

OP-01
EFFECT OF DOBUTAMINE STRESS ON BASAL SEPTAL TISSUE KINETICS IN HYPERTENSIVE PATIENTS WITH BASAL SEPTAL HYPERTROPHY

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Background: Basal septal hypertrophy (BSH) may lead to left ventricular outflow tract (LVOT) obstruction and thought to be developed by increased ventricular dynamics. We previously observed increased LVOT gradients by stress in this group. The aim was to evaluate the effects of pharmacologic stress on basal septal tissue kinetics in a group of hypertensive patients with BSH.
Methods: Dobutamine stress was used in 24 hypertensive patients (mean age 56 ± 8 years; 11 women) with BSH and the values were compared with those in 20 normal controls (mean age 54 ± 9 years; 7 women). LVOT velocities, diastolic transmitral and basal septal tissue systolic and diastolic velocities before and at peak dobutamine infusion were determined by continuous wave Doppler and Doppler tissue Imaging (DTI), respectively.
Results: There were no differences in mean ejection fraction and myocardial mass between BSH patients (58±3%, 204±24g) and normals (56±4%, 201±32g, respectively). Basal septum was thicker in patients (1.55±0.2cm) than normals (1.03±0.1cm)(p<0.001). Maximum LVOT and basal septal DTI systolic velocities were similar in BSH (1.2 ± 0.4 m/s, 7 ± 1.7 cm/s) and normals (1.1 ± 0.2 m/s, 6.8 ± 1.2 cm/s, respectively) at rest. At peak stress, maximum LVOT and basal septal DTI systolic velocities were higher in BSH (3.3 ± 0.6 m/s, 17 ± 3 cm/s) than normals (1.7 ± 0.4 m/s, 13.7 ± 2.5 cm/s, respectively, p < 0.001). LV rate–pressure product at peak stress was higher in BSH (23326 ± 4388) than normals (17592 ± 2409)(p < 0.001). Diastolic function did not significantly change in two groups.
Conclusion: High velocities appeared on basal septal tissue and in the LVOT at peak pharmacologic stress in the hypertensive patients with BSH compared with control group. This suggest dynamic ventricular ejection by stress may contribute on hypertrophy induction of basal segment which is the closest part of septum to increased afterload.

OP-03
DIFFERENTIATING ISCHAEMIC and IDIOPATHIC DILATED CARDIOMYOPATHY USING LEFT VENTRICULAR LONG AXIS FUNCTION DURING DOBUTAMINE STRESS.

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Background: Subendocardial longitudinal fibers are sensitive to ischaemia. Aim. To identify stress-induced long axis changes that can differentiate between patients with ischaemic- (Is-DCM) and idiopathic dilated cardiomyopathy (Id-DCM).
Methods: 18 patients with Id-DCM (EDD 6.6±0.7cm, ESD 5.5±0.7cm) were compared with 25 patients with Is-DCM (EDD 7.0±0.8cm, ESD 5.9±0.9cm) and 17 controls (EDD 5.0±0.4cm, ESD 3.3±0.6cm). Transthoracic long axis M-mode echograms and 12-lead ECGs were obtained at rest and at peak dobutamine stress. Electromechanical delay (q wave to onset of shortening, q-OS), long axis amplitude, lengthening velocity (LVel), and post-ejection shortening (PES) were measured.
Results: Rest. In controls, q-OS was 81±11ms, amplitude 14±3mm, LVel 5.7±1.4cm/s, and PES was absent. In Id-DCM, q-OS was longer than controls (139±46ms, p<0.001), amplitude was reduced (9±3mm, p<0.001), LVel was not different (4.9±1.9cm/s), and PES was increased (0.9±1.2mm, p<0.01). In Is-DCM, q-OS was not different from Id-DCM (127±34ms), amplitude was lower (7±3mm, p<0.05), LVel was reduced (1.5±1.8cm/s, p<0.001), and PES was no different (0.8±0.1mm).

