



PP-137

The Clinical, Laboratory and Echocardiographic Findings of Spontaneous Echo Contrast in Patients with Atrial Fibrillation

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Objective: The risk for thromboembolic events in the setting of atrial fibrillation (AF) begins with deterioration of left atrium mechanical function that is reflected by development of spontaneous echo contrast (SEC). Although left atrium SEC has been associated with a hypercoagulable state in patients with AF, the precise underlying pathogenic mechanism behind the SEC is complex and poorly understood. The aim of the present study is to characterize the clinical, laboratory and echocardiographic findings of left atrial SEC.

Maternal-Methods: One hundred seventy two patients with AF in whom transesophageal echocardiography was performed were enrolled to this study. Patients were categorized according to the presence of the left atrial SEC. Group 1 was consisted of patients with AF and left atrial SEC (-), and group 2 was consisted of patients with AF and left atrial SEC (+). Basal demographic, laboratory and echocardiographic features of the patients were compared between two groups. Statistical analyses (Independent-Samples T test and Chi-Square tests) were used to evaluate the differences between two groups.

Results: The study group was consisted of 105 men (61%) and 67 women (39%), and the mean age of total patients was 64.48 ± 13.90 years. Group 1 was consisted of 95 patients

(70 (72.2%) men, mean age 61.90 ± 15.75 years) and Group 2 was consisted of 72 patients (35 (46.7%) men and mean age 67.82 ± 10.23 years). In terms of baseline demographic characteristics, older and male patients with AF were tend to have SEC in the left atrium (p value 0.05 for age, and 0.001 for male sex). When we evaluated the laboratory findings, we observed that there are statistically significant differences for GFR and MPV values between two groups. SEC (+) patients had low GFR values (64.18 ± 24.29 mg/dl vs. 71.83 ± 21.81 mg/dl, p value 0.031) and higher MPV values (8.94 ± 0.98 fL vs. 8.52 ± 1.15 fL, p value 0.012) compared with SEC (-) patients. For the echocardiographic findings, although SEC (+) patients had large left atrium size and low left ventricular ejection fraction, there is no a statistically significant difference. Furthermore, peak blood flow velocity of LAA was statistically lower in SEC (+) patients compared with SEC (-) ones (28.84 ± 10.55 cm/sn vs. 42.42 ± 15.11 cm/sn, p value <0.001).

Conclusion: We found that older age, male sex, low GFR value, higher MPV value and low blood flow velocity of LAA were in association with left atrial SEC. These mentioned patient characteristics may represent a propensity to the risk of thromboembolism in the setting of left atrial SEC, and would be helpful for the better recognition and/or managing of ongoing pathologies due to the future thromboembolic events in patients with AF. Further prospective studies are required to identify the prognostic significance these risk factors in the pathogenesis of left atrial SEC in patients with AF.

Results of the Study

	GROUP 1 (SEC NEGATIVE) (n=97)	GROUP 2 (SEC POSITIVE) (n=75)	P value
Basal demographic and clinical features			
Age, (years)	61.90 ± 15.75	67.82 ± 10.23	0.05
Male, n (%)	70 (72.2%)	35 (46.7%)	0.001
Heart rate, (bpm)	88.90 ± 20.95	91.84 ± 20.51	0.360
SBP, (mmHg)	126.55 ± 20.79	129.05 ± 18.46	0.414
DBP, (mmHg)	76.24 ± 13.11	76.04 ± 13.69	0.920
CAD, n (%)	30 (30.9%)	24 (32%)	0.881
HT, n (%)	47 (48.5%)	35 (46.7%)	0.816
HL, n (%)	20 (20.6%)	15 (20%)	0.920
DM, n (%)	27 (27.8%)	21 (28%)	0.981
Laboratory findings			
Glucose, (mg/dl)	119.92 ± 55.52	110.37 ± 28.82	0.177
GFR, (mL/min)	71.83 ± 21.81	64.18 ± 24.29	0.031
LDL-C, (mg/dl)	114.23 ± 31.77	110.11 ± 35.27	0.447
WBC, (10.e3/microL)	7388.75 ± 2808.06	7731.04 ± 2264.88	0.390
HB, (g/dL)	13.33 ± 1.98	13.41 ± 1.69	0.779
HCT, (%)	39.96 ± 5.62	41.08 ± 7.28	0.258
PLT, (10.e3/microL)	238.32 ± 77.30	247.49 ± 77.15	0.441
PCT, (%)	0.196 ± 0.06	0.217 ± 0.07	0.058
MPV, (fL)	8.52 ± 1.15	8.94 ± 0.98	0.012
PDW, (%)	16.35 ± 5.32	16.15 ± 2.85	0.764
RDW, (%)	15.16 ± 3.47	15.50 ± 3.51	0.531
Neutrophil/Lymphocyte Ratio	3.16 ± 2.53	3.41 ± 2.45	0.522
Echocardiographic findings			
LVIDD, (mm)	49.72 ± 5.96	50.73 ± 4.88	0.235
LA, (mm)	43.57 ± 7.01	45.62 ± 6.32	0.051
LVEF, (%)	56.79 ± 10.53	55.61 ± 11.12	0.480
Blood flow velocity of LAA (cm/sn)	42.42 ± 15.11	28.84 ± 10.55	< 0.001

