**Table 1. Prevalence of Abnormal ECG findings and Arrhythmias**

| Variables | 18-39 years n=642 | 40-59 years n=949 | 60- years n=648 | Total n=2239 |
|---|---|---|---|---|
| Pathologic Q wave, n (%) | 7 (1.09) | 18 (1.89) | 15 (2.31) | 40 (1.78) |
| Left axis deviation, n (%) | 17 (2.64) | 68 (7.16) | 86 (13.27) | 171 (7.63) |
| Right axis deviation, n (%) | 4 (0.62) | 2 (0.21) | 8 (1.23) | 14 (0.62) |
| High R wave, n (%) | 26 (4.05) | 46 (4.84) | 59 (9.10) | 131 (5.85) |
| ST depression, n (%) | 8 (1.24) | 13 (1.37) | 19 (2.93) | 40 (1.78) |
| Negative T wave, n (%) | 13 (2.02) | 27 (2.84) | 25 (3.85) | 65 (2.90) |
| Arrhytmias, n (%) | 31 (4.82) | 38 (4.00) | 69 (10.64) | 138 (6.16) |
| Low QRS voltage, n (%) | 20 (3.11) | 37 (3.89) | 12 (1.85) | 69 (3.08) |
| AV blocks, n (%) | 8 (1.24) | 9 (0.94) | 11 (1.69) | 28 (1.25) |
| 1?AV block, n (%) | 3 (0.46) | 7 (0.73) | 7 (1.08) | 17 (0.75) |
| WPW pattern, n (%) | 2 (0.31) | - | - | 2 (0.09) |
| Short PR, n (%) | 3 (0.46) | 2 (0.21) | 3 (0.46) | 8 (0.35) |
| 2?Mobitz type-1, n (%) | - | - | 1 (0.15) | 1 (0.05) |
| IV blocks, n (%) | 29 (4.51) | 66 (6.95) | 77 (11.88) | 172 (7.68) |
| Left bundle branch block, n (%) | 1 (0.15) | 19 (2.00) | 23 (3.54) | 43 (1.92) |
| Right bundle branch block, n (%) | 24 (3.74) | 24 (2.53) | 33 (5.10) | 81 (3.62) |
| Left anterior hemiblock, n (%) | 4 (0.62) | 23 (2.42) | 17 (2.62) | 44 (1.96) |
| Non-spesific blocks, n (%) | - | - | 4 (0.62) | 4 (0.18) |
| Extrasystole, n (%) | 7 (1.09) | 19 (2.00) | 33 (5.09) | 59 (2.63) |
| Atrial fibrilation, n (%) | - | 6 (0.63) | 26 (4.01) | 32 (1.42) |
| Paroxysmal SVT, n (%) | - | 1 (0.10) | 2 (0.31) | 3 (0.13) |
| Sinus tachycardia, n (%) | 23 (3.58) | 9 (0.95) | 3 (0.46) | 35 (1.56) |
| Sinus bradycardia, n (%) | 1 (0.15) | 3 (0.32) | 4 (0.62) | 8 (0.35) |
| Long QT, n (%) | - | - | 1 (0.15) | 1 (0.05) |
| Pathologic Q wave, n (%) | 7 (1.09) | 18 (1.89) | 15 (2.31) | 33 (2.06) |
| Left axis deviation, n (%) | 17 (2.64) | 68 (7.16) | 86 (13.27) | 154 (9.64) |
| Right axis deviation, n (%) | 4 (0.62) | 2 (0.21) | 8 (1.23) | 10 (0.62) |
| High R wave, n (%) | 26 (4.05) | 46 (4.84) | 59 (9.10) | 105 (6.57) |
| ST depression, n (%) | 8 (1.24) | 13 (1.37) | 19 (2.93) | 32 (2.01) |
| Negative T waves, n (%) | 13 (2.02) | 27 (2.84) | 25 (3.85) | 52 (3.25) |
| Left anterior hemiblock | 4 (0.62) | 23 (2.42) | 17 (2.62) | 40 (2.50) |

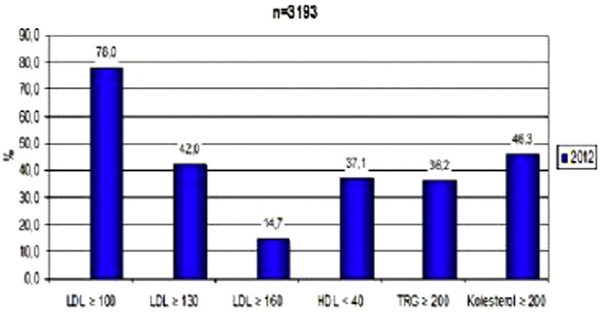
AV; Atrioventricular, IV; Intraventricular, SVT; Supraventricular tachycardia