-q-OS (ms)	__amplitude (mm)	__LV (cm/s)	__PES (mm)
-46±3	+3±2	+2.8±1.7	0
-52±33	+2±1	+3.2±1.8	-0.7±1.0*
+17±25**	+1±2*	+0.9±2.0*	+0.9±1.2**

*:p<0.01; **:p<0.001 v controls; _:p<0.01; __: <0.001 Is-DCM v Id-DCM

Conclusion: In Id-DCM, electromechanical delay shortens and incoordination regresses, as in controls. Stress-induced ischaemic dysfunction includes increased electromechanical delay and exaggerated incoordination. These differences may differentiate patients with Is-DCM and Id-DCM.

OP-02
DIFFERENTIATION OF ISCHAEMIC FROM NON-ISCHAEMIC CARDIOMYOPATHY DURING DOBUTAMINE STRESS: COMPARISON OF LEFT VENTRICULAR LONG AXIS FUNCTION WITH STANDARD WALL MOTION ANALYSIS

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Background: Resting regional wall motion abnormalities at rest do not reliably distinguish ischaemic from non-ischaemic cardiomyopathy. Dobutamine stress echocardiography using wall motion score index (WMSI) identifies coronary artery disease (CAD) in dilated cardiomyopathy (DCM), but the technique is subjective. Left bundle branch block (LBBB) adds further diagnostic limitations. Long axis motion is sensitive to ischaemia and can be assessed quantitatively. Aim - To compare long axis function with standard WMSI for the detection of CAD in patients with DCM, with or without LBBB.
Methods: 73 patients with DCM, 48 with CAD (16 with LBBB), and 20 without CAD (10 LBBB) were studied during dobutamine stress echocardiography. Long axis echograms (lateral, septal and posterior wall) and WMSI were assessed at rest and peak stress.
Results: A reduced increment in long axis amplitude during ejection of <2mm was the single best discriminator for CAD (p<0.001). Using this threshold, long axis function identified patients with CAD with a sensitivity of 85% and specificity 88%. This was significantly greater than the sensitivity and specificity for changes in WMSI (67% and 76% respectively, p<0.001). Even in LBBB, failure of long axis amplitude to increase >2mm during ejection with stress identified CAD with a greater sensitivity and specificity than changes in WMSI (sensitivity 88% vs. 69%, specificity 89% vs. 50%, p<0.001).
Conclusions: Stress-long axis function identifies coronary artery disease in dilated cardiomyopathy with greater sensitivity and specificity than standard wall motion analysis, even in the presence of left bundle branch block.

OP-04
RELATIONSHIP BETWEEN SEVERITY of AORTIC STENOSIS (CLINICAL AND ECHOCARDIOGRAPHIC VARIABLES) and NATRIURETIC PEPTIDES

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Objectives: We have tried to find a relationship between severity of aortic stenosis (AoS) (clinical and echocardiographic variables) and plasma level of atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP).
Methods: 23 patients with AoS have been examined, including 13 men and 10 women, age 63±7. They were compared to 20 age and sex matched healthy controls.
 Echocardiography was used to measure LV and LA systolic and end-diastolic diameters, posterior wall and IVS thickness, LV ejection fraction. As a degree of the AoS, the peak aortic valve pressure gradient (PPG 101±23 mmHg), the aortic valve area index (AVAi 0.29±0.05 cm²/m²) and the left ventricular mass index (LVMI 237±91 g/m²) were calculated. Three blood samples were taken from each patient and ANP and BNP plasma concentrations were determined by immunoradiometric assay (IRMA). The first sample (ANP1, BNP1) was taken after 20 minutes resting in supine position, the second one (ANP2, BNP2) after a 6 minute walk test and the third one (ANP3, BNP3) after 20 minutes of rest.
Results: All natriuretic peptide plasma levels exhibited wide interpatient variability (ANP 1,2,3 69.4±27.3, 86.1±47.7, 46.9±43.0, and BNP 1,2,3 (169.0±151.2, 184.6±166.4, 170.7±150.6 pg/ml, respectively). All ANP and BNP plasma levels were significantly higher in patients with AoS compared to the controls (ANP 1,2,3 p<0.001; BNP 1,2,3, p=0.001). Both ANP and BNP levels had a non-significant, but rising trend with the NYHA classification. Only ANP showed statistically significant changes between resting, immediately after- and post-exercise levels (ANP 1vs. 2, p<0.05; ANP 2vs. 3, p<0.05). There was also a strong, statistically significant correlation between PPG and BNP 1 (r=0.820, p<0.001) and BNP 2 (r=0.821, p<0.001), but none was found with AVAi and LVMI. Sensitivity of the test to detect a critical AoS was 77.7% for ANP and 100% for BNP, specificity was 57.1% and 28.6%, respectively.
Conclusions: We have found both ANP and BNP plasma concentrations to be significantly higher in patients with severe AoS than in controls. Moreover we found that the natriuretic peptides correlate with the aortic valve pressure, BNP being a better predictor of severity. Our first experience suggests that natriuretic peptides estimation may prove to be a useful tool for detection of severe AoS, however, more experience is needed to assess its sensitivity and specificity to detect borderline gradients.

