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Antiplatelet Effect of Sequential Administration of Cilostazol in Patients with Asetylsalycilic Acid Resistance

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Objectıve: The aim of this study was to evaluate the antiplatelet efficacy of sequential administration of cilostazol (CLZ) in patients with ASA resistance.

Methods: Consenting patients with stable coronary artery disease were first given ASA 100 for 10 days followed by collagen/epinephrine induced closure time (CTCEPI) measurements. Those who were found to be resistant to 100 mg of ASA were given 300 mg of ASA for a further 10 days after which CTCEPI measurements were repeated. Patients with resistance to 300 mg ASA were then given CLZ at a daily dose of 200 mg for 10 days followed by a final CTCEPI measurement.

Results: A total of 180 patients were enrolled. The rate of resistance to 100 mg ASA was 81/180 (45.0%) compared to a rate of 35/81 (43.2%) with 300 mg ASA. Of the 35 patients resistant to 300 mg ASA, 22 (62.9%) also failed to respond to CLZ treatment. Overall, sequential administration of 300 mg ASA and 200 mg CLZ resulted in a reduction in the number of non-responders from 45% to 12.2%.

Conclusıon: Administration of 100-300 mg of ASA provides sufficient anti-platelet activity in the majority of patients. Initiation of CLZ could be of benefit in some patients with ASA-resistance for whom an effective antiaggregant effect is of clinical importance.
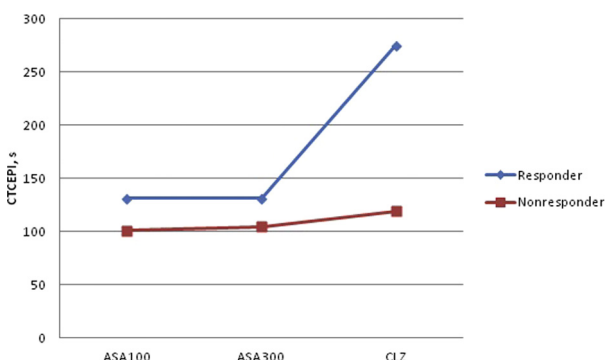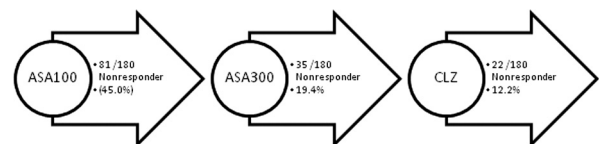
PP-259

Angiographic Peculiarities and Brain Natriuretic Peptide Levels in Coronary Heart Disease Patients with Various Left Ventricular Myocardium Mass

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Purpose. Patients and Methods: To evaluate correlation of angiographic peculiari-ties and NT-proBNP plasma levels in coronary heart disease (CHD) pts with various left ventricular myocardium mass indices (LVMMI) 232 men 40-60 years old with stable angina were investigated. The 1st study group included 117 pts whose LVMMI had been within normal range (<125 g/m2; M ±m - 114,1±1,8 g/m2), the 2nd study group included 115 patients with left ventricular hypertrophy (LVH; LVMMI>125 g/m2; M ±m -162,1±4,6 g/m2, p <0,005). CHD duration had been 3,3±0,5 and 3,7±0,6 years correspondingly. 68 (58,1%) pts 1st group and 55 (50,9%) patients 2nd group had previously survived myocardial infarction. In addition to clinical, labora-tory and instrumental examinations, a coronarography and determinations NT-proBNP plasma levels had been carried out.

