to group II (2.71$\pm$0.86 vs. 2.05$\pm$0.29, p<0.001). The same relation was observed at first (2.82$\pm$0.77 vs. 2.37$\pm$0.34, p=0.02) and third month (2.64$\pm$0.51 vs. 2.27$\pm$0.58, p=0.03). At third month WMSI was significantly better in group

I in comparison to group II (1.16±0.23 vs. 1.42±0.23, p=0.003). By ROC analysis, the cut-off value for CFR 24h after PCI best discriminating left ventricular recovery was 2.25 with sensitivity 63% and specificity 90%. By multivariate analysis, diastolic DT before PCI and CFR 24 h after PCI were independent predictors of functional recovery in the chronic phase after myocardial infarction, DT of 634ms has Sn of 86% and Sp of 95%, p=0.017, for left ventricular recovery. **Conclusion:** According to our results longer diastolic DT before PCI and higher CFR 24h after PCI reflect preserved microcirculation in chronic phases after myocardial infarction that is capable for recovery. Maintains of the higher CFR levels during follow-up only confirm this observation.

P1341

AN ANALYSIS OF LEFT ATRIAL EJECTION FRACTION IN THE DIFFERENT TYPES OF LEFT VENTRICLE DIASTOLIC DYSFUNCTION

JLF Jefferson Luís Vieira[1], TVB Thaís Valenti Branchi[1], IK Ilmar Köhler[1], LCD Luís Cláudio Danzmann[1], MRT Marco R. Torres[1]. *[1]Hospital Luterano/Universidade Luterana do Brasil. Porto Alegre (RS), Brazil*

Introduction: Left atrium (LA) indexes are used to evaluate functional and geometric alterations in patients (pts) with heart failure (HF). Certain LA parameters may also be worth to estimate left ventricle (LV) filling compromise when this diagnosis is more difficult. Aim: Verify the association among LA ejection fraction (EF) and LV dimensions and systolic and diastolic in pts with HF by transmitral and tissue Doppler echocardiography (Echo). **Methods:** Twenty four pts with diastolic HF and preserved LV-EF were studied by Echo with analysis of the following variables: E and A wave and E/A, plus E′, A′ waves, E′/A′, E/E′ and also LA-EF. **Results:** Mean age of this population was 61.5±12 (varying from 43–88) years old, 46.4% women, body mass index 28±2.4 kg/m2, being 71.4% of pts in NYHA I e II functional class and LV-EF of 69±9%. The pattern of LV relaxation deficit was the most prevalent abnormality observed (64.3%). LA-EF followed the deterioration of the NYHA functional class (r=0.42; P=0.022), and also evidenced a positive correlation with E/E' (r=0.46; P=0.014), by means of Pearson correlation statistics. **Conclusion:** Patients with heart failure showing preserved ejection fraction evidenced a significant correlation of left atrium ejection fraction with NYHA functional class and the left ventricle filling function.

P1342

Clinical Outcome after multilesion percutaneous interventions: comparison of a selective and non-selective use of drug-eluting stents

M. Albertal[1], F. Cura[2], L.T. Padilla[3], P. Perez Balino[4], A. Candiello[5], S. Jozami[6], J.A. Belardi[7]. *[1]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [2]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [3]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [4]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [5]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [6]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina [7]Instituto Cardiovascular de Buenos Aires, Department of Interventional Cardiology and Endovascular Therapeutics, Buenos Aires, Argentina*

Background: unrestricted use of drug eluting stents (DES) during multilesions angioplasty is difficult to establish worldwide due to cost constraints. The clinical impact of an exclusive use (EXCLUSIVE) versus selective use (SELECTIVE) of DES remains unknown. **Objective:** Compare the EXCLUSIVE and the SELECTIVE approaches of DES implantation in our institution. **Methods:** From April 2003 to August 2006, we identified a total of 710 patients who underwent DES implantation, 305 patients for multilesions receiving one or more DES. The criteria for DES implantation were driven by the medical assessment of restenosis risk, the degree of myocardial territory at risk and the financial feasibility. Long-term clinical outcome was assessed in this population. **Results:** Patients in the EXCLUSIVE group (n=88) had more diabetes (26.1 vs. 14.3%, p=0.012), and a trend towards more elective procedures (21.6 vs. 13.8, p=0.069) than patients in SELECTIVE. Patients in the EXCLUSIVE group had less number of lesions treated per patient (2.2±0.5 vs. 2.4±0.6, p=0.004) and received higher number of DES (2.0±0.8 vs. 1.2±0.5, p<0.001) than the SELECTIVE group. The SELECTIVE group had a similar number of bare-metal stents and DES implanted (1.1±0.8 vs. 1.2±0.5, p=0.1). At a median follow-up of 426 days, death and MI were similar in the 2 groups. Stent thrombosis occurred in 5 cases, 1 in the EXCLUSIVE (sudden death) and 4 in the SELECTIVE group (3 angiographically confirmed and one sudden death). New target vessel revascularization (TVR) rates were 8 and 12.9% for the EXCLUSIVE and SELECTIVE groups, respectively (p=0.21). In the SELECTIVE group, TVR and target lesion revascularization rates only in lesions treated with DES were 6.9 and 6.5%, respectively. TVR rates due to bare-metal stents implantation were 6%. Between the two DES groups, MACE (death, MI and TVR) rates were similar (9.1% in the EXCLUSIVE vs. 13.8% in the SELECTIVE group, p=0.25). **Conclusion:** During multilesions angioplasty, a selective strategy of DES use appeared safe. Nevertheless, TVR due to bare-metal stents implantation corresponded to half of the TVR observed. A criterion for the correct use of DES in multilesions stenting is still needed.

P1343

RESPONSES OF CORONARY FLOW IN POSTMENOPAUSAL WOMEN WITHOUT EVIDENCES OF MYOCARDIAL ISCHEMIA EVALUATED BY TRANSESOPHAGEAL DOBUTAMINE-STRESS-ECHO: A RANDOMIZED, DOUBLE BLIND, CROSSOVER CLINICAL ESSAY, WITH WASH OUT, DURING HORMONE REPLACEMENT AND RALOX

MRT Marco R. Torres[1], JCT João Carlos Tress[2], TCDE Tereza Cristina Duque Estrada[2], LSC Lilian S. Costa[4], OCEG O. C. E. Gebara[5]. *[1]Hospital de Clinicas de Porto Alegre e Universidade Federal do Rio Grande do Sul [2]Hospital de Clí,nicas de Niterói,i. [4]Santa Casa de Misericó,rdia do Rio de Janeiro. [5]Instituto do Coraç,ã,o da Universidade de Sã,o Paulo*

Introduction. Endothelial dysfunction is uncommon in healthy women in the premenopausal age. Previous publication by our group (Costa 2004. Am J Cardiol), showed in the same population of this study a significant reduction in blood arterial pressure and in pulse wave velocity (carotid and femoral arteries) under administration of female hormones. **Aim.** This randomized, double blinded crossed clinical essay with a 4 weeks wash out period between both arms was conducted in 30 postmenopausal women with treated AH (thiazide use), to verify effects of 60mg raloxifene (®) vs. transdermic hormones consisting of 50micrograms estradiol+250micrograms norethisterone (E+P) for 8 weeks in a random way and 4 weeks wash out between them. Maximal diastolic velocity and the ratio of coronary flow during dobutamine transesophageal echocardiography (TEE-dob) in pts during outpatient anesthesia (Propofol) were tested in 4 moments: basal, ®, E+P, and 6 months randomized run out, with placebo, total of 16 pts. **Methods:** Continuous dobutamine IV infusion (5 to 40micrograms/kg/minute) and coronary flow velocities of anterior descending (AD), circumflex (CX) and right coronary (RC) arteries obtained in the 4 phases of the protocol. Statistical analysis done on mean-SD of delta flow ratio (diastolic velocity stress"ibasal) of the 3 arteries were calculated. Delta values (rest-intervention) at basal, before and after ® and E+P, and in run out were considered. A test to test all effects that could interfere on therapeutic actions (sequence, period and carry over) and normality of the variables demonstrated, they were aggregated in 4 groups and correlated. **Results:** Pearson correlation test to verify association among variables (basal vs. ®, vs. E+P and vs. run out evidenced circumflex ® n=30 r= 0.476(**) (0.008) and circumflex E+P n=30 r= 0.670(**) 0.000. P= ** significant at the level 0.01. All the other correlations were not statistically significant. **Conclusion:** In the present clinical essay considering the previous published observation in this population of postmenopausal women with controlled arterial hypertension and no evidences of significant coronary obstructions and myocardial ischemia that demonstrated a beneficial effect of hormone therapy with raloxifene or an association of estrogen plus progestin on the endothelial dysfunction, evidenced by increase of arterial elasticity and decrease of blood arterial pressure, the beneficial effect is not in accordance with findings of present sutdy that shows an absence of generalized hemodynamic modifications on the coronary arteries, but only in the circumflex artery.