### OP-016

### The Frequency of Dyslipidemia in Adults in Turkey

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**Objective:** The aim of the study was to determine the frequency of hypercholesterolemia, hypertriglyceridemia and low HDL cholesterol levels in Turkish adults.
**Method:** This study is an analysis of the 3rd year follow up results of Prospective Urban Rural Epidemiological Study (PURE). PURE Turkey is being conducted in urban and rural areas of 8 provinces, which are Istanbul, Kocaeli, Samsun, Aydın, Gaziantep, Malatya, Antalya and Nevşehir since 2008. Blood samples were obtained from 3193 participants (F: 1979; M: 1214, ages between 38-73 years) in 3rd year of the study. Lipid levels were analyzed in serum samples after minimum 8 hours fasting with Cobas Integra 800 analyzer using enzymatic colorimetric method. LDL-cholesterol values were calculated according to Friedewald formula. Cut off values for each lipid parameters are as follows: total cholesterol ≥200 mg/dL, triglycerides ≥150 mg/dL, HDL-cholesterol <40 mg/dL. Three categories were defined for LDL-cholesterol as ≥100 mg/dL, ≥130 mg/dL and ≥160 mg/dL.
**Results:** The dyslipidemia rates were 46,3% for hypercholesterolemia, 36,2% for hypertriglyceridemia and 37,1% for low HDL-cholesterol. Seventy-eight percent of participants had LDL-cholesterol ≥100 mg/dL. The frequency of LDL-cholesterol levels ≥130 mg/dL and ≥160 mg/dL were 42% and 14,7% respectively.
**Conclusion:** Nearly half of the population aged between 38-73 years had hypercholesterolemia in Turkey. Obesity and metabolic syndrome, which were reported with very high prevalence in Turkish population may be the common cause of substantially high and similar rates of hypertriglyceridemia and low HDL-cholesterol levels since all are closely linked with insulin resistance.




### OP-017

### A Genetic Variant Associated with Lipoprotein(a) Level and Coronary Disease Risk in Turkish Adults

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**Aim:** Lipoprotein(a) [Lp(a)] level is an established risk factor for coronary heart disease (CHD) and has been implicated in carotid artery disease. The relationship between genetic variation in the LPA gene region and CHD risk remains unknown. In this study, therefore, we aimed to investigate the effects of the rs10455872 polymorphism in the LPA gene locus on Lp(a) levels and risk factors for CHD in the Turkish population.
**Method:** We examined one single-nucleotide polymorphism (SNP) in LPA gene in the Turkish Adult Risk Factor (TARF) Study DNA bank which has been established between 2004-2010 years. The sample was comprised of 2252 Turkish adults. Genotyping was performed by high throughput system, Real-Time PCR LC480 device. The association between biochemical, clinical parameters and the polymorphism have been analyzed using SPSS software. For continuous variables, ANOVA T-test was used, whereas $X^2$ analysis was performed for categoricals.
**Results:** The distribution of the LPA rs10455872 polymorphism in this adult population was 97% (n=2185), 3% (n=66) and 0% (n=1) for the AA, AG and GG genotypes, respectively. The G allele frequency was found to be 0.03. The rs10455872 in LPA gene locus was most strongly associated with higher Lp(a) levels ($p<0.0001$). In addition, the LPA rs10455872 AG genotype was correlated higher total cholesterol and LDL-C levels in Turkish adults ($p<0.05$).
**Conclusion:** The LPA rs10455872 AG genotype appears to be a risk factor against CHD by increasing the Lp(a), total cholesterol and LDL-C levels.

### OP-018

### The Prevalence and Clinical Characteristics of Mitral Valve Prolapse in a Large Population-Based Epidemiologic Study

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**Background:** Mitral valve prolapse (MVP) is the most common cardiac valvular abnormality in industrialized countries. Its prevalence has been estimated around 2.4%, ranging from 2% to 4%. The purpose of this study was to determine the prevalence, demographic, clinical and echocardiographic characteristics of MVP in a large population-based epidemiologic study.
**Methods:** A total of 2298 subjects with a mean age of 50 (age range 18–92) living in Melen valley, which is inhabitant of 21 000 people were interviewed. An echocardiography machine utilizing 2-5 MHz probe specific for field studies (M Turbo, SonoSite Inc., Bothell, WA, USA) was used. The displacement of each leaflet was measured in the parasternal long-axis view above a line connecting the mid portions of the annular hinge points. The thickness of the mitral valve was measured by M mode recording. Each leaflet was measured, and maximal thickness was used for categorization. The degree of mitral regurgitation was assessed by the method recommend by current guideline. Thyroid ultrasonography: It was performed and interpreted by the same experienced physician, using the same equipment with a 5–12-MHz linear-array transducer (M Turbo, SonoSite Inc., Bothell, WA, USA). Size of the thyroid lobes and characteristics of thyroid parenchyma and nodules were determined. Goiter prevalence was defined according to Gutekunst's criteria. Gutekunst reference values for adults (>18 cm3 in women and >25 cm3 in men) were used. Hyper and hypothyroidism: A thyroid stimulating hormone (TSH) level of <0.35 μIU/mL was accepted as hyperthyroidism and >4.5 μIU/mL as hypothyroidism. Major depression: The questionnaire included an extensive list of questions that operationalize DSM-IV criteria for major depression. The participants who refused echocardiography measurement and had poor image quality and blood sampling were excluded