Results: The 2nd group pts compared with 1st group pts demonstrated significantly higher plasma NT-proBNP concentrations (9,9±1,2 pg/mL vs 5,4 ±1,7pg/mL, correspondingly; normal range 0 - 200 pg/mL). Total cholesterol, LDL, HDL and triglycerides plasma levels were not differed significantly between both groups pts. Intact coronary arteries had been found more frequently in 1st group pts (10,3%), than in patients with LVH (1,7%). Coronary arteries hemodynamic lesions had been found both in 1st (81,1%) and 2nd (95,9%) group pts. In 1st group one affected coronary artery had been found in 58 (49,5%) pts, two affected arteries in 16 (13,6 %) and more than two affected coronary arteries in 8 (6,8%) pts. In 2nd group more than two affected arteries had been found in 77 (66,9%), two affected arteries in 22 (19,1%) and one affected coronary artery only in 13 (11,3%) pts. Affected left main stem coronary artery (LMS) had been found in 18 (15,6%) pts with LVH, while intact LMS had been revealed in all pts with normal LVMMI. Also, other affected main coronary arteries such as anterior interventricular artery, diagonal artery, left circumflex artery, obtuse marginal artery, and right coronary artery had been found more frequently in LVH pts.

Conclusion: Our data revealed a close relationship between plasma NT-proBNP concentration and increased myocardial mass index, therefore NT-proBNP may be used as informative criterion in assessment of morphologic and functional status of a heart. Clinically significant hemodynamic lesions of three and more coronary arteries as well as affected main coronary arteries had been found more frequently (with statistical validity) in LVH patients.

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Neutrophile/Lymphocyte Ratio is Associated with More Extensive and Severe Coronary Artery Disease and Impaired Myocardial Perfusion

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Objectıve: Atherosclerosis is an inflammatory process where leucocytes and subgroups play an important role. Recently neutrophile to lymphocyte ratio has been suggested as a predictor of morbidity and mortality in patients with coronary artery disease. We aimed to investigate if there is any relation between neutrophile to lymphocyte ratio (N/L ratio) with angiographically determined extent, severity, complexity of coronary artery disease and myocardial perfusion.

Methods: We consecutively involved 151 patients who were admitted with stable angina pectoris or acute coronary syndrome and who were decided to undergo coronary angiography. Blood samples were drawn before coronary angiography for complete blood count analysis to assess neutrophile and lymphocyte counts, and N/L ratio. Gensini score and SYNTAX score were calculated to assess extent, severity and complexity of coronary artery disease. Myocardial blush grade was used to evaluate myocardial perfusion.

Results: There were 93 patients in the stable angina group and 58 patients in the acute coronary syndrome group. Groups were similar with respect to baseline demographic, clinic and laboratory parameters (Table 1). Neutrophile counts were 4,4±1,4 and 5,0±1,6 in the stable angina and acute coronary syndrome groups respectively (p:0,018); whereas lymphocyte counts were 2,2±0,7 and 2,1±0,7 respectively (p:0,104). Neutrophile to lymphocyte ratio was 2,2±1,2 in the stable angina group and 2,6±1,0 in the acute coronary syndrome group (p:0,002). N/L ratio was significantly associated with Gensini and SYNTAX scores (r:0,469 and r:0,458 respectively; p<0,001 for both). This association remained significant after adjustment for age and total leucocyte count (adjusted OR: 1,968 %95 CI (1,301-2,975), p:0,001). According to Kruskal Wallis analysis, there was a significant association between MBG and N/L ratio (p<0,001). Cut off value of N/L ratio to predict moderate to severe CAD according to SYNTAX score was 2,26 (Figure 1).

Conclusıon: Neutrophile to lymphocyte ratio is associated with severe and extensive coronary artery disease and it may be used to predict moderate to severe involvement in patients with coronary artery disease.

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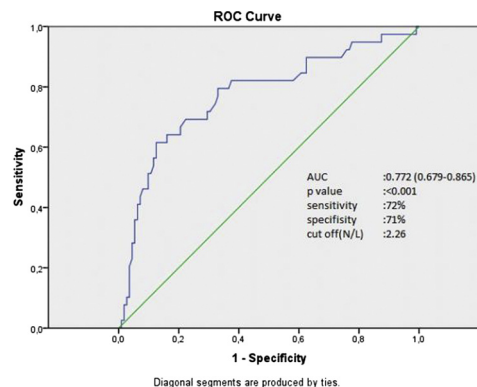
Table 1