PP-138

No Association between the Methyletetrahydrofolate Reductase A1298C Variants and Atrial Fibrillation with Ischemic Stroke in Turkish Population

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Background: The A1298C allele is characterized by a point mutation at position 1298 of the methyletetrahydrofolate reductase (MTHFR) gene causing the replacement of glutamine by alanine in the corresponding enzyme. MTHFR gene A1298C mutation is associated with moderately elevated homocysteine levels. Mutations in genes of the homocysteine metabolic pathway may confer an increased risk for ischemic stroke related to elevated plasma homocysteine levels. MTHFR polymorphism has been proposed by some studies to be also a thrombophilic risk factor for thrombosis. Atrial fibrillation (AF) is the commonest sustained cardiac arrhythmia, which confers a high risk of mortality and morbidity from stroke and thromboembolism. We aimed to investigate MTHFR A1298C mutation in patients with AF who have had a stroke than in healthy controls.

Methods: MTHFR gene A1298C mutation was analysed in 70 patients with non-valvular AF who have had a stroke and 70 healthy individuals with no documented episode of AF matched for age, race and sex. After DNA isolation, polymorphisms were analyze using Polymerase Chain Reaction-Restriction Fragment Length Polymorphism methods. 1298 AA genotype is the "normal" homozygous, 1298 AC genotype the heterozygous, and 1298 CC genotype the homozygous for the "variant".

Results: There was no significant difference with respect to age and gender between groups. The genotype distribution in nonvalvular AF who have had a stroke group was as follows: normal genotype (AA) frequency was 39 (55.7%), heterozygous mutant genotype (AC) frequency was 27 (38.6%) and homozygous mutant genotype (CC) frequency was 4 (5.7%). The genotype distribution in control group was as follows: normal genotype (AA) frequency was 42 (60%), heterozygous genotype (AC) frequency was 26 (37.1%) and homozygous mutant genotype (CC) frequency was 2 (2.9%). There was no statistical difference in genotype distribution among the groups. **Conclusions:** Our results suggest that the MTHFR gene A1298C mutation appears not to be associated with nonvalvular AF with ischemic stroke in Turkish population.

PP-139

Relationship between Serum Gamma-glutamyl Transferase Levels with Aortic Root Dilatation

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Background: Increased serum gamma-glutamyl transferase levels (GGT) has been shown to directly promote oxidative stress. In previous studies has been shown the relationship between the dilatation of the ascending aorta with oxidative stress. This study was designed to examine the relationship between serum GGT concentrations with dilatation of the ascending aorta.

Methods: 83 patients with ascending aorta dilatation and 82 healthy person matched of age and sex were included in the study. The patients were evaluated by a complete transthoracic echocardiographic examination including measurement of the aortic dimensions. 4 cm and above ascending aorta dilatation was accepted. Serum GGT concentration were measured in all patients.