**Results:** The final cohort included 2,228 participants (1,424 women 804 men, with a mean age of 49±15). The echocardiographic prevalence of MVP was 0.36%. The prevalence of MVP was 0.35% in female (n=5) and 0.37% in male (n=3) patients. The mean age of patients with MVP was 39±10.7 years (22-53). Four patients (50%) had prolapse of the anterior leaflet, 1 (12.5%) had prolapse of the posterior leaflet and 2 (25%) had prolapse of both anterior and posterior leaflet. Only one patient had mild mitral regurgitation on color Doppler echocardiography. Baseline demographic and clinical characteristics of patients; 1 (12.5%) had hypertension, 3 (37.5%) had depression, 1 (12.5%) had migraine, 1 (12.5%) had diabetes mellitus, 1 (12.5%) had diastolic dysfunction, 3 (37.5%) had nodular goiter, 2 (25%) had hyperthyroidism. During the follow-up of 36 months, no major adverse events occurred.
**Conclusion:** This finding suggests that the prevalence of MVP was lower than previously studies and there might be a relationship between MVP and goiter, and depression.

### OP-019

### Depression and Cardiovascular Risk Factors in Pit Miners

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**Intoduction:** A connection between cardiovascular diseases and metabolic syndrome with depression has been proven. The goal of the research is to determine the prevalence of depression in coalmine pit miners in Banovici, presence and grouping of cardiovascular risk factors in depressed miners, and the impact of depression on overall cardiovascular risk.
**Material-Methods:** The study has been conducted on 492 workers at the mine pit. For each of them the score for depression has been determined according to the Beck's scale, and the blood pressure has been measured, as well as BMI, waist, total cholesterol, HDL and LDL cholesterol, triglycerides, blood sugar; and smoking status has been determined. The metabolic syndrome has been defined according to the criteria of the National Educational program about cholesterol - the third panel on the treatment of adults (NCEP ATP III). According to SCORE scoring system, the overall 10-year cardiovascular risk on the respondents has been determined.
**Results:** Out of 492 respondents 34.34% of them have depression. All measured risk factors other than waist size are more common among depressed miners. There was a statistically significant difference in age (p=0.003), smoking status (p=0.02) and the value of blood pressure (p=0.0001) in depressed miners. Metabolic syndrome was present in 44.97% of depressed miners in whom there was a greater overall cardiovascular risk (4 (0-20), p=0,0001. Among respondents, in the groups with and without depression, most of them have combined 5 risk factors, but among depressed individuals 21.3% of them have 6, and 11.83% of them have 7 risk factors, while in the group without depression 14,86% is with 6 factors and 6,19% with 7 risk factors.
**Conclusion:** There is a high prevalence of developing depression with emphasized tendency of grouping of risk factors, a higher presence of the metabolic syndrome and higher total cardiovascular risk among depressed miners.