OP-05
ASSESSMENT OF GLOBAL AND REGIONAL SYSTOLIC and
DIASTOLIC FUNCTION of LEFT and RIGHT VENTRICLE IN
PATIENTS WITH CORONARY SLOW FLOW

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Background: It was known that left ventricular mass is increased and global diastolic function is impaired in cases who have slow flow in their coronary arteries.

Objective: To evaluate regional systolic and diastolic functions, have not been evaluated yet, in cases with coronary slow flow.

Methods: In this study, it was compared systolic and diastolic function parameters in 20 cases with coronary slow flow and 16 healthy subjects. Coronary slow flow was diagnosed according to visual assessment and the TIMI frame count. Peak systolic (Sm), peak early diastolic (Em), peak late diastolic (Am) velocities, ratio of Em/Am, deceleration time of early diastolic velocity (Emdt) and S duration were recorded from left ventricular basal segments (basal septum, basal lateral, basal anterior, basal inferior) and right ventricle basal lateral segment. Additionally, standard M-mode and Doppler parameters were measured.

Results: Diastolic dysfunction was detected in both left and right ventricle in slow flow group. Sm and Am velocities were not different in all segments in both groups. S duration was shorter in all the segments but basal anterior segment. Em was lower in all the segments but RV basal lateral segment. Em/Am ratio was lower in the basal inferior segment, and Emdt in all the segments but basal inferior segment was shorter in the slow flow group compared to the control group.

Conclusion: Some parameters of systolic and diastolic regional function deteriorated in patients with coronary slow flow.

OP-07
THE RELATION BETWEEN LEFT ATRIAL SPONTANEOUS ECHO
CONTRAST AND HEMOSTATIC PARAMETERS IN PATIENTS WITH
MITRAL STENOSIS IN SINUS RHYTHM

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Systemic embolism is one of the major complications of mitral stenosis (MS). Incidence of left atrial spontaneous echo contrast (LASEC), thrombus and thromboembolism in patients with MS in sinus rhythm are lower than those in atrial fibrillation. The aim of our study is to compare the haemostatic parameters of patients with severe MS in sinus rhythm with and without LASEC. For this reason, the levels of fibrinogen, D-dimer and antithrombin-III (AT III) for thrombogenesis and activation of coagulation, tissue plasminogen activator (tPA) and plasminogen activator inhibitor-1 (PAI-1) for the activation of the fibrinolytic system, von Willebrandt factor (vWF) for the endothelial function and platelet factor-4 (PF4) for platelet activation were studied in these patients. 28 patients (4 men, 24 women) with severe MS (MVA 1.0 ± 0.3 cm²) were included in this study to whom transthoracic and transesophageal echocardiography were performed. 18 of the patients were in the LASEC (-) group and 10 of them were in the LASEC (+) group. Fibrinogen, D-dimer and AT-III levels were significantly higher in the LASEC (+) group ($p < 0.05$) and showed the coagulation activation and increased fibrin turn-over in this group of patients. There wasn't a statistically significant difference between tPA and PAI-1 levels of the two groups ($p > 0.05$). vWF and PF4 levels of the LASEC (+) group were significantly higher than the LASEC (-) group ($p < 0.05$).