P1344

Prevalence of Chagas Disease evaluated by 13 years in the Hospital San Fernando of Buenos Aires

M. Galli[1], E. Alvarez[2], M. Boscaro[3], H. Deschle[4], M. Koretzky[5], J. Seresi[6], A. Rubinich[7]. *[1]Hospital San Fernando Buenos Aires Argentina [2]Hospital San Fernando Buenos Aires Argentina [3]Hospital San Fernando Buenos Aires Argentina [4]Sociedad Argentina de Cardiología [5]Sociedad Argentina de Cardiología [6]Hospital San Fernando Buenos Aires Argentina [7]Hospital San Fernando Buenos Aires Argentina*

Introduction: Knowing that Chagas disease is a scourge for the Latin-American peopple,it is essential to know the real prevalence of the same in order to assess the measures so far implemented. **Objetive:** To determine the prevalence s variation in Chagas disease positive serology, in Buenos Aires, in the past 13 years. **M & M:** It analyzed the population attending in the service of Chemotherapy of Hospital San Fernando as a donor,over the 13 years (1995–2007).We examined 21.944 blood samples that were processed in our hospital.Performing HAI, IFI, and ELISA, considering positive matching two of them.The population was divided into: first 1995–2000(10.705);second period from 2001–2007(11239).To compare the prevalence of the same test was used to the difference in proportions. **Results:**There was a significant reduction in positive serology in the period 2001–2007 over the previous(IC 95%,13–39,P<0,05) **Conclusions:** There was a significant decrease in the prevalence of Chagas disease.This demonstrates the positive outcome of the national campaign to combat Chagas disease implemented since 1992.

Years	Donors	Reagents	Prevalence
1995	1573	60	3,81%
1996	1745	52	2,97%
1997	1597	63	3,94%
1998	2192	51	2.32%
1999	2396	41	1.71%
2000	1202	29	2.41%
Totals	**10705**	**296**	**2.76%**
2001	906	15	1.55%
2002	1408	24	1.70%
2003	1772	28	1.58%
2004	1571	36	2.29%
2005	1969	48	2.43%
2006	2171	54	2.48%
2007	1442	33	2.28%
Totals	**11239**	**198**	**1.76%**

P1345

Lone Atrial Fibrillation : Comparation with Atrial Fibrillation with Heart Disease. OFFICE FA Study

J. Gant Lopez[1], D. Di Toro[1], C. Muratore[1], J. Battista[1], A. Andina[1], A. Lucchini[1], C. Damico[1], R. Borracci[1]. [1]*Area de Investigacion. Sociedad Argentina de Cardiologia*

Introduction The patients (pts) with Lone Atrial Fibrillation (LAF) have clinical and prognostic characteristics different than pts with Structural Heart Disease. There are not many new data about these presentation types of atrial fibrillation (AF) in our country. **Objective:** Analyze and compare the clinical characteristics between LAF and AF with Heart Disease in ambulatory pts. **Methods:** OFFICCE FA was a prospective study with consecutives ambulatory pts who were received treatment from cardiologists all over the country. We selected 1015 pts. The diagnostic of AF was confirmed by Electrocardiogram during 12 months before. The inclusion criteria to define LAF were: Age $<$ 60, without cardiovascular risk factors and no Herat Disease. We analyzed clinical characteristics, previous cardiovascular events, symptoms and medical treatment. **Results:** The relative prevalence of LAF was 5%. Table shows characteristics of both groups In LAF the most frequently symptom was palpitations (70 vs 54.5 %, $p<0.05$), and Rhythm Control pharmacological strategy treatment was more used (72 vs 35,8% $p<0.001$).Beta Blockers administration (40 vs 46%, NS) y Amiodarone usage (52 vs 47,6%, NS) were similar in both groups like antiplattellets drugs utilization (50 vs 50.9 %, NS). **Conclusión:** The LAF examined in ambulatory pts suggested that it is a variety of AF with low prevalence and showed principally as first episode and paroxistic, frequently treated with antiplatellets and antiarrytmics drugs, similar than AF with Structural Heart Disease despite different clinical characteristics y prognostic outcome.

%	LONE AF	Non Lone AF	Odds	CI 95%	p
Male	60	55			NS
First Episode	56	27,1	3,42	1,85–6,38	<0.001
Paroxistic	46	18,5	3,75	2–6,96	<0.001
Persistent	36	26,7	1,54	0,8–2,92	NS
Permanent	8	48	0,17	0,06–0,43	<0.001
Previous AF	32	42,2			NS
Previous STROKE	4	8,7			NS

P1346

TiTAN2® (Hexacath, France), a titanium-NO coated stent: a drug-eluting-like bare metal stent?

L. Van Casteren[1], P. Debruyne[1], B. Vankelecom[1], J. Roosen[1], E. Raymenants[2], S. De Ridder[3], L. Janssens[1]. [1]*Imelda Hospital, Bonheiden, Belgium* [2]*St. Maarten Hospital, Mechelen, Belgium* [3]*St. Elisabeth Hospital, Herentals, Belgium*

Aims: Since recent reports have raised concerns about late thrombosis with drug-eluting stents, a pursuit for alternatives is a necessity. We investigated the Titan2®, Hexacath France, a stainless-steel stent coated with titanium-nitride-oxide, a so called bio-active stent. It claims to have drug-eluting properties reducing in-stent restenosis, but not the possible disadvantages of increased late thrombosis. We evaluated the safety and efficacy of the Titan2® stent in our daily clinical practice. **Methods and results:** We evaluated all consecutive patients treated with one or more Hexacath Titan2® stents from January 2005 till December 2005. Both elective and urgent procedures were included, the choice of the stent was at the discretion of the operator without in or exclusion criteria. A total of 237 lesions (stent length 15,1mm +/-12,9 and diameter 3,0mm +/- 2,0) were treated during 198 procedures (25,8% in the setting of an acute ST-elevated myocardial infarction (MI), 13,1% in a non ST-elevated myocardial infarction), including 193 patients (age 65,4 years, 75% men). Risk factors included diabetes mellitus 9,6%, hypercholesterolaemia 65,2%, hypertension 54,6%, active smoking 45,3%. The primary end point of the registry was major adverse cardiac events (MACE) at 30 days and 270 days. The cumulative incidence of MACE was 4,0% at 30 days, including 3,5% peri-procedural non Q-wave myocardial infarction, 0,5% acute myocardial infarction ('definite' stent thrombosis) needing a revascularisation procedure and 0,5% cardiac death. At 270 days the rate of MACE was 18,2%, of which 11,6% target-lesion revascularisation (TLR), 1,5% CABG, 6,1% myocardial infarction (1,0% Q-wave MI, in fact 2 patients had a 'definite' stent thrombosis - 5,1% non Q-wave MI of which 1,5% occurred after hospital stay) and 2,5% cardiac death (1,0% with 'possible' stent thrombosis). **Conclusions:** The TiTAN2® stent, Hexacath France, the first bio-active stent, did not satisfy our need for an indisputable alternative for drug-eluting stents. In our small single-centre study, it is associated with a rate of major adverse events, in particular target lesion revascularisations, equal to the general known incidence with bare metal stents. This is in contrast to several recent clinical studies in which the titanium-NO stent has drug-eluting like properties, including reduced MACE. We hereby sharpen the need for further investigation of long-term efficacy and safety in large, randomized trials.

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InCor-HCFMUSP's Cardiovascular Emergency and Simulation Laboratory and ACLS Courses

F. Marques[1], W Nishizawa[1], M Gonzalez[1], S Timerman[1]. [1]*INCOR HC/FMUSP*

Introduction: The American Heart Association (AHA)'s Advanced Cardiac and Life Support (ACLS) courses began in Brazil in 1997. Nowadays, Brazil becomes the leadership in this training in Latin America (LA). At the end of 1999, the Incor-HCFMUSP's Laboratório de Treinamento e Simulação em Emergências Cardiovasculares (LTSEC - Cardiovascular Emergency and Simulation Laboratory) began its activities in AHA courses. It had a large demand because of the great reputation in teaching and development. Even though the focus of the institution is Cardiology, the LTSEC's mission was ever to set abroad the courses beyond Cardiology and its own frontiers. **Objectives:** To describe the LTSEC activities in ACLS courses since the early years until nowadays and compare the most recent training data with other Brazilian's and Latin American's centers data. **Material and Methods:** All the LTSEC data from november 1999 to december 2006 was recorded. The activities of the LTSEC were compared with others Brazilian's centers and LA's centers, according to the most recent AHA Training Information. **Results:** From November 1999 to December 2006, 3849 ACLS students were trained in ACLS by LTSEC and the number of students trained has been growing over the years. The major specialities are: 1892 Internists and 385 Cardiologists. In the AHA's last annual report, the total number of students that were treined in Brazil was 2684, and LTSEC treined 856 students (31,9%), followed by Brazilian Heart Society with 675 (25,1%), SOMITI with 503 (18,8%) HCRP-USP with 304 (11,3%) and the others training centers with 346 (12,9%). The major training centers in LA are: *Country Training Center ACLS* Brazil HCRP-USP 304 Colombia Universidad El Bosque 331 Mexico Instituto Mexicano del Seguro Social 500 Brazil SOMITI 503 Chile CEFAV 531 Colombia PLA Export Editores 535 Mexico SCAV Soporte Cardiovascular Avanzado de Vida SC 536 Colombia Fundacion Salamandra 636 Brazil Brazilian Heart Society 675 Brazil Laboratório de Treinamento e Simulação em Emergências Cardiovasculares. InCor.-HCFMUSP 856 **Conclusion:** The LTSEC has increased its number of ACLS students, and become the training center with the biggest number of people trained in ACLS in Brazil and all over LA. Although the institution has a focus in Cardiology, the LTSEC is carrying out its duty on training diffusion among professionals from various specialties.

