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

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Chemoskin-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 ELSA by «Render 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; 369] ng/mL, after 6 month – 403 [392; 522] ng/mL, p<0.001). In 36 patients (67.92%) MCP-1 levels were statistically different (p<0.001). There was no correlation the levels of MCP-1 with severity of myocardial injury (MI or ASC). Statistical difference in the levels of MCP-1 were not found between 2 groups (p>0.05). 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 adverse outcome of MI or ASC in patients with type 2 diabetes mellitus.

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

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Background: Cardiovascular diseases (CVD) are thought to be caused by matrix digestion by metalloproteinases (MMPs) leading to rupture of atherosclerotic plaques. Production of matrix metalloproteinase (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 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 (63% – 44 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 (G6, 33.3%, GC: 53.0%, CC: 13.7%) and controls (GG: 12.9%, GC: 53.3%, CC: 33.8%) 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 GC genotype was significantly associated with a lower risk of CAD (OR – 0.16, 95% CI: – 0.06 – 0.40, P<0.001). Similarly, the OR related to heterozygous GC genotype was 0.38 (95% CI: – 0.18 – 0.82, P<0.05). Conclusion: These findings suggest that the -765G>C polymorphism 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.

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

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Background: Intereference between pacemaker (PM) lead and tricuspid apparatus may cause tricuspid regurgitation (TR). However, data regarding TR in patients with implanted PM are controversial. 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±8 years, 44 male) referred for PM implantation (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. Conclusion: 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.

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

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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: 2012 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 oxometry in operation room before anesthesis 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 graft 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 (34.63%) patients. Ejection fraction was found =< 40 in 52 (52.91%) 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.

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

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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 were 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 at the 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.
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 ± 10y). 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.

**TABLE 1 - PATIENTS WITH HYPERTENSIVE DISORDERS OF PREGNANCY**

<table>
<thead>
<tr>
<th>Hypertensive disorders of pregnancy</th>
<th>Diagnosis of HDP</th>
<th>Outcome total of p</th>
<th>Complications</th>
</tr>
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<tr>
<td>APS n= 24 pg 30 24-36</td>
<td>12</td>
<td>6</td>
<td>16</td>
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**TABLE 2 - OUTCOME AND PERINATAL RESULTS IN A NEXT PREGNANCY**

<table>
<thead>
<tr>
<th>Hypertensive disorders of pregnancy</th>
<th>Treatment</th>
<th>Weight gain gestational age Abortion</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>APS n= 24 pg 30 24-36</td>
<td>6</td>
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**Elevated augmentation index but not hsCRP could be related to arterial damage in patients with rheumatoid arthritis**

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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 it is 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 49.08±10.07 years) with moderate and high disease activity (DAS28 5.3±0.94) and 87 controls (age 38.10±8.69 years). The aortic augmentation index (AIx) 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 AIx (22.88±12.19 vs. 12.60±9.36, p<0.001) and hsCRP (33.84±45.83 mg/L vs. 1.53±20.10 mg/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 AIx (R2=0.718, adjusted R2=0.707, p<0.001).

Comparing AIx 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.
advised the door-to-door 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-door 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-door 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 ± 9.5 years. The mean anterior door-to-door time was 60.54 ± 84.8 minutes (116.46 ± 109.00 minutes before the implementation). Only 20% achieved the 30-minute door-to-door time and only 65.3% achieved the 60 minute door-to-door 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-door time but basic education and due to the rate of late A-E identification and late referrals. Keywords: Pre-hospital, acute myocardial infarct, ST elevation, door-to-door time.

**ARterial Hypertension Multicentric Study in type 2 Diabetic PATients**


Aims: To evaluate the frequency of arterial hypertension (AH) in patients with Diabetes Mellitus type 2 (DM2) treated by specialists in Diabetics 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 antihypertensives agents or any combination of these. Statistical analysis: 1. De Student test. 2. Spearman correlation. 3. 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 64.57% (IC 95%: 62.9–66.3). 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 28.5 ± 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 triglicercide value of the AH group was higher than that of the normotensive group (159.9 ± 9.33 mg/dl vs 140.5 ± 79.1 mg/dl (p < 0.001)) 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 < 0.001). There was not a significant difference as regards the HbA1c level. Hypertension treatment: diuretics: 30%. I. 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 corresponded with 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.

**Myocardial Perfusion SPECT with Double Drug Need.**

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Objective: Assess the pharmacological effect of Dipirdimol (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 of age of 66 ± 12 years, in 64/64 patients as a diagnosis test, in 16/64 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 60–120 seconds. Then an ADE IV manual injection in dosis of 3 mg/m² of body surface area. Two minutes later after the administration of the radio active drug. Haemodynamic parameters and ECG were recorded, before and after injection. Images were obtained on a dual probe gamma camera, data was calculated and quantified with the Graf Pad Prism program. All patients had a cinecoronarography 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 (Sp) was of 88% and 88% respectively for injuries, angiographically larger than 70 %, and 79% and 87% respectively for injuries angiographically middle (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 Dipirdimol and Adenosine combination as a model of synergy 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.

**Spect usefulness in patients with doubtful ergometry due to ST-T Depression**

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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, 230 men, 187 women, with a mean age of 61 ± 10 years, derived to the nuclear medicine service as they showed in the graduated ergometric test, at an st 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, 76 pts more than 2 CRF. Method: All patients underwent a functional study with a 2-sepated-day protocol with sestamibi Tc99 at rest and during exercise, according to conventional protocols.

Results: Of the 417 patients studied, 117