In patients with MS and sinus rhythm LASEC (+) group was shown to have a significant abnormality in haemostatic parameters and endothelial function. Besides stasis in the left atrium, hypercoagulability and also endothelial dysfunction may have important roles in the left atrial thrombus formation of these patients.

OP-06

REAL-TIME 3D ECHOCARDIOGRAPHY ASSESSMENT OF LEFT
VENTRICULAR VOLUMES IN YOUNG AND ELDERLY PATIENTS
WITH HYPERTROPHIC CARDIOMYOPATHY

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Background: We previously reported catenoid left ventricular (LV) geometry in patients with hypertrophic cardiomyopathy (HCM) using 3 dimensional echocardiography (3 DE). We performed this study to compare LV geometry in young and elderly patients with HCM.

Methods: We studied 12 young patients (age 38 ± 9) and 12 elderly patients (age 67 ± 12). The LV was divided into 5 disc shaped segments. End-diastolic mean long-axis length (EDL) and volumes (EDV), and end-systolic mean long-axis length (ESL) and volumes (ESV) were measured at each segment by real-time 3 DE using the area-length disc method.

Results: There were no differences in global indexes of LV geometry such as mean myocardial mass (elderly HCM: 305 ± 137 vs young HCM: 385 ± 118 g) and mean ejection fraction ($56 \pm 8\%$ vs $48 \pm 6\%$). There were no differences in ESV (elderly HCM: 36 ± 9 vs young HCM: 55 ± 16 cm³) and EDV (82 ± 14 vs 106 ± 28 cm³). Compared with young patients with HCM, elderly patients with HCM demonstrated shorter ESL (1.44 ± 0.19 vs 1.72 ± 0.21 cm, $p < 0.05$) and EDL (1.72 ± 0.31 vs 1.94 ± 0.28 cm, $p < 0.05$).

Conclusions: Despite similar LV volumes in both groups, ESL and EDL were smaller in elderly group with HCM. This supports the concept of a geometrical change of the LV in HCM with aging adopting a shorter longitudinal dimension and a more spherical geometry.

OP-08

HIGH LIKELIHOOD OF MULTIPLE METABOLIC AND
PROINFLAMMATORY RISK FACTORS AND HIGH CORONARY
RISK IN TURKISH ADULTS ASSOCIATED WITH ABDOMINAL
OBESITY AT A WAIST GIRTH OF 96 CM OR MORE

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In the old and newly recruited cohorts of the Turkish Adult Risk Factor Study consisting of 2350 men and women (mean age 52 ± 12 years), body mass index (BMI), waist circumference (WC) and waist-to-hip ratio (WHR) were assessed cross-sectionally and prospectively. Coronary heart disease (CHD) was diagnosed based on clinical findings and Minnesota coding of resting electrocardiograms. At standardized age, mean WC and BMI in men were 90.7 cm and 27.3 kg/m², respectively, and in women 90.8 ile 29.1 kg/m², respectively. When controlled for age, WC was correlated with concentrations of fasting insulin in men and women ($r = 0.25$ and 0.20 , respectively; both $p < 0.001$), and with apolipoprotein (apo) B ($r = 0.21$; $p < 0.001$ in men and $r = 0.09$; $p < 0.08$ in women). Among quintiles of WC, ≥ 96 cm which separated quintile 4 from quintile 3, was associated with significantly higher apo B levels than quintile 1 in both genders, and with higher serum insulin values ($p < 0.01$ in all with ANOVA test).