P1348

Rationale for an Evidence-Based Intervention to Prevent Risk Factors for the Development of Chronic Disease

C. Jordan[1], M. Slater[2], T Kottke[3]. [1]*University of Minnesota, Department of Cardiology/School of Public Health* [2]*University of Minnesota, School of Public Health* [3]*Health Partners Research Foundation/University of Minnesota*

Background: Chronic diseases have become the major burden of mortality, morbidity and disability in the US. This group of diseases is by-and-large preventable, and while there are many chronic diseases, they share just four root causes: Physical inactivity, poor nutrition, smoking, and risky drinking. Because these behaviors are widespread, the delivery of efficacious interventions to prevent or reduce these behaviors could have a significantly positive impact on the health and health care costs. The goal of the analysis presented in the paper was to define the extent to which efficacious interventions exist and to estimate the effect size of the successful interventions. **Methods:** We conducted a systematic literature search for meta-analyses and systematic reviews of trials that tested interventions to increase physical activity, improve nutrition, reduce smoking and exposure to environmental tobacco smoke, and reduce hazardous drinking. **Results:** While many of the trials were not successful, and there are many gaps in knowledge about the determinants of success, the literature suggests that intervention to promote low risk behaviors can produce behavior change. Effective interventions were diverse in nature and included tailored fact-to-face counseling, phone counseling, and computerized tailored feedback. Computer-based health risk assessments are an effective method of determining behavior and assessing participant interest in behavior change interventions. Although the behaviors changes were frequently modest, the observed changes could have a large impact on disease rates if spread across the entire population. **Conclusions:** The positive results in the literature suggest that further investments in improving health promotion interventions are warranted. Widespread implementation of these programs also appears warranted. Because the majority of individuals have some type of health insurance, health plans are vehicles that might be used to promote and deliver the interventions.

P1349

Regression of cardiac lupus under immunosuppressive therapy.

E. Chammas[1], A Hussein[1], A Barbari[1], M Abou Akl[1], O Hamoui[1], L Abouzahr[1]. [1]*CLEMENCEAU MEDICAL CENTER* [2]*CLEMENCEAU MEDICAL CENTER* [3]*CLEMENCEAU MEDICAL CENTER* [4]*CLEMENCEAU MEDICAL CENTER* [5]*CLEMENCEAU MEDICAL CENTER* [6]*CLEMENCEAU MEDICAL CENTER*

A 32 year-old male previously healthy was admitted for evaluation of dyspnea and diagnosed with cardiac tamponade. Over the following days, he developed symptoms that evoked a connective tissue disease. Workup confirmed the diagnosis of systemic lupus erythematosus. Five months later, and while on treatment with an association of Mycophenolic Mofetil (MMF) (2 g/d) and Prednisone (1mg/kg/d), he developed a severe form of cardiac lupus with: severe mitral valve involvement with fibrotic nodules of the posterior mitral leaflet and total immobility of the valve resulting in a severe mitral regurgitation, along with severe pulmonary hypertension, moderate tricuspid regurgitation, mild aortic regurgitation and myocardial dysfunction. Given the progressive cardiac lesions despite MMF therapy, the patient was shifted to a more aggressive immunosuppressive regimen, using intra-venous cyclophosphamide (1 g every month for 6 months) and prednisone was tapered at the rate of 5 mg/month for 2 months then 2.5 mg/month until reaching the dose of 10 mg/day. Follow-up 2 D echocardiography demonstrated the regression of the extent of mitral apparatus involvement after 3 cycles of intra-venous Cyclophosphamide, the total disappearance of the nodules on the posterior leaflet, a significant amelioration in the mitral regurgitation and a marked improvement in left ventricular systolic function that was paralleled by a remarkable clinical improvement allowing the discontinuation of all cardiac medications. This seems to support a novel approach in the treatment of patients with auto-immune diseases by individualizing and tailoring immunosuppressive therapy according to clinical and biological response, in order to optimize outcome. This new strategy seems to be justified by the newly emerging evidence regarding the influence of genetic, ethnic and environmental parameters on disease activity, therapeutic response and clinical outcome.

P1350

Multivessel coronary artery disease patients under medical therapy: A 10 year observational study

E. Chammas[1], C Elbacha[1], R Kyrillos[1]. [1]*CLEMENCEAU MEDICAL CENTER* [2]*CLEMENCEAU MEDICAL CENTER* [3]*CLEMENCEAU MEDICAL CENTER*

Objectives. To evaluate the ten year outcomes of medical treatment for patients with multivessel coronary artery disease, stable angina and no left anterior descendant artery (LAD) involvement. **Background.** Coronary artery bypass grafting (CABG), percutaneous coronary intervention (PCI) and Medical Therapy(MT) are the three modalities for treatment of multivessel coronary artery disease (CAD). However there is no conclusive evidence as to which of these three strategies is superior in relation to long term morbidity and mortality. Studies have indicated that medical treatment alone could constitute an efficient alternative especially when revascularization is not imminent. **Method.** A stratified sample of 30 patients under medical treatment alone was followed for a period of 10 years. Primary end point was defined as cardiac mortality, event free survival and morbidity. **Results.** Survival rates were: 96.7% at 5 years; 94.4% at 7 years; 82.8% at 10 years. The event free survival rate at study end was 40% with the complication rate for angina at 56.6%., acute heart failure 50%, stroke 16.6%, Q-wave myocardial infarction(MI) 13.3 %. Secondary findings showed high significant relationships between ejection fraction(EF), normal electrocardiography(ECG), renal function, Beta blockers(BB) and primary end point. ($p<0.05$) **Conclusions.** Survival rates and event free survival were comparable and in some cases superior to those of other studies. The most common complication was angina (56.6%) followed by acute heart failure (50%). The major predictors of outcomes, were according to this study, ejection fraction, renal function and normal ECG.

P1351

TRADITIONAL RISK FACTORS ARE PREDICTIVE ON SEGMENTAL LOCALIZATION OF CORONARY ARTERY DISEASE

G. Tacoy[1], S Balcioglu[1], S Akinci[1], G Erdem[2], S.A. Kocaman[1], T Timurkaynak[1], A Cengel[1]. [1]*GAZI UNIVERSITY MEDICAL SCHOOL CARDIOLOGY DEPARTMENT* [2]*KIRIKKALE YUKSEK IHTISAS HOSPITAL, CARDIOLOGY DEPARTMENT*

Objective: The purpose of this study is to investigate the relationship between traditional cardiovascular risk factors and segmental localization of coronary artery disease in patients underwent coronary angiography. **Methods:** 2760 patients who admitted to Cardiology outpatient clinic of Gazi University between 2000–2006 for suspected or known coronary artery disease underwent coronary angiography were enrolled into the study. A retrospective analysis was performed. Clinical characteristics (gender, age, hypercholesterolemia, hypertension, diabetes mellitus, smoking, family history for coronary artery disease) were recorded. Coronary angiographic evaluation was performed according to the guideline of American Heart Association in 15 segments (right coronary artery in 4, left anterior descending arter in 6, circumflex arter in 5 segment). Coronary artery segments were classified into 3 groups, (group I : normally coronary artery segments, group II: coronary artery segment with coronary artery disease (CAD) defined as stenoses $<$ 50%, group III: coronary artery segments with coronary artery disease defined as stenoses $\geq$50%). Logistic regression analysis was used to determine the predictive characteristics of cardiovascular risk factors in segmental localization of coronary artery disease. **Results:** Our study population consisted of 1160 patients with normal coronary arteries and 1600 patients with atherosclerosis at least in one coronary artery. HT ($p=0.007$), DM ($p<0.0001$), male gender ($p<0.0001$), age ($p<0.0001$), family history ($p<0.0001$), dyslipidemia ($p<0.001$) were determinants of coronary artery disease. In logistic regression model smoking was highly related with left main coronary artery disease (odds ratio:7.5/ $p=0.005$). DM and male gender increased the risk of atherosclerosis in all coronary vasculature (odds ratio:2.7/ $p<0.0001$ – odds ratio: 2.2 $p<0.0001$). Hypertension was correlated with distal coronary artery lesions (odds ratio::1.4/ $p<0.0001$). Family history was highly related with distal circumflex coronary artery disease (odds ratio: 4.5/ $p=0.005$) and high triglyseride levels had a small increased risk for RCA lesions (odds ratio: 1.00, $p=0.03$). The effect of advanced age was small for all coronary vasculature (odds ratio: 1.08; $p<0.0001$). **Conclusion:** The effect of traditional risk factors on coronary artery disease are not limited with their major role in the pathogenesis. Risk factors may affect localization of coronary artery disease and may be predictive on segmental localization.

P1352

Evolution of no culprit complex coronary lesions

R. Costantini[1], J. Telayna[1], F. Graziano. [1]*Hospital Universitario Austral*

Introduction: in the diffuse nature of coronary atherosclerosis, plaque instability might be expected to develop in a multifocal pattern, resulting in multiple complex, unstable plaques in anatomically remote locations; any one of these lesions might progress to total occlusions of a vessel and emerge as the cause of an acute coronary syndrome (ACS). There is little data available on the natural history of these lesions. It is assumed that severity or complexity of non-culprit complex lesions might be changed with the time in accordance with their different clinical outcomes for the pharmacology treatment. **Objective:** determine the evolution of novo non-culprit complex lesion define as if they caused at least 50% stenosis and had 2 or more of the following morphological features: a) ulceration, b) irregularities or creaneted edges, c) sharp stenosis angulation in the wall, d) endoluminal defects compatible with thrombus, e) long lesions $>$ 25mm, o f) true or type I bifurcations vs novo non-culprit lesion no complex in patients underwent interventions percutaneous (PCI) of another vessel for ACS. **Methods and materials:** since May 2000 to September 2007, in 115 patients (pts) with PCI in a mayor coronary vessel for a culprit lesion in a different territory, was tested in 44 pts non-culprit complex lesion (Group A) vs. 71 pts non-culprit no complex lesion no revascularized in the index procedure. The population presented, respectively: female 8(18%) vs. 14(20%); diabetes 8(18%) vs. 13(18%); three vessels diseases 15(34%) vs. 23(32%); ACS ST 20(45%) vs. 35(49%); ACS Non ST 24(54%) vs. 36(51%) and use of IIbIIIa 19(43%) vs. 19(27%). The clinical success was (technical success without MACE intrahospital) en 42(95%) vs. 67(94 %). In the follow up was necessary a new revascularization procedures for angina or ischemia guided in 13/42 (31%) group A vs 7/67 (10%) group B in a average time of 2.8 month (p 0.01). The revascularization was for PCI in 10(24%) / 6(9%) and by-pass 3(7%) / 1(1.5%), group A and B, respectively. **Conclusions:** the patient who needs more revascularizations were those who had a non-culprit complex lesions in another territory different of culprit lesion. The presents observations identifies a subgroup of patiens at increased risk de ischemia recurrent y new revascularizations.