Results: 66 % of 83 patients with ascending aorta dilatation were male and average age were 56±12.1. In the control group 63% of 82 healthy person were male and average age were 55±11.3. In the group of ascending aorta dilatation; tension, left ventricular mass index, left atrial volume index, serum GGT, serum üric acid, hs-CRP were found to be significantly higher than control group. According to multiple logistic regression; hypertension history (OR:1.22, 95%CI 1.12-1.32, p<0.05), serum GGT (OR:1.09, 95%CI 1.04-1.14, p<0.05) for ascending aorta dilatation were found to be independent variables.

Conclusions: In conclusion, we found that serum GGT concentration was significantly associated with aortic dilatation. The higher serum GGT concentration may be responsible for the elevated serum antioxidant capacity that was observed among patients with ascending aorta dilatation. Large epidemiological studies are required to correlate the findings from this study with clinical outcome.

PP-140

Product of Hemoglobin and Left Ventricular Ejection Fraction as a New Predictor of Contrast Induced Nephropathy in Patients with Acute Coronary Syndrome

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Objective: Hemoglobin concentration (Hb) and left ventricular ejection fraction (LVEF) are known predictors of contrast induced nephropathy (CIN). We hypothesized that product of hemoglobin concentration and left ventricular ejection fraction is superior to either variable alone in predicting contrast induced nephropathy in patients with acute coronary syndrome (ACS).

Methods: Consecutive patients with ACS were prospectively enrolled for this study. Those patients considered for invasive strategy were included. Baseline creatinine levels were detected on admission and 24, 48 and 72 hours after coronary intervention. 25% or 0,5 mg/dl increase in creatinine level was considered as CIN.

Results: 268 patients with ACS (mean age 58±11 years, 77% male) were included in the study. Contrast induced nephropathy was observed in 26 (9.7%) of patients. Baseline creatinine concentration, LVEF, Hb and high density lipoprotein cholesterol was significantly different between two groups. Contrast volume to estimated glomerular filtration rate ratio (odds ratio 1.310,95% confidence interval 1.077-1.593, p=0.007) and the product of Hb and LVEF (odds ratio 0.996,95% confidence interval 0.994-0.998, p=0.001) were found to be independent predictors of contrast induced nephropathy in multivariate logistic regression analysis. Hb x LVEF < 690 had 85% sensitivity and 57% specificity to predict CIN (area under curve: 0.724, 95% confidence interval 0.625-0.824, p<0.001). In addition, Hb x LVEF < 690 had a negative predictive value of 97 % in our analysis.

Conclusion: In patients with acute coronary syndrome, the product of hemoglobin and ejection fraction is better than either variable alone at predicting contrast induced nephropathy. It predicts contrast induced nephropathy independent of baseline renal function and volume of contrast agent.

PP-141

Epicardial Fat Thickness in Patients with Psoriasis Vulgaris

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Purpose: Psoriasis vulgaris is one of the most common skin disorders. Patients with psoriasis carry an excessive risk of coronary artery disease. Visceral adipose tissue around the heart affects the heart and coronaries by secreting proatherogenic mediators. It could be easily evaluated by measurement of epicardial fat thickness (EFT). The aim of this study is to investigate EFT in patients with psoriasis vulgaris.

Methods: One hundred and fifteen adult patients with psoriasis vulgaris (group 1) and 60 age- and sex-matched healthy individuals (group 2) were included in this study. EFT was obtained by transthoracic echocardiography. Disease specific characteristics of the patients were recorded. Serum glucose, lipid profile, and high sensitive C-reactive protein (hsCRP) levels were measured.

Results: EFT and hsCRP were significantly higher in group 1 than in group 2 (5.7±1.2 vs. 4.1±1.0 mm, p<0.001 and 0.52±0.45 mg/dL vs 0.19±0.17 mg/dL, p<0.001; respectively) (Fig. 1). In patients with psoriasis vulgaris, EFT was correlated with disease severity assessed with psoriasis activity score index (PASI)(Fig. 2). The PASI score and hsCRP were found to be independent predictors of EFT in patients with psoriasis vulgaris (β=-0.21, t=2.67, p=0.01 and β=0.62, t=7.72, p=0.001; respectively).

Conclusions: Our findings indicate that EFT was significantly higher in patients with psoriasis vulgaris compared with the controls. It was more prominent in patients with severe disease.