Following difference in magnitude or ratio of variables existed across the highest and lowest quintiles of WC: 22 mg/dl in apo B, 3.5-fold to 2-fold in C-reactive protein (CRP), 2 to 2.4-fold in fasting insulin levels. Furthermore, diabetes was 2.2-fold more common in men and 4.8-fold in women across the quintiles.

In a logistic regression analysis over a 4-year follow-up, WC significantly predicted nonfatal and/or fatal CHD risk in men, and among men and women combined, independent of 9 other salient risk factors, imparting 35% excess risk for each increment of 12 cm (= 1 SD) of WC. In the presence of the latter, BMI failed to contribute to CHD prediction. WHR failed to be significantly associated with CHD likelihood among women.

It was concluded that abdominal obesity in Turkish adults not only substantially elevated the concentrations of important cardiovascular risk factors such as serum apo B, insulin, CRP, and the prevalence of type II diabetes, but also contributed independently to cardiovascular morbidity and mortality, particularly among men. The relationship between CHD risk and the stated atherogenic risk factors suggested that Turkish men with a waist circumference of ≥ 96 cm should be considered at the "action level 2". These findings should be taken into account in public heart health policy.

OP-09

CORRELATION BETWEEN N-TERMINAL PRO BRAIN NATRIURETIC PEPTIDE AND BRAIN NATRIURETIC PEPTIDE IN PATIENTS WITH MILD TO MODERATE HEART FAILURE

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Background: Brain natriuretic peptide (BNP) levels have been used in clinical practice to assess clinical status and predict prognosis of patients with chronic heart failure (HF). However, in many places BNP levels were measured in rapid BNP assays for bedside use or as N-terminal-proBNP in specialized laboratories. The correlation of both assays is unknown, and correlation of proBNP with functional New York Heart Association (NYHA) class or left ventricular (LV) function is not well established.

Methods: We compared a pro-BNP assay with conventional measurement of BNP and determined the association between clinical characteristics, LV function and BNP/proBNP levels. BNP and proBNP levels were measured in 50 consecutive outpatients with stable HF in functional NYHA class II to III. **Results:** Of 50 patients with HF (mean age 55 years ± 14, 16% female), 21 (42%) had diagnosis of coronary heart disease, 17 (34%) of dilated cardiomyopathy and 4 (8%) were heart transplanted. The mean LV ejection fraction was 35 ± 16% and mean creatinine was 124 ± 42 µmol/l. Spearman's Rho was 0.84 between BNP and pro-BNP and intraclass correlation coefficient was 0.955. R_s as a measure of the strength of the relationship between BNP and proBNP was 0.60. In a linear regression model the point estimate of BNP in prediction of proBNP was unaffected after adjusting for age, creatinine, sex, diagnosis and LV function.

Conclusion: Although tests of validity and reliability between BNP and proBNP are high, the strength of correlation is weak, such that direct conclusions from BNP levels even after adjusting for clinical characteristics to proBNP levels can not be made. Changing the BNP assay in the clinical practice warrants studies of validation.

OP-11

INCREASED HIGH SENSITIVE C-REACTIVE PROTEIN LEVEL AND ITS SIGNIFICANCE IN PATHOGENESIS OF SLOW CORONARY FLOW

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Objective: Previous studies have suggested that microvascular abnormalities cause slow coronary flow (SCF). The role of inflammation has not been investigated, to date. The objective was to determine the role of inflammation in pathogenesis of SCF.

Methods and Results: The study included 32 patients with angiographically proven SCF (Group-I) and 30 subjects with normal coronary flow (Group-II). Blood samples were collected for high sensitive CRP (hs-CRP) measurements. Thrombolysis In Myocardial Infarction Frame Count (TFC) was compared in both groups. TFC was significantly higher in group I compared to group II for each artery including left anterior descending coronary artery (LAD), left circumflex artery (Cx) and right coronary artery (RCA). In group I serum hs-CRP level was significantly higher than that of group II (0.6 ± 0.58 vs. 0.24 ± 0.1 mg/dl., p=0.03). Correlation analysis showed a positive correlation between hs-CRP level and TFC. (For CTFCLAD: r=0.36 p=0.004, for TFCCx: r=0.42, p=0.03, and TFRCRA: r=0.42, p=0.0001, respectively)

Conclusions: Increased hs-CRP level suggests that inflammation may be underlying mechanism of SCF or at least contributes its pathogenesis. Increased hs-CRP level may also be associated with impaired coronary blood flow.