P1353

A Simple Echocardiographic Method for Left Ventricular Ejection Fraction Calculation Specially Useful in Patients with Prior Myocardial Infarction

G. Liniado[1], J. Gagliardi[2], S. Schneck[3], S. Molteni[4]. [1]*DESARROLLO E INVESTIGACIÓN EN CARDIOLOGÍA* [2]*DESARROLLO E INVESTIGACIÓN EN CARDIOLOGÍA* [3]*GAMMA SPECT* [4]*GAMMA SPECT*

Objectives: The purpose of this study was to evaluate a new formula for the calculation of left ventricular ejection fraction by two-dimensional and Doppler echocardiography (EchoEF) and compare it with radionuclide ventriculography (RVG) **Background:** The commonly used method to calculate ejection fraction by echocardiography is influenced by distortion of left ventricular geometry and the difficulties to define the entire endocardial interface. This new method would be less influenced by the distortions of left ventricular geometry caused by prior myocardial infarction. **Methods:** 51 consecutive unselected patients (p) were included (22 women, mean age 66 $\pm$ 10 years old). Reasons for the evaluation were: coronary artery disease: 36 p; chemotherapy: 8 p; dilated cardiomyopathy: 5 p and valve disease 2 p. Patients with mitral or aortic insufficiency where excluded. Two echocardiographic formulas where used: the Biplane Area-Length method (apical two and four chamber views) (EcoEF1), and the new one (EcoEF2) that emerge from the quotient between the systolic volume (calculated from the product of the velocity time integral and the area of the left ventricular outflow tract) and the end diastolic volume calculated by the Biplane Area-Length method. Both RVG and EchoEF were prospective and blind measured. **Results:** Correlation coefficients where calculated between both echo methods and RVG in all the population (Table 1) and in patients with (23 p) and without regional asynergy (Table 2). **Conclusions:** Both echocardiographic methods showed good correlation coefficients with RVG for ejection fraction calculation. In patients with regional asynergy the new formula had a better correlation with RVG.

TABLE 1

	Media	Correlation Coefficient r with RVG	p value
EchoEF1 (%)	51 +/- 12	0.78	0.0001
EchoEF2 (%)	59 +/- 28	0.72	0.0001
RVG	50 +/- 13	-	-

TABLE 2

	Without regional asynergy n=28	Without regional asynergy n=28	Without regional asynergy n=28	With regional asynergy n=23	With regional asynergy n=23	With regional asynergy n=23
	Media	r	p	Media	r	p
EcoEF1(%)	58 +/- 10	0.73	0.0001	44 +/- 10	0.55	0.008
EcoEF2(%)	74 +/- 28	0.52	0.006	42 +/- 16	0.75	0.0001
RVG	58 +/- 10	-	-	41 +/- 10	-	-

P1354

SUBACCUTE EFFECTS OF MAXIMAL EXERCISE ON ENDOTHELIAL FUNCTION IN PATIENTS WITH CHRONIC HEART FAILURE

P. Moreira[1], P. Soares[1], F. Das Neves[1], N. Rocha[1], A. Nobrega[1]. [1]*FLUMINENSE FEDERAL UNIVERSITY*

Introduction: Endothelial dysfunction is one of many cardiovascular manifestations in chronic heart failure (CHF) patients with prognostic value. Exercise training is known to improve endothelial function in healthy and CHF. However, the effects of a single bout of exercise on endothelial function in CHF were not extensively investigated. The aim of the present study was to evaluate peripheral blood flow and vascular reactivity in CHF subjects before and after a maximal bout of exercise. **Methods:** CHF patients (6M/2F, NYHA: I, II and III) under standard pharmacological treatment were compared to sex, age, body mass index paired control subjects (CTR, 4M/8F) without cardiovascular or metabolic disease. Both groups underwent a cardiopulmonary ramp test on a treadmill to exhaustion. Forearm blood flow (FBF) was attained by venous occlusion plethysmography (EC6, DE, Hokanson Inc., USA) in supine position before (PRE), immediately (POST) and 60 minutes (POST60) after maximal exercise. FBF was measured also after 5 minutes blood flow occlusion to provoke reactive hyperemia (RH). RH was defined as the blood flow excess calculated as the difference between basal and peak FBF after ischemia. A two-way analysis of variance for repeated measures was used to identify differences between groups and the effect of exercise on variables. An arbitrary value of $P<0.05$ was set for statistical significance. **Results:** Maximal oxygen consumption was higher in CTR than in CHF subjects ($P<0.01$, 32.34$\pm$7.69 vs. 17.74$\pm$ 6.37 mL.kg-1.min-1, respectively). After exercise basal FBF increased in CTR (PRE: 3.02 $\pm$1.42 vs. POST: 5.06$\pm$3.00 mL.min-1.100mg of tissue-1, $P<0.01$) but not in CHF (PRE: 1.27$\pm$0.33 vs. 1.67$\pm$0.54 mL.min-1.100mg of tissue-1, $P>0.05$). RH was increased in CTR (PRE: 25.19$\pm$11.07 vs. POST: 33.36$\pm$12.95 mL.min-1.100mg of tissue-1, $P<0.05$) but was not modified in CHF (PRE: 13.96$\pm$6.59 vs. POST: 13.04$\pm$6.14 mL.min-1.100mg of tissue-1, $P>0.05$). In the POST60 period there were no differences in both groups in relation to PRE values. **Discussion and**

conclusion: Our data support the concept that endothelial function is impaired in CHF. In addition, this phenomenon is highlighted when exercise was applied evidencing the blunted capacity of CHF to respond to a physiological challenge. The reduced vascular responses after exercise in CHF might be of clinical importance and should be investigated in these patients.

P1355

Predictors of left ventricular remodeling in patients after successful primary percutaneous coronary intervention for acute myocardial infarction: Long term follow-up

I. Nedeljkovic[1], B. Vujisic-Tesic[1], M. Ostojic[1], M. Petrovic[1], B. Beleslin[1], O. Petrovic[1], D. Zamaklar-Trifunovic[1], A. Djordjevic-Dikic[1], V. Giga[1], J. Stepanovic[1]. [1]*University Institute for CVD, Belgrade, CCS* [2]*University Institute for CVD, Belgrade, CCS* [3]*University Institute for CVD, Belgrade, CCS* [4]*University Institute for CVD, Belgrade, CCS* [5]*University Institute for CVD, Belgrade, CCS* [6]*University Institute for CVD, Belgrade, CCS* [7]*University Institute for CVD, Belgrade, CCS* [8]*University Institute for CVD, Belgrade, CCS* [9]*University Institute for CVD, Belgrade, CCS* [10]*University Institute for CVD, Belgrade, CCS*

Background: Unssuccesful percutaneous coronary interventions (PCI) for acute myocardial infarction (AMI) may lead to change in left ventricular (LV) shape and worsening of LV function. However, predictors of poor LV outcome have not yet been determined. **Objective:** To define significant predictors of LV remodeling in pts 6 months after successful primary PCI for AMI. **Methods:** We studied 106 pts (80 male, 26 female; mean age 56±14 years), who all underwent primary PCI for AMI. There were 43 pts with and 63 pts with multivessel coronary artery disease (CAD). Echocardiographic examination has been performed before PCI, 3 and 6 months after succsessful primary PCI.. We assessed predictive value of LV sphericity index (LVSI) as a measure of change of LV shape. **Results:** During 6 months follow up 43 pts had cardiac events, though there were no cardiac death. Of them 27 pts had the signs of LV remodeling. The most important univariate predictors for LV remodeling and congestive heart failure were: Killip class on admission (p=0.0056), WMSI (p=0.0006), LV end-diastolic (LVEDD; p=0.0012), LV end-systolic dimension (LVESD; p=0.003), LV end diastolic volume index (EDVI; p=0.0018), and LV ejection fraction (LVEF; p=0.01) measured before before PCI and LVSI (p=0.0002), WMSI (p=0.0003), LVEDD (p=0.0005), EDVI (p=0.0005), LVEF (p=0.0006), LVESD (p=0.0018) and mitral regurgitation severity (p=0.04) measured 3 months after primary PCI. However, significant multivariate predictors of LV remodeling were LVSI (p=0.0061) and EDVI (p=0.017) measured 3 months after successful primary PCI. **Conclusion:** Higher values of LV sphericity index and EDVI measured 3 months after successful primary PCI for AMI are independent predictors of LV remodeling and poor LV function during long-term follow up period.