	SAP (N:93)	ACS (N:58)	p value
age	59,54+/-12,5	61,2+/- 14,9	0,375
sex (F/M)	47/46	24/34	0,316
WC	90,6+/-9,6	88,5+/-8,4	0,480
BMI	27,7+/-3,5	26,9+/-1,92	0,169
HT(%)	53,8	62,1	0,398
DM(%)	29	39,7	0,214
smoker(%)	49,5	56,9	0,406
FH(%)	32,3	25,9	0,467
HPL (%)	51,6	58,6	0,502

Baseline characteristics of the study population. p<0,05 is considered significant. SAP:stable angina pectoris, ACS: acute coronary syndrome, BMI:body mass index, WC:waist circumference, HT:hypertension, DM: diabetes mellitus, FH:family history, HPL: hyperlipidemia

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Relationship between Aortic Valve Calcification and the Development of Coronary Collateral in Patients with Coronary Artery Disease

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Introduction: Recent data suggest that angiogenesis have an important role in valve diseases. Aortic valve calcification considered as active athero-inflammatory disease which is characterized by the accumulation of inflammatory cells and neo-vascularization of the valves. In the literature,studies that show that some of the mediators involved in the development of aortic valve calcification is also associated with the development of coronary collateral. The aim of this study was to investigate the presence of aortic valve calcification on the development of coronary collateral.
Methods: In our study, 44 patient who underwent coronary angiography in our department and at least one major epicardial coronary artery with complete occlusion or stenosis of 90% or higher and have an aortic valve calcification in echocardiography were included. As a control group of 52 patients with aortic valve calcification was elected with the same specifications and coronary anatomy were selected. Collateral classified according to the classification of Rentrop as 0,1,2,3.
Results: In aortic valve calcification group, age (72.1±9.2 and 68.6±10.3, p=0.09), LDL (168.4±41.6 and 143.1±43.1, p=0.08), CRP (2.4±1.9 and 1.5±1.4, p=0.02) was found to be higher than the group without aortic valve calcification. Multivessel disease was significantly higher in the group with aortic calcification (p=0.001). Also development of collateral was greater in the group of aortic valve calsification (p=0.001).; When the group of collateral compared with group of without collateral, aortic calsification (p=0.008), and one or more vessels ≥90% stenosis rates (p=0.04) were found to be more than the group without collateral. In the regression analysis, the presence of aortic calcification (β=0.3, t=3.9, p=0.01), and ≥1 vessels>= 90% stenosis (β=0.5, t=5.6, p=0.001) seen as two independent parameters affecting the development of collateral.
Conclusion: In our study, the presence of aortic valve calcification is associated with the development of coronary collateral. Given athero-inflammatory etiopathogenesis of aortic valve calcification, in this process increased tissue cover inflammatory factors were thought to be induced coronary collateral development.

PP-262

Association Between Neutrophil/Lymphocyte Ratio and the Development of Coronary Collateral Circulation in Patients with Stable Coronary Artery Disease

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Objective: Several studies have established the important role of CRP in the development of coronary collateral circulation. The correlation between neutrophil/lymphocyte (N/L) ratio and collateral formation in patients with stable coronary artery disease (CAD) has not been reported.
Methods: We investigated the association between N/L ratio and the development of coronary collaterals in a cohort of 152 patients who had high-grade coronary stenosis or occlusion on their angiograms. To classify coronary collateral circulation, we used the Rentrop classification.
Results: Patients with poorly developed coronary collateral circulation had significantly higher N/L ratio compared with those with well-developed coronary collateral circulation, (4.2±4.1 vs. 3.1±2.6, p=0.039), whereas mean platelet volume (MPV), red blood cell distribution width (RDW) and uric acid were not significantly different.

Logistic regression analysis showed that N/L ratio was an independent predictor of poorly developed coronary collateral circulation (odds ratio 0.752, 95% confidence interval 0.593–0.993).
Conclusion: An elevated level of N/L ratio is independently associated with a significant impairment in coronary collateralization; patients with poorly developed collaterals tend to have a higher N/L ratio.