OP-10

EFFECTS OF APOLIPOPROTEIN E GENOTYPES AND OTHER RISK FACTORS ON THE DEVELOPMENT OF CORONARY ARTERY DISEASE IN KAYSERI-TURKEY

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Background: Apolipoprotein E (apoE) plays role in lipoprotein metabolism and lipid transport. Associations between apoE genotypes, coronary artery disease (CAD) and other risk factors have been described by many investigators. The aim of this study was to investigate the role of apoE gene polymorphism and other risk factors in the development of CAD in subjects whose coronary arteries were evaluated by means of coronary angiography.

Genotypes	E3/E3	E4/E4	E3/E2	E4/E2	E4/E3	e4 carrying
CAD (+) n(%)	46 (769,7)	2 (3,0)	8 (12,1)	1 (1,5)	9 (13,6)	12 (18,1)
CAD (-) n(%)	40 (90,9)	0 (0)	1 (2,3)	0 (0)	3 (6,8)	3 (6,8)
p	0,1	-	0,05	-	0,03	0,01

Method: The study population consisted of 66 young patients (mean age 44 ± 1 years, range 26 to 50 years) with diagnosis of acute myocardial infarction and in 44 normal healthy individuals (control group). The apo E gene was amplified by polymerase chain reaction. The plasma lipid levels and other risk factors were also determined in all subjects.

Results: The e4 allele frequencies and genotypes carrying e4 allele were significantly higher in CAD (+) patients. Plasma lipids were increased in CAD (+) cases. When effects of apoE isoform on lipid profiles were evaluated, allele of apoE4 was related to high total and LDL cholesterol levels with statistical significance. No significant association between apoE genotypes and the extent of atherosclerotic lesions in the coronary arteries were found.

Conclusion: We conclude that apoE polymorphism (presence of e4 allele) is associated with the development of CAD in Kayseri, Turkey.

OP-12

RELATIONSHIP BETWEEN INSULIN RESISTANCE AND LEFT VENTRICULAR FUNCTION IN PATIENTS WITH NON-DIABETIC ESSENTIAL HYPERTENSION

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Objective: Both left ventricular hypertrophy and insulin resistance (IR) have often been demonstrated in patients with essential hypertension (EH). Insulin may exert a direct growth-promoting effect on cardiomyocytes. The purpose of this study was to examine the relationship between left ventricular function and IR in patients with EH.

Methods: We enrolled 73 subjects (21 men, age 56 ± 9 years) with never-treated hypertension (BP >135 and/or 85 mmHg), body mass index >30 Kg/m², glycemia at fast >110 mg/dl. Transthoracic echocardiography, and blood samples were performed in all subjects. With respect to IR, homeostasis model assessment (HOMA) was calculated. HOMA-index = Fasting blood sugar (mg/dl) * Immuno-reactive insulin (mU/ml) / 405. Each subject was also examined for LV end-diastolic diameter, septal and posterior wall thickness, LV mass index (LVMI), fractional shortening (FS), mitral inflow velocity pattern, left ventricular outflow velocity pattern and the Doppler-derived index (total ejection isovolumic

index: TEI index of combined systolic and diastolic myocardial performance was calculated by transthoracic echocardiography.

Results: HOMA-index was univariately related to TEI index (r=0.27, p=0.01) and septal wall thickness (IVS) (r=0.29, p=0.01). by Pearson correlation analysis. LVMI, FS and mitral inflow velocity pattern was not related to HOMA index. TEI index (R² =0.30, p=0.002) and IVS (R² =0.16, p=0.015) was significantly related to HOMA-index as an independent variable by stepwise regression analysis.