P1356

Prediction of acute coronary events by myocardial jeopardy score: Five years follow-up patients with natural progression of coronary artery disease

I. Nedeljkovic[1], M. Ostojic[1], B. Beleslin[1], A. Djordjevic-Dikic[1], V. Giga[1], J. Stepanovic[1], M. Nedeljkovic[1], S. Stojkovic[1], P. Mitrovic[1], B. Vujisic-Tesic[1]. [1]*University Institute for CVD, Belgrade, CCS* [2]*University Institute for CVD, Belgrade, CCS* [3]*University Institute for CVD, Belgrade, CCS* [4]*University Institute for CVD, Belgrade, CCS* [5]*University Institute for CVD, Belgrade, CCS* [6]*University Institute for CVD, Belgrade, CCS* [7]*University Institute for CVD, Belgrade, CCS* [8]*University Institute for CVD, Belgrade, CCS* [9]*University Institute for CVD, Belgrade, CCS* [10]*University Institute for CVD, Belgrade, CCS*

Background: Myocardial jeopardy was shown to be the best predictor of outcome of patients during revascularization procedures, but its relationship with acute coronary adverse events during long-term follow up period, is still unknown. **Objective:** To determine the role of myocardial jeopardy score (MJS) in prediction of acute coronary events (non fatal myocardial infarction and unstable angina pectoris), in patients with natural progression of coronary artery disease (CAD) who did not undergo revascularization procedures. **Methods:** We evaluate 88 pts with CAD (73 single vessel, 15 multi vessel), who underwent exercise stress echo test (Ex: maximal Bruce) and who did not undergo revascularization procedure. MJS was calculated as a product of: (1) myocardial segmental kinetic status in a region of significantly stenosed vessel (scored from 1 to 4), (2) percent diameter stenosis (%DS≥ 50%, scored from 1 to 5), and (3) weighting flow factor for particular localization of lesion. **Results:** Follow up period was 46±22 months. Significant univariate predictors of acute coronary events were: MJS, positive Ex and %DS. In multivariate Cox regressional analysis, the only independant predictor of coronary events was MJS (p=0.0004). According to ROC curve, value of MJS the best predictive for adverse events was 48.75, and Kaplan-Meier cumulative event free survival analysis showed significantly worse outcomne of pts with MJS ≤48.75 in comparison to pts with higher MJS. **Conclusion:** Patients with lower MJS are in a high risk of acute coronary events in patients with natural progression of coronary artery disease, in the presence of higher amount of potentially ischemic myocardium and moderate coronary artery stenosis. This confirms the need for integrated evaluation of functional significance of coronary artery disease.

P1357

Infectious agents, MMP-9 and PPAR alpha are increased in the adventitia and periadventital fat of aortic aneurysms

A. Roggerio[1], M.L. Higuchi[1], N.V. Sambiase[1], N. Stolf[1]. [1]*Heart Institute of University of Sao Paulo Medical School*

Background: Aortic Atherosclerotic Aneurysms are usually associated with atherosclerosis, attenuation of the medial layer and adventitial inflammation. Increased expression of Metalloproteinases (MMPs) was described in aneurysms. Peroxissome proliferator activated receptors (PPARs) have immunomodulatory effects on atherosclerotic lesions. Previous studies from our laboratory have found that coinfection by Chlamydophila pneumoniae (CP) and Mycoplasma pneumoniae (MP) in the adventitia of coronary arteries is related to vulnerable lesions characterized by plaque rupture, adventitial inflammation and positive vessel remodeling, characteristics also present in the aneurysms. **Objectives:** The purpose of this study is to determine if aortic aneurysms have similar characteristics of vulnerable atherosclerotic lesions of regarding antigens from CP, MP, and expression level of MMP-9 and PPARs. **Methods:** Two groups of severe atherosclerotic aorta fragments were studied: G1 (n=14) without aneurysms obtained from necropsies and G2 (n=14) with aneurysm, obtained during surgical correction. Histological cross sections of the paraffin embedded fragments were quantitative evaluated regarding thickness of vascular layers, and % positive area for PPAR alpha and gamma, MMP-9, CP and MP antigens detected by immunohistochemistry. For statistical analysis the t test or Mann-Withney was used. **Results:** Significant differences between G1 and G2 were observed only in periadventitial fat (PAT) and adventitial layer: MMP-9, PPAR alpha and quantity of CP and MP were increased in G2 (table 1). MMP-9 and PPAR gamma correlated with CP in G1 and G2, while MP correlated with PPAR alpha, PPAR gamma, only in G2. **Conclusion:** The results favor the concept that aortic aneurysms represent a vulnerable atherosclerotic lesion in aorta, presenting adventitial and periadventitial fat inflammation in association with increased levels of CP and MP infectious agents, MMP-9 and PPAR alpha. These findings re-inforce the theory of infectious participation in the development of atherosclerotic complications.

TABLE 1 – COMPARISON OF CP, MP, PPARS AND MMP-9 ANTIGENS IN THE ADVENTITIA AND PERIADVENTITIAL FAT BETWEEN GROUPS G1 AND G2

	PAT G1	PAT G2	p	ADV G1	ADV G2	p
MMP-9	0,74 ± 0,84	1,70 ± 1,23	**p=0,04**	0,17 ± 1,6	2,10 ± 1,87	p=0,15
PPAR alpha	0,59 ± 0,39	2,00 ± 1,05	**p<0,001**	0,91 ± 0,58	3,41 ± 2,06	**p<0,001**
PPAR gamma	0,54 ±0,59	0,75 ± 0,99	p=0,80	0,41 ± 0,50	1,47 ± 3,01	p=0,76
CP	0,72 ± 0,98	0,80 ± 1,53	**p=0,02**	0,54 ± 0,52	2,63 ± 3,70	**p=0,002**
MP	1,26 ± 0,65	5,75 ± 4,62	**p<0,001**	2,13 ± 1,49	6,41 ± 5,26	**p=0,02**

PAT: Periadventitial fat ADV: adventitia layer

P1358

Sleep-Disordered Breathing: Relation of treatment compliance and the occurrence of cardiovascular disease in severe obstructive sleep apnea patients.

J. Santos[1], B Gonzales[1], J Caneva[1], J Oses[1], R Boughen[1], F Robles[1], E Gabe[1]. [1]*FAVALORO FOUNDATION*

Background: Obstructive sleep apnea (OSA) constitutes a major public health problem because of its high prevalence. A know association between sleep apnea and cardiovascular disease exists, particularly in OSA and hypertension. For other cardiovascular diseases, the evidence, although suggestive, remains circumstantial. **Objetives:** We wanted to observe in severe OSA patients, the relation between the treatment compliance (medical treatment, use of continuous positive airway pressure (CPAP) and weight lost), and the occurrence of cardiovascular diseases (hypertension, ischemic heart disease,heart failure, stroke, cardiac arrhythmias, pulmonary hypertension), and mortality. **Methods:** A total of 62 patients with severe OSA were prospectively enrolled in this study from January, 2000 to Novemeber, 2005. Participants were assessed overnight by 18-channel polysomnography for sleep-disordered breathing, as defined by the apnea–hypopnea index (the number of episodes of apnea and hypopnea per hour of sleep). **Definitions:** We considered severe OSA with an apnea–hypopnea index = 30 or more events per hour. Follow-up was performed by phone, asking about medical treatment, adherence to CPAP indication, body weight fluctuation, evolution, cardiovascular syntomatic conditions, appearance of new cardiovascular disease and long-term survival. **Results:** Demographics. The mean age was 57 + 17 years, 88 % men. Body mass-index: mean 33+ 7 Cardiovascular risk factors: 38 p (65,5%) were hypertension, 37 p (64%) dyslipemia, 10 p (17%) diabetes, 14 p (24%) cigarette smoker. Cardiovascular diseases: 14 p (24%) were coronary disease, 13 ptes (23%) arrhythmias, 5 ptes (8,6%) cardiac failure and 3 ptes (3,5%) stroke. Other diseases: 4 patients (6.8%) had neoplasic disease (1 colon, 1 breast, 2 pulmonary) The mean long term follow up was 32 months (1–62). Two patients were lost to follow up. All the patients had CPAP indication, but only 8 p (14%) were able to use it. Four patients that had cardiovascular disease (1 with cardiac failure, 1 atrial fibrillation, and 2 with hypertension), and were able to lose of weight, improved significantly and were asymptomatic. Seven patients developed new hypertension, 1 cardiac failure, and 2 atrial fibrillation. There were four death (7%) during the follow-up: 1 sudden death, 1 stroke, 1 pulmonary cancer, and 1 sepsis. **Conclusions:** In a long- term follow –up, severe OSA patients did not comply well to treatment with CPAP or focus on weight loss. We found a relation between treatment compliance and the occurrence of cardiovascular disease: the patients that complied well to the treatment, improved significantly and were asymptomatic. The patients did not comply well treatment, developed new hypertension, cardiac failure, stroke, and AF.