PP-263

Is Serum S100 Protein Associated with the Angiographic Severity of Coronary Artery Disease in Acute Coronary Syndromes?

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Background: S100, a calgranulin family protein released from white blood cells, is involved in inflammatory cardiovascular disease. It was hypothesized that the plasma level of S100 can be used to predict outcome in patients with chronic coronary artery disease (CAD). We aimed to determine the relationship between S100 protein levels and angiographic SYNTAX score, which gives information about the severity and complexity of CAD in patients with acute coronary syndromes.
Methods: This pilot study included 77 patients who were admitted to the emergency room for the evaluation of the angina pectoris. According to the clinical status and cardiac enzyme levels the patients had undergone coronary angiography. The serum S100 protein levels were measured at the administration. The independent association between serum S100 protein and the severity of CAD was statistically evaluated using PASW Statistics 18 for Windows.
Results: Mean age of the study population was 61.27±13.50 years, of whom 39 were female (50.6%) and 38 male (49.4%). Of the patients, 23.4% had diabetes mellitus, 63.6% had hypertension, 44.2% had hyperlipidemia, and 39.0% were smokers. Mean SYNTAX score was 12.5±12.2. According to SYNTAX scores, 59 of the patients (76.6%) had no significant CAD or normal coronary arteries (SYNTAX score:0-22), 18 of the patients (23.4%) had moderate to severe CAD (SYNTAX score ≥23). Mean serum S100 protein values were 0.37±0.90 μg/l in the group that had normal coronary arteries, 0.20 ± 0.46 μg/l in the group with NSTEMI, and 0.11±0.12 μg/l in the group with STEMI. According to Spearman analysis, no correlation was found between serum S100 protein and SYNTAX score (p=0.284, r=0.124). Also, there was no statistically significant correlation between s100 and troponin-t levels (p=0.051, r=0.256).
Conclusions: Previously, it was reported that, rising levels of serum S100 protein was a specific and sensitive clinically relevant marker of acute coronary syndromes. Contrary to the literature, we did not determine any correlation between S100 protein levels and SYNTAX score. It can be explained by the small-scale of the study. Larger-scale studies should be performed to shed light on this topic.

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The Association between Coronary Flow Rate and Impaired Heart Rate Recovery in Patient with Metabolic Syndrome

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Objective: The aim of this study is to evaluate heart rate recovery at various time intervals, and the association between coronary flow rate and impaired heart rate recovery in patients with metabolic syndrome who had morphologically normal coronary angiogram. To our knowledge there is no published data indicating this association in metabolic syndrome patients.
Material-Methods: The study population included 43 patients with metabolic syndrome and 37 control subjects without metabolic syndrome. All patients were selected from the individuals who had underwent coronary angiography in our hospital with a suspicion of coronary artery disease and diagnosed as having angiographically normal coronary arteries. Exercise stress test results of the patients obtained prior to the coronary angiography were evaluated for calculating heart rate recovery values and other parameters. In addition, coronary flow was objectively evaluated for each major coronary artery in each subject using the TIMI frame count method.
Results: Baseline clinical characteristics of patients with MS and control patients were presented in Table 1. In our study, all heart rate recovery values calculated were detected significantly lower in the metabolic syndrome group compared to the control group (heart rate recovery first: 32±9 vs 37±10; p=0,01, heart rate recovery second: 46±11 vs 52±11; p=0,03, heart rate recovery third: 51±12 vs 59±12; p=0,00, heart rate recovery fourth: 54±13 vs 61±2; p=0,02) (Table 2). The TIMI frame counts for each major epicardial coronary artery and mean TIMI frame count were also found to be significantly higher in the metabolic syndrome group compared to the controls (Left anterior descending artery: 51±24vs 39±15; p=0,009, Left circumflex artery: 32±11 vs 24±7; p=0,001, Right coronary artery: 33±14 vs 24±10; p=0,003, mean