Conclusions: It was suggested that IR might be contributory to left ventricular dysfunction but was not an important contributor for cardiac hypertrophy in patients with EH.

**OP-13
SILENT CEREBRAL INFARCTION IN PATIENTS WITH DILATED
CARDIOMYOPATHY**

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Objectives: Patients with dilated cardiomyopathy (DCMP) and intracardiac spontaneous echo contrast have an increased risk of thromboembolic events. Prevalence of silent cerebral infarction (SCI) has not been investigated in this patients group. The aim of this study is to investigate (1) the prevalence of SCI detected on cranial magnetic resonance imaging (MRI) in patients with DCMP and (2) to determine the associations between SCI, cardiac spontaneous echo contrast and some hematological parameters.

Methods: Consecutive patients with DCMP (12 female, 29 male; mean age 61±13) underwent cranial MRI, transthoracic and transesophageal echocardiographic examination. Hematological parameters studied were hematocrite, hemoglobin, platelets, sedimentation rate, C-reactive protein and fibrinogen. **Results:** Prevalence of SCI was 35% in the study group. Frequency of SCI according to various SEC locations and grades is presented on the table. Patients with moderate-severe left atrial SEC has significantly higher MRI lesions compared to patients without and mild SEC (p<0.03). Presence of left ventricular and aortic SEC had no statistically significant effect on SCI. Hematocrite, hemoglobin were significantly lower and fibrinogen level was significantly higher in patients with SCI (p=0.006, p=0.008 and p=0.03, respectively). In multivariate analysis, SCI was significantly correlated with the presence of moderate-severe SEC and hematocrite level. Sensitivity, specificity, positive and negative predictivity of moderate-severe SEC for the detection of SCI was 88%, 54%, 56% and 87%, respectively.

Grd 0-1 LASEC	13%
Grd 2 LASEC	56%
LVSEC (-)	30%
LVSEC (+)	56%
AOSEC (-)	29%
AOSEC (+)	55%

Conclusion: In patients with DCMP presence of moderate-severe left atrial SEC is significantly associated with the presence of SCI on cranial MRI.

**PP-15
COMPARISON OF P WAVE DISPERSION AS A PREDICTOR OF
ATRIAL FIBRILLATION BETWEEN A GROUP OF PATIENTS WITH
HYPERTHYROIDISM AND HEALTHY POPULATION**

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We compared P wave dispersions, a novel predictor of atrial fibrillation, of two groups the former composed of patients with hyperthyroidism and the latter composed of healthy subjects in the view of very few studies published previously. Sixty patients (39F, 21M) with hyperthyroidism and 25 healthy subjects (16F, 9M) were randomly selected for the study from the clinics of endocrinology and general medicine. The two groups were compared according to their total (T) T3, total (T) T4, free (F) T3, free (F) T4, TSH, lipids, Pmax, Pmin and Pd values. Pmax, Pmin and Pd values were supplied from the evaluation of 12-lead standard surface electrocardiograms. Unifactorial variant analysis and Pearson's correlation were used in statistical analysis. When the group of patients with hyperthyroidism was evaluated in itself between the values of T13, T14, FT3, FT4, TSH, lipids Pmin and Pd values, there was no statistically significant correlation (p>0, 05). In the control group of healthy subjects was evaluated in itself between the values of T13, T14, FT3, FT4, TSH, lipids Pmin and Pd values, there was no statistically significant correlation (p>0, 05). There is not enough published material about P dispersion in patients with hyperthyroidism. In our study, we compared patients with hyperthyroidism that did not have any episodes of PAF and healthy subjects according to their P dispersions in the view of previous studies. As a result, it is known that hyperthyroidism triggers PAF episode. Increase in P dispersion values can be determined as a predictor of PAF. Our patients with hyperthyroidism are still being followed up for the onset of PAF and the change of their P dispersion values as they reach euthyroidism by medical treatment.