P1359

Costs and effects: Three-years follow-up of the InCor valve replacements surgeries

E. Trindade[1], P. Pomerantzeff[1], M. Grinberg[1], C.M. Brandã,o[1], S. Fujii[1]. [1]*Heart Institute of the Sã,o Paulo University Medical School* [2]*Heart Institute of the Sã,o Paulo University Medical School* [3]*Heart Institute of the Sã,o Paulo University Medical School* [4]*Heart Institute of the Sã,o Paulo University Medical School* [5]*Heart Institute of the Sã,o Paulo University Medical School*

Health technology assessment program and the Valve Surgical Division of the Heart Institute – São PauloUniversity Medical School [InCor-HC/FMUSP]. Mechanical valves and bioprostheses

are the commonly used devices in valve replacement (VR). Lack of benchmark outcomes research for health care system planning and valve surgeries cost-effectiveness studies in Brazil has motivated this Health Ministry request. **Objective:** to estimate clinical events rates and event-free survival and to ascertain risk factors and costs of valve-related events. **Methods:** Prospective cohort of consecutive cases requiring valve replacement at the InCor-HC/FMUSP during 2004. Routine ambulatory visits are scheduled monthly at the first semester and annually thereafter. Free call center disk line was implemented and all required services are made available for the patients and paid by the Public Health Care System, SUS. Costs are calculated by micro-costs building through the sum & product of time and movement studies to estimate procedure and tests unit costs, materials acquisition and all other resources used real unit costs. Physician fees are not included. **Results:** Biological prostheses were implanted in 359 patients, while 87 patients underwent mechanical implants, with an average 55 "b 15.6 and 50 "b 12.6 years of age. Initial hospital admission all causes mortality was 11% and 14% and costs for replacements were US$ $11 708.24 (CI 95% $10 599.17 $12 817.31) and $12 126.34 (CI 95% $10 852.89 to $13 399.78) until discharge. The low number of re-replacements, eleven of the bioprostheses and one mechanical, US$ $22 595.74 (CI 95% $9 250.98 to $35 940.50) and $ 10 874.48, respectively required after an average of 26,5 and 13,2 months post-first replacement. Re-replacement main motive was due to late endocarditis in 5 bioprosthesis, 3 with paravalvar leaks, 1 with stenosis and 2 with insufficiency. The mechanical valve required to be replaced also due to insufficiency. Re-operation costs calculations only minimally influenced the yearly follow-up costs. Follow-up ambulatory visits and required complementary tests, added with the re-operation costs for the 11 new bioprostheses and the new mechanical one, respectively, amounting to US$ 1 480.61 and $ 1 394.66. **Conclusion:** Although bioprosthesis were implanted in sicker or more uneducated patients, where anticoagulation was less feasible, the absolute risk difference – of at least one valve-related re-operation event - was non statistically significant – reduced by 1.9% with the use of mechanical implants over the three year follow-up. Costs and effects are show to be similar for hospital admission and the first three year of follow-up. The longer-term follow-up study is warranted.

P1360

Echocardiographic Characteritics and Surgical Outcome of Mitral Valve Disease In Marfan Syndrome

JM Casas[1], CE Lopez, M Segura, JH Casabe, P Roura, H Raffaelli, J Abud, E Dulbecco.
[1]*Favaloro Foundation* [2]*Favaloro Foundation* [3]*Favaloro Foundation* [4]*Favaloro Foundation*
[5]*Favaloro Foundation* [6]*Favaloro Foundation* [7]*Favaloro Foundation* [8]*Favaloro Foundation*

Casas J, Lopez C, Casabé JH, Segura M, Roura P, Raffaelli H, Abud J, Dulbecco E, Favaloro RR ICYCC Favaloro Foundation, Buenos Aires, Argentina **Background** Mitral Valve Disease in patients with Marfan Síndrome is not well characterized. **Objective** The aim of the study was to analyze echocardiographic characteristics and surgical outcome of MVD in a group of patients with MS. **Methods** This was a restrospective analysis of patients with MS according to Ghent Criteria and with satisfactory 2D echocardiogram and Doppler records that were seen at our Institution between 6/1992 and June 2006. **Results** From 119 patients, 95 patients had cardiovascular disease, 45 with MVD were selected.The mean age was (28 range = 12 to 57), and 60 % were women.All of them have mitral valve prolapse, alone in 12 patients (26,6%) and together with aortic root disease in the remaining 33 patients (73,3%).In 25 patients (55,5%) mitral valve disease was due to bileatflet prolapse, in 15 patients(33,3%) to anterior leaflet prolapse alone and only in 5 patients(11%) to posterior leaflet prolapse. Mean end diastolic left ventricle diameter was 49,6 mm (range= 33–71mm) and mean Left Ventricle Ejection Fraction was 63,6% (range=25–72%).Seven patients (15.5%) had severe mitral regurgitation ; in the remaining patients the mitral regurgitation was mild or mild to moderate.Twelve patients(26,65 %) required surgery : 3 of them due to symptomatic severe mitral regurgitation and in 9 patients due to concomitant aortic root surgery. In 3 patients (25%) mitral valve repair was succesfully done and 9 patients required mitral valve prostheses.There were no hospital deaths. **Conclusions** MVD in patients with MS was mainly due to bileaflet prolapse and frequently associated with aortic root disease. The proportion of mitral valve repair was low.

P1361

SEVERE RHEUMATIC TRICUSPID REGURGITATION SEVERAL YEARS AFTER MITRAL VALVE REPLACEMENT OR REPAIR

H. Silva[1], A. Bartolomé[1], V. Picone[1], C.A. Bruno[1]. [1]*Cardiac Surgery Department - Hospital Argerich - CABA - Argentina*

From a total of 368 patients with valvular heart disease referred to the Cardiac Surgery Department from January 2000 to December 2005, 4 cases were detected with severe tricuspid regurgitation (TR) without pulmonary hypertension (PHT) and normal right ventricular (RV) function several years after the correction of a mitral valve lesion (1.1%). **Objective:** To present 4 consecutive cases referred to our hospital with this unusual condition for the correction of their TR. **Methods:** 4 female patients, aged 60±4 years (mean±SD). They had all been operated on previously to correct their rheumatic mitral valve disease (1 patient with 1 procedure 20 years ago; 3 patients with 2 procedures with last procedure at least 5 to 7 years ago). All of them exhibited PHT at the time of the last mitral valve procedure, with mild TR. PHT returned to normal values after the last procedure in all 4 patients. Three patients were implanted a mechanic valve prosthesis (with normal prosthetic function), and one underwent an open mitral commisurotomy presenting now with mild mitral regurgitation. Currently, three patients presented with normal pulmonary pressures and one with mild PHT (38 mmHg). RV function, as assessed by echocardiography was normal. All of them had severe impairment of their functional capacity (NYHA III/IV), even under aggressive diuretic therapy (loop diuretics or spironolactone). Functional impairment was objectively measured by a VO2 stress test. VO2max was in the range of 8–12 mL/kg/min (mean 10.2) representing 60% of the maximum expected value. **Results:** Two patients underwent tricuspid annuloplasty (de Vega modified) and evolved uneventfully. The other two patients are still on a waiting list for tricuspid repair. **Conclusions:** We present 4 cases of an unusual evolution of rheumatic valve disease, which is the development of primary TR due to rheumatic involvement of the tricuspid valve. This disease presents with severe impairment of functional capacity and may be easily solved with tricuspid annuloplasty.

P1362

EMERGENCY DEPARTMENT PREDICTORS OF MORTALITY AND AORTIC INTERVENTION AMONG PATIENTS WITH SYMPTOMATIC ABDOMINAL AORTIC ANEURYSM

M. P. Marturano[1], G. Procopio[1], R. Merbilháa[1], G.A. Ontiveros[1], E. Dulbecco[1], F. Klein[1], M.J. Fosco[1]. [1]*Instituto de Cardiología y Cirugía Cardiovascular - Fundación Favaloro*

Objectives. To evaluate Emergency Department (ED) predictors of in-hospital mortality and aortic intervention among patients admitted for symptomatic abdominal aortic aneurysm (AAA). **Methods.** Retrospective cohort study which included patients consecutively admitted for symptomatic AAA between January 2000 and December 2004. Primary end point was in-hospital mortality. Secondary end point was in-hospital mortality or aortic intervention (surgery or endoprothesis). Categorical variables were expressed by percentages and 95 % confidence interval (95 CI) and compared with Chi Square (Yates' correction) or Fisher Exact Test. Continuous variables were expressed by medians and interquartile range (IR) and compared with Wilcoxon Rank Sum Test. Variables compared were age, sex, medical antecedents, symptoms, and physical exam, electrocardiogram (ECG), biochemical analysis and complementary images findings. Significant different variables were introduced into stepwise logistic regression analysis to evaluate independent predictors of primary and secondary end points and calculate respective odd ratio (OR) with 95 CI. In the first case, in-hospital aortic intervention was forced into the multivariate model. A $p < 0.05$ was considered to be statistically significant. **Results.** Study included 88 p, age 72.5 (67.3 – 77.0) years, female sex 6.8 % (1.5 – 12.2). Aneurysm involved descendent thoracic aortic in 6.8 % (1.5 – 12.2) of patients. Twenty patients [22.7 % (13.8 – 31.7)] died, 54 patients [61.4 % (51 – 71.7)] received an aortic intervention (surgery in 52 patients and endoprothesis in 2 patients), and 60 patients [68.2 % (58.3 – 78.1)] died or received an aortic intervention. Variables which independently predicted in-hospital mortality were: leukocyte blood count [OR 1.34 (1.12 – 1.61) for each increase of 1 x 103 / mm3] (p 0.0001) and aortic mural thrombus in complementary images [OR 0.09 (0.01 – 0.52)] (p 0.0013). Variables which independently predicted in-hospital mortality or aortic intervention were: age [OR 0.89 (0.80 – 0.98) for each increase of one year] (p 0.0009), transitory loss of conscience previous to ED admission [OR 14.6 (1.4 – 156.2)] (p 0.0065), and aortic transversal diameter [OR 1.1 (1 – 1.1) for each increase of 1 mm] (p 0.0184). **Conclusions.** Increasing leukocyte blood count on ED predicted in-hospital mortality among patients with symptomatic AAA. The presence of aortic mural thrombus in complementary images at the ED was a negative predictor of in-hospital mortality among these patients. Both variables predicted mortality, whereas or not an aortic intervention was implemented during hospitalization. On the other hand, increasing age was a negative predictor of mortality or aortic intervention, while (pre)syncope and increasing aortic transversal diameter were positive predictors of the secondary end point.