## Cardiac Imaging

## Saturday, October 26, 2013, 15:45 PM–17:00 PM
## Hall: LEFKOŞA

Abstract nos: 20-25

### OP-020

### Automated Functional Imaging in Atrioventricular Delay Time Optimization in Patients with Dual Chamber Pacemakers

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**Background:** Optimization of atrioventricular (AV) delay time has positive effects on left ventricular functions in patients with DDD pacemaker. Although echocardiographic methods are still the most commonly used ones for the optimization of AV delay time, the gold standard method used for optimization is still debated. Automated functional imaging (AFI) is a strain calculation method, that is based on speckle tracking technique and it makes strain calculation faster and easier. In our study, we aimed to evaluate the effect of different AV delay times on left ventricle (LV) systolic and diastolic functions by using brain natriuretic peptide (BNP) levels, pulse wave Doppler (PWD) echocardiography and AFI in patients with DDD pacemaker and preserved LV systolic function.
**Methods:** The study population consisted of 40 patients with DDD pacemaker implanted for third degree AV block and preserved left ventricular systolic function (19 men and 21 women; mean age 64,3±10,9 years). Patients with implantable cardioverter defibrillator (ICD), biventricular pacemaker, LV systolic dysfunction (ejection fraction <%50), other moderate or severe organ failure (e.g. chronic liver disease, renal insufficiency), known or suspected coronary artery disease, moderate or severe valvular heart disease, atrial fibrillation or atrial flutter, anemia and suboptimal echocardiographic images were excluded from the study. During each pacing period, blood samples were taken for measurement of brain natriuretic peptide (BNP) levels, telemetric and echocardiographic evaluations were performed to all patients. Also peak systolic global longitudinal strain (PSGLS) was calculated by using AFI method.
**Results:** The baseline clinical and echocardiographic data of the patients are presented in Table 1. No significant differences except for left ventricular outflow tract-velocity time integral (LVOT-VTI) were observed in pulse wave Doppler parameters with different AV delay times. LVOT-VTI values, PSGLS and BNP levels were better with 150 and 200 ms AV delay times when compared to 100 ms (for 100-150 ms: 0,017, and for 100-200 ms p:0,013; for 100-150 ms and for 100-200 ms p<0,001; for 100-150 ms p:0,001, and for 100-200 ms p:<0,001 respectively) (Table 2 and 3).

Our results showed that there were no significant changes on LV diastolic functions by the setting AV delay. In addition, when AV delay prolonged in physiological limits, BNP level was decreased and PSGLS and LVOT-VTI values were increased.
**Conclusion:** In patients with implanted DDD pacemaker and preserved left ventricular systolic function, increasing AV delay time has beneficial effects on left ventricular systolic performance in acute phase, without deteriorating diastolic function, as shown by AFI method in our study.

**Table 1. Baseline clinical and echocardiographic data of the patients**

| Parameters | |
|---|---|
| Age (mean ± SD), years | 64,3±10,9 |
| Gender | |
| Male, (%) | 19 (47,5) |
| Female, (%) | 21 (52,5) |
| Hypertension, (%) | 25 (62,5) |
| Diabetes mellitus, (%) | 12 (30) |
| Hyperlipidemia, (%) | 8 (20) |
| Cigarette, (%) | 2 (5) |
| Pacing period, months | 18,8±11,5 |
| Left ventricular EF, % | 61,5±6,0 |
| LVEDd, mm | 46,3±3,4 |
| LVESd, mm | 30,5±2,9 |
| Left atrium, mm | 35,3±3,1 |
| Interventricular septum, mm | 10,1±2,3 |
| Posterior wall, mm | 9,4±2,2 |

SD= standard deviation, EF= ejection fraction, LVEDd= left ventricule end-diastolic diameter, LVESd= left ventricule end-systolic diameter

**Table 2. Pulse wave Doppler parameters on different AV delay times**

| | 100 ms | 150 ms | 200 ms | p overall |
|---|---|---|---|---|
| E, m/sn | 0,51 (0,3-0,8) | 0,58 (0,3-0,9) | 0,54 (0,3-0,8) | 0,72 |
| A, m/sn | 0,82 (0,4-1,3) | 0,84 (0,5-1,3) | 0,84 (0,4-1,3) | 0,27 |
| E/A | 0,67 (0,43-1,5) | 0,67 (0,5-1,29) | 0,67 (0,45-1,5) | 0,43 |
| IVRT, ms | 109,3±14,0 | 113,6±17 | 113,6±19,2 | 0,10 |

AV=atrioventricular, E= early diastolic peak flow velocity, A= late diastolic peak flow velocity, E/A= the ratio of early and late diastolic peak flow velocity, IVRT=isovolumetric relaxation time

**Table 3. BNP, PSGLS, LVOT-VTI values at different AV delay times**

| | 100 ms | 150 ms | 200 ms | p Overall | p 100-150 ms | p 100-200 ms | p 150-200 ms |
|---|---|---|---|---|---|---|---|
| BNP, mg/dl | 43,7 (5,4-95) | 34,7 (5,1-85,3) | 29,5 (8,4-94,6) | 0,017 | 0,001 | <0,001 | 0,082 |
| PSGLS, % | 12,6±1,7 | 14,6±2,3 | 15,5±2,6 | <0,001 | <0,001 | <0,001 | 0,095 |
| LVOT-VTI, cm | 23,1±3,6 | 24,4±4,1 | 24,4±4,0 | 0,002 | 0,017 | 0,013 | 1,00 |

BNP= brain natriuretic peptide, PSGLS= peak systolic global longitudinal strain, LVOT-VTI= left ventricule outflow tract-velocity time index, AV= atrioventricular