Patients with Hyperthyroidism Healthy Subjects

P max	P min	P d
98, 33±16, 07	44±10, 11	54, 33±14, 19
92, 8±12, -12	62, 8±10, 21	30±10
NS	p<0.0001	p<0, 01

PP-14

**THE COMPARISON OF CARDIOVASCULAR RESPONSE TO
ISOMETRIC AND ISOTONIC EXERCISE IN PATIENTS WITH
CHRONIC ATRIAL FIBRILLATION**

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Treadmill test is isotonic exercise test, it can give clues about cardiovascular responses during activities dominated by dynamic component. Lifting, pushing and squeezing are conditions dominated by static component and they are evaluated by isometric exercise tests. The aim of our study is to evaluate cardiovascular response to isotonic and isometric exercise and exercise tolerance in patients with nonvalvular atrial fibrillation (AF).

Fifty patients (mean age 63.6±10.3 years; 25 female, 25 male) with chronic nonvalvular AF (AF duration >1 year) taken in to the study. Exercise test limited with symptom performed as isotonic exercise. The handgrip test was performed to same patients as isometric exercise. Heart rate (HR) and systolic-diastolic blood pressure (SBP-DBP) were measured at rest and during all stages of exercise. The exercise time and MET value were noted. Exercise time during treadmill test was 7.18±2.65 minutes and MET value was 5.32±1.38. The HR, SBP, HxP values at the end of the first stage and at the end of exercise were significantly higher (p<0.0001). With isometric exercise SBP measured at first minute and exercise were increased significantly (p=0.015 and p=0.011).

Finally, HR response to isotonic exercise was significantly higher compared to isometric exercise in chronic AF patients. SBP increase significantly compared to rest in both exercise, but this increase was much more significant with isotonic exercise.

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**THE EFFECTS OF L-THYROXINE SUPPRESSION THERAPY ON
CARDIAC AUTONOMIC FUNCTIONS IN PATIENTS WITH SIMPLE
GOITER**

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The aim of this study was to evaluate the effects of L-thyroxin suppression therapy on arrhythmia frequency and cardiac autonomic innervations in patients with simple goiter.

Methods: Thirty-two young female patients with simple goiter were randomized into treatment (Group 1, n=16) and control (Group 2, n=16) groups. Group 1 received L-thyroxin to keep TSH levels between 0.1-0.5mmol/L, whereas Group 2 did not receive any drug. Before and 6 months after therapy subjects underwent echocardiography and 24-hour Holter monitorization to evaluate arrhythmia frequency and heart rate variability.

Results: Groups were similar with respect to age, body mass index and baseline serum hormone levels (all p>0.05). The baseline left ventricular (LV) systolic and diastolic function parameters, mean HR, total power (TP, msec²), high frequency (HF, 0.15-0.40 Hz) and low frequency (LF, 0.04-0.15 Hz) parameters of both groups were also similar. No significant alterations was observed in mean HR, frequencies of ventricular and supraventricular arrhythmias with L-thyroxin therapy (p>0.05). After 6 months of thyroxin therapy TP (6790 ± 7549 vs. 14205±12865, p=0.028), LF nu (24.8±6.1 vs. 31.8±13.2, p=0.036) and HF nu (6.8±5.2 vs. 12.6±9.8, p=0.023) increased significantly with a tendency to the reduction in LF/HF ratio (3.7±3.0 vs. 2.7±2.0, p>0.05). As time domain analysis parameters pNN50 and triangular interpolation of RR histogram (ms) did not change after 6 months (p>0.05). L-thyroxin therapy significantly increased stroke volume (p=0.03), stroke index (p=0.024), cardiac output (p=0.048) and cardiac index (p=0.045), whereas all other systolic and diastolic function parameters remained unaltered (all p>0.05).

Conclusion: L-thyroxin suppression therapy significantly increases various systolic LV function parameters, but has no effect on resting HR and arrhythmia frequency. Increased TP, with a tendency for a reduction in parasympathetic/sympathetic ratio after therapy indicates the alteration of autonomic cardiovascular system activity with thyroid hormones.