P1363

CARDIOPULMONARY (VO2) EXERCISE TEST IN PATIENTS WITH ASYMPTOMATIC AND SYMPTOMATIC SEVERE AORTIC STENOSIS

H. Silva[1], J. Ale[2], C.A. Bruno[2], A. Bartolomé[1], V. Picone[1]. [1]*Cardiac Surgery Department - Hospital Argerich - CABA - Argentina* [2]*Centro Cardiológico Billinghurst - CABA - Argentina*

Background: Symptomatic severe aortic stenosis (AS) is a counterindication for exercise test. However, symptoms may not be clear enough in some cases and cannot be definitely interpreted as secondary to their aortic stenosis. In order to further evaluate functional capacity in patients with severe AS we decided to use a cardiopulmonary (CPET) exercise test. **Objectives:** To present the results of the first 43 VO2 exercise tests performed in this high risk population, differentiating symptomatic from asymptomatic patients as assessed by CPET. **Methods:** From a surgical waiting list of approximately 800 patients, a CPET with respiratory variables measurement was carried out in 43 patients (22 female, age 66 ± 6 years). Patients were divided in asymptomatic (group A) and symptomatic (group B) according to the results of the CPET. **Results:** From the 43 tests performed, 26 were stopped due to the development of dyspnea, while 3 patients presented angina. One study was stopped due to a VT run (5 beats). 13 patients were asymptomatic at the maximum load achieved. No complications were observed in this population. Following are the results of the variables measured in both subgroups (group A vs. group B). - Work load (Watts) (mean): 65.30 vs. 66.63 (NS) - Work load (METS) (mean): 5.04 vs. 3.56 (p 0.03) - VO2max (mean±SD): 18.36±2 ml/kg/min vs. 12.46±2 (p 0.01) - % of predicted VO2max (mean±SD): 78.8±11 vs. 64.73±13 (p 0.01) - Anaerobic Threshold (mean±SD): 8.2±1 ml/kg/min vs. 10.54±1 ml/kg/min (NS) - VE/VCO2 Max (mean±SD): 36.69±7 vs. 35.41±5 (NS) **Conclusions:** In this high-risk population, the CPET helped to differentiate symptomatic from asymptomatic patients. Symptomatic patients exhibited a significant reduction in their exercise tolerance. The tests were safely performed and no complications were found.

P1365

LONG-TERM OUTCOME IN PATIENTS WITH SYMPTOMATIC SEVERE AORTIC STENOSIS

H. Silva[1], A. Bartolomé[1], S. Belforte[1], V. Picone[1], C.A. Bruno[1]. [1]*Cardiac Surgery Department - Hospital Argerich - CABA - Argentina*

Background: Data available about the long-term outcome of symptomatic severe aortic stenosis (AS) are based mainly on data from the 1950's, when the ethiology was mainly rheumatic valve disease. Long-term data from more recent series are scarce. **Objetives:** To assess the current mortality rate in the natural history of patients with symptomatic severe aortic stenosis. **Methods:** A total of 169 patients (51% male, age 64 years [mean]) were referred to our Cardiac Surgery Department and, for different reasons, could not be operated on immediately after being received in our hospital for surgical treatment. Patients were followed for a mean of 15.4 months (range: 11 days - 72 months). Follow-up was performed until (1) death (11.8%, mean follow-up 12.4 months); (2) until aortic valve replacement could be performed (27.8%, mean follow-up 13.8 months); or (3) until last phone contact (46%, mean follow-up 19.5 months). Functional capacity, duration of symptoms, survival, and actuarial mortality were assessed. **Results:** Actuarial all-cause mortality rate in our population was 9.2%, 14.5%, 22.6%, and 30.7% at 1, 2, 3 and 4 years, respectively. After the 4th year, actuarial mortality rate remained stable. Functional capacity and duration of symptoms had no correlation with death. **Conclusions:** All-cause mortality rate remains high in this high-risk population. Interestingly, we found no relationship between mortality and functional capacity or duration of symptoms. A longer follow-up evaluation is currently being performed.

P1366

THE EFFECT OF BODY MASS INDEX ON BLOOD PRESSURE RESPONSE DURING EXERCISE

G. E. Yazici[1], G Tacoy[2], B Alibazoglu[3]. [1]*KIRIKKALE YUKSEK IHTISAS HOSPITAL CARDIOLOGY DEPARTMENT* [2]*GAZI UNIVERSITY MEDICAL SCHOOL CARDIOLOGY DEPARTMENT* [3]*CARDIOCHECK, ANKARA*

Background: Obesity is known to be associated with cardiac structural alteration and volume overload. Therefore cardiovascular response to exercise may impair in obese subjects. We aimed in this retrospective study to evaluate the blood pressure response to exercise between people who have different body mass index (BMI). **Material - Method:** Patients who were referred for myocardial perfusion scintigraphy to our center between 2006 April and May were selected for this study. All subjects had normal cardiac physical examination findings. The inclusion criteria were: (1) no antihypertensive drugs before exercise test (2) no history and laboratory findings of ischemic heart disease, congestive heart failure. 168 of them who had normal myocardial perfusion scintigraphy and walked at least 6 minutes during treadmill test were enrolled into the study and they were divided into 3 groups according to BMI: under 25 (normal-group 1), between 25–29 (over weight, group 2), between $\geq$ 30 (obese and morbid obese(group 3). At the 1st, 3rd and 6th minutes measurements of the systolic (SBD) and diastolic (DBP) blood pressure during the treadmill test that were arranged according to the Bruce protocol, recordings and baseline characteristics were scanned from our database program. **Results:** : Both SBP and DBP of all groups showed significant increase with exercise ($p<0,01$). Subjects with highest BMI had highest SBP and DBP. When SBP and DBP average values at the 1st, 3rd and 6th minutes were taken into consideration, the difference among 3 groups were found to be significant except the 6th minute DBP values ($p<0001$). The average percentages of SBP and diastolic change at 3rd minute with regard to 1st minute weren't different statistically ($p=0,454$ and $p=0,196$ respectively).The average percentages of SBP increase at 6th minute with regard to beginning weren't different also ($p= 0,109$). **Conclusion:** Absence of this difference for obese people, implies that obesity didn't disturb the physiological response to the exercise. The baseline high blood pressure of the obese people showed similar increase with respect to the normal weighed people.

P1367

TIMI FRAME COUNT AND MYOCARDIAL BLUSH GRADE IN NORMAL CORONARY ARTERIES OF PATIENTS

G. Tacoy[1], G.E. Yazici[2], S.A. Kocaman[1], M Ozdemir[1], A Cengel[1]. [1]*GAZI UNIVERSITY MEDICAL SCHOOL CARDIOLOGY DEPARTMENT* [2]*KIRIKKALE YUKSEK IHTISAS HOSPITAL CARDIOLOGY DEPARTMENT*

Background: To investigate TIMI frame count and TMBG parameters of normal coronary arteries in patients with stable coronary artery disease. **Methods:** Ninety patients who underwent coronary angiographic evaluation for typical chest pain enrolled into this study. Fifty patients who have one normal coronary artery in the setting of stable coronary artery disease (CAD) defined as stenoses 50% or greater in two major coronary arteries as group I and forty patients with normal coronary arteries as group II were enrolled. The clinical characteristics and laboratory findings were recorded. Coronary blood flow and microvascular perfusion were evaluated by use of TFC and TMBG parameters. **Results:** Age, HT, smoking, gender, DM, and T.Cholesterol levels were found to be statistically different between two groups. In group I, CTFC and TMBG of LAD in 16 patients, TFC and TMBG of CX in 21 patient, TFC and TMBG of RCA in 13 patients were evaluated. In group I CTFC was significantly higher than those group II (29.00 ± 11.64, 36.81 ± 11.77 frames, $p=0.033$) and after adjustment of the risk factors by multivariate regression analyses the association between age and increased CTFC was statistically significant. CX and RCA frame counts and TMBG parameters were similar between two groups. (18.02 ± 9.31, 21.61 ± 7.45 frames, $p>0.05$–16.63 ± 7.59, 16.38 ± 9.59 frames, $p>0.05$). **Conclusion:** Coronary blood flow in normal LAD decreased in the setting of stable coronary artery disease in RCA and CX. This situation may be explained due to the global effact of atherosclerosis in coronary vasculature.

14676

Assessment of cardiotoxicity of imatinib mesylate in chronic myeloid leukemia patients - a cross-sectional study

M. S. Marcolino[1], H.N.S. Bittencourt[1], N.C.D. Clementino[1], M.M. Barbosa[1], M.C.P. Nunes[1], V.F. Xavier[1], A.L.P. Ribeiro[1]., [1]*UNIVERSIDADE FEDERAL DE MINAS GERAIS*

ASSESSMENT OF CARDIOTOXICITY OF IMATINIB MESYLATE IN CHRONIC MYELOID LEUKEMIA PATIENTS - A CROSS-SECTIONAL STUDY Imatinib Mesylate (IM), a tyrosine kinase inhibitor, has become the first line of therapy for patients with chronic myeloid leukemia (CML). A recent publication (Kerkela et al. Nature 2006;12:908) suggest that IM might have myocardial toxicity via c-Abl inhibition. Retrospective studies, however, do not show an increase of cardiac hearth failure (CHF) in patients on IM therapy in clinical trials for CML or GIST (Atallah et al. Blood 2007;110:1233 and Verweij et al. Eur J Cancer 2007; 43:974). In order to evaluate IM cardiotoxicity we included 104 patients with CML on treatment with IM. As control group, we also included 56 patients with myeloproliferative disorders not treated with IM (Essential Thrombocytemia= 27, CML=11, Policitemia Vera=11, other diagnosis=7). After informed consent, all patients had a complete clinical evaluation (interview and physical examination), blood samples for Brain Natriuretic Peptide (BNP) were taken and an echocardiographic study was performed. IM patients were slightly younger (median 48 vs. 54 years, p=0,036), but groups were similar regarding gender distribution and cardiac risk factors, except for hypertension (lower prevalence in IM group: 28% vs. 45% in controls, p=0.005). Median time of IM treatment was 894 (range 50–2122) days, mean and median actual IM dose were 448mg and 400 mg, respectively. Cardiac symptoms and signs were equally distributed between groups, except for peripheral edema, more frequent in IM group (27% vs 9%, p=0.005). There was no statistical difference regarding BNP levels (median 20.9, interquartile range 14.0 pg/mL vs. 23.2, IR 19.6 pg/mL), end diastolic volume of left ventricle (median 79.0, IR 27.0mL vs. 80.5, IR 24.0mL) and ejection fraction (EF, $69\pm15\%$ vs. $68\pm13\%$) for IM and control group, respectively. Four patients presented BNP level above the upper normal limit (UNL = 100 pg/mL) in IM group and none in control group. One patient in IM group and none in control group presented an ejection fraction below normal (<50%). This study shows that a systematic deterioration of cardiac function mediated by IM therapy was not observed. However, since some patients presented with alteration of BNP and/or EF, there is still a possibility for isolate cardiotoxicity associated with IM. BNP, a simple test to perform, might be useful as a screening test to identify patients at risk for subsequent CHF while on IM therapy.

15952

PARADOXICAL AND CURVILINEAR RELATIONSHIP BETWEEN COMPONENTS OF METABOLIC SYNDROME, ATHEROSCLEROSIS, AND HDL-CHOLESTEROL IN AFRICANS WITH TYPE 2 DIABETES MELLITUS: PROPOSITION OF METABOLIC SYNDROME DEFINITION FOR

B. Longo-Mbenza[1], JB Kasiam Lasi On'ki[1], A Kasiam Lasi On'ki[2], N Kangola Kabangu[2]., [1]*University of Kinshasa* [2]*Biostatistics Unit, LOMO MEDICAL Center and Heart of Africa Center of Cardiology*

Aims The explosion in the prevalence of type 2 diabetes mellitus is a major health issue worldwide: a component of metabolic syndrome and a cause of atherosclerotic complications. Low High density lipoprotein (HDL) cholesterol predicts metabolic syndrome in Caucasians but not in West Africans. We examine the relationship between atherosclerotic complications, abdominal obesity, metabolic syndromes, diabetes control, and HDL-cholesterol groups. A specific definition of metabolic syndrome for sub-Saharan Africa was therefore proposed for validation. Methods and results A representative sample of type 2 diabetic central Africans from Kinshasa were studied. Outcome measures included control of diabetes, macrovascular complications (atherosclerosis), abdominal obesity (waist circumference $\geq$94 cm for men and women), insulin resistance, total cholesterol, triglycerides, HDL-cholesterol, metabolic syndromes, complex cardiometabolic risk as combinations of atherosclerosis and metabolic syndromes (IDF and local African definitions), delta postprandial glycaemia, and high fatal cardiovascular event risk. Of 1266 type-2 diabetic patients, 618 patients (48.8%), 782 patients (61.8%), 343 patients (27.1%) and 1027 patients (81%) had uncontrolled diabetes, atherosclerotic complications, IDF metabolic syndrome and specific African metabolic syndrome, respectively. Low HDL-cholesterol (<40 mg/dL) was positively associated with atherosclerotic complications, while high fatal cardiovascular event risk was positively ($P<0.05$) related to high HDL-cholesterol ($\geq$40 mg/dL). There was a significant U-shaped relationship between atherosclerotic complications, insulin resistance, delta postprandial glycaemia and HDL-cholesterol stratification (Low < 40 mg/dL, intermediate 40–74 mg/dL, very high $\geq$75 mg/dL). There was also a significant U-shaped relationship between IDF complex cardiometabolic risk ($P<0.01$), African specific complex cardiometabolic risk ($P<0.00001$) and atherosclerotic complications. Conclusion: Type-2 diabetic Central Africans exhibit very high rates of uncontrolled diabetes, atherosclerotic complications and metabolic syndrome. Both, abdominal obesity, insulin resistance (top quartiles), low and very high HDL-cholesterol levels are components of the specific African metabolic syndrome and significant correlates of diabetes-related cardiovascular complications. Keywords: Type 2 diabetes; metabolic syndrome; insulin resistance; abdominal obesity; HDL-cholesterol, sub-Saharan Africa.

16676

EXPERIMENTAL DIABETIC STATE ATTENUATED LEFT VENTRICULAR DYSFUNCTION AFTER MYOCARDIAL INFARCTION

B. Rodrigues[1], A. Medeiros[2], G. Orsi Candido[1], K. Teodoro Rosa[1], R. Nitrosi De La Fuente[1], P. Chakur Brum[2], K. De Angelis[3], M.C. Irigoyen[1]., *[1]Heart Institute, Medical School, University of Sao Paulo [2]School of Physical Education and Sport, University of Sao Paulo [3]Human Moviment Laboratory, Sao Judas Tadeu University*

Experimental studies with diabetes reveal both, higher and lower heart vulnerability to ischemic injury. The aim of this study was to evaluate the left ventricular (LF) function and the intracellular Ca2+ homeostasis in streptozotocin (STZ) diabetic rats submitted to myocardial infarction. The animals were divided in: control (C, n=8), myocardial infarction (MI, n=8), STZ-diabetic (D, n=8) and STZ-diabetic associated with MI (DMI, n=8). After 90 days of MI and/or 105 days of STZ diabetes induction, left ventricular (LV) function was assessed non-invasively (by echocardiogram) and invasively (by left ventricular catheterization). Proteins related to intracellular Ca2+ homeostasis were analyzed by Western blotting. Myocardial infarction size was similar in all infarcted groups (~40±3%). LV ejection fraction was lower in MI group (42±13%) when compared with that C, D and DMI (70±3, 61±5 and 55±12%, respectively). Myocardial performance index, an index that represents myocardial effort degree, was higher in MI rats (0.56±0.04) in comparison with C (0.34±0.03), D (0.50±0.02) and DMI (0.45±0.08) rats. In LV invasive measurements, +dP/dt was diminished in D, MI and DMI groups when compared to C group (4997±415, 4642±457 and 6160±451 vs. 9445±420 mmHg/sec in controls, respectively), with additional impairment in MI compared with DMI group. Moreover, the end diastolic pressure was increased in both infarcted groups (MI: 20±2 and DMI: 12±3 mmHg) when compared with D and C groups (D: 5±0.3 and C: 6±1 mmHg), with an additional increase in MI in comparison with DMI group. MI rats presented abnormalities in intracellular Ca2+ homeostasis represented by increased Na+/Ca2+ exchanger (97%) and Phospholamban (61%) expression levels, and by decreased phosphatase protein 1 (49%), phosphorylated phospholamban at Serine16 (263%) and at Threonine17 (295%) expression levels when compared with DMI rats. These results showed that STZ-diabetic state was associated with reduced functional and molecular left ventricle dysfunction after myocardial infarction, suggesting an important role of heart glucose availability to ischemic injury.

Correction

In the version of the "The 2008 World Congress of Cardiology Abstracts, Buenos Aires, Argentina, May 18–21, 2008: Poster Presentations" that published online on May 17, 2008 (DOI: 10.1161/CIRCULATIONAHA.108.189874), the following corrections are needed:

1. Abstract 15742/P583, 'Influence of Emigration of Rural Mexicans to the United States and Cardiovascular Risk Factors in Close Relatives who Remain in Mexico': An author's name was omitted from the byline. The name "JM Reardon" should be included between authors "SM Skinner" and "PY Frasier."

2. Abstract #17183/P1188, "Dilated Cardiomyopathy Registry in Chronic Hemodialys Patients (REMIDIAL)": An author's name was omitted from the byline. The name "P. Morales" should be included at the end of the byline, after "J Beloscar."

3. Abstract #14676, "Assessment of cardiotoxicity of imatinib mesylate in chronic myeloid leukemia patients - a cross-sectional study": This abstract was omitted from the original online version of the abstracts. It is now included on page e412.

4. Abstract #15952, "PARADOXICAL AND CURVILINEAR RELATIONSHIP BETWEEN COMPONENTS OF METABOLIC SYNDROME, ATHEROSCLEROSIS, AND HDL-CHOLESTEROL IN AFRICANS WITH TYPE 2 DIABETES MELLITUS: PROPOSITION OF METABOLIC SYNDROME DEFINITION FOR": This abstract was omitted from the original online version of the abstracts. It is now included on page e412.

5. Abstract #16676, "EXPERIMENTAL DIABETIC STATE ATTENUATED LEFT VENTRICULAR DYSFUNCTION AFTER MYOCARDIAL INFARCTION": This abstract was omitted from the original online version of the abstracts. It is now included on page e413.

These corrections were made before final publication on September 16, 2008 (*Circulation*. 2008;118:e162–e413), and are available online at http://circ.ahajournals.org/cgi/content/full/CIRCULATIONAHA.108.189874.

DOI: 10.1161/CIRCULATIONAHA.108.190869

(*Circulation.* 2008;118:e495.)

***Circulation* is available at http://circ.ahajournals.org**