

## CORONARY ARTERY DISEASE

### D2 - EFFECTS OF HOME-BASED CARDIAC EXERCISE PROGRAM ON THE EXERCISE TOLERANCE, SERUM LIPID VALUES AND SELF-EFFICACY OF CORONARY ARTERY PATIENTS

Senuzun F.<sup>1</sup>, Fadiloglu C.<sup>2</sup>, Burke L.M.<sup>3</sup>, Zoghi M.<sup>4</sup>, Payzin S.<sup>4</sup>

<sup>1</sup>Ege University Izmir Atatürk School of Health, Izmir Turkey,

<sup>2</sup>Ege University School of Nursing, Izmir Turkey,

<sup>3</sup>University of Pittsburgh School of Nursing, PA, US,

<sup>4</sup>Ege University School of Medicine, Department of Cardiology, Izmir Turkey

**OBJECTIVES:** The purpose of this study was to explore the effects of a home-based exercise program on exercise tolerance, serum lipid levels, and self-efficacy of coronary patients in Turkey. Banduras' Self-Efficacy Theory was the framework used for the study  
**METHODS:** This prospective, randomized controlled study was conducted in 60 patients who were randomly assigned to the control (C; n:30) and cardiac rehabilitation exercise program groups (CREP; n:30). CREP group followed a Phase II exercise program. The dependent variables were the change in exercise tolerance, serum lipid values, and self efficacy over the time.

**RESULTS:** Mean age of participants was 53.7years, 91.6% were men, and 98.3% were married. The differential findings before cardiac rehabilitation exercise program in CREP and C groups on exercise capacity (p=.949), total cholesterol (p=.283), triglycerides (p=.723), LDL-cholesterol (p=.467), and HDL-cholesterol (p=.128) were similar. At the completion of the 12-week exercise program, the exercise capacity (p=.000), total cholesterol (p=.004), triglycerides (p=.048), HDL cholesterol (p=.001), LDL cholesterol (p=.039) of the CREP group were significantly improved. Mean self efficacy scores of the samples in CREP and C Groups were similar before the initiation of the cardiac exercise program (p=.695); however, the self-efficacy scores of the CREP Group significantly improved at the end of the 12-week program (p=.000).

**CONCLUSIONS:** The results of this first study in Turkish population suggested that home based cardiac exercise program revealed positive effects on the exercise capacity, blood lipid profiles, and self-efficacy in coronary artery patients. **REF80**

### D1 - CIRCULATING PREGNANCY-ASSOCIATED PLASMA PROTEIN A PREDICTS EARLY MYOCARDIAL INFARCTION IN PATIENTS WITH UNSTABLE ANGINA PECTORIS

Turkoglu A.<sup>1</sup>, Tumuklu M.<sup>2</sup>, Zoghi M.<sup>1</sup>, Soydan I.<sup>1</sup>

<sup>1</sup>Department Cardiology, Ege University, Faculty of Medicine, Izmir, Turkey,

<sup>2</sup>Department Cardiology, Gaziosmanpasa University, Faculty of Medicine, Tokat, Turkey

**OBJECTIVES:** Circulating markers indicating the instability of atherosclerotic plaques could have diagnostic value in unstable angina or acute myocardial infarction. Pregnancy associated plasma protein A(PAPP-A), a novel marker of atherosclerotic plaque activity has recently been shown to be associated with acute coronary syndromes (ACS). The goal of this study was to investigate the value of PAPP-A, in progression of myocardial infarction in patient admitted with unstable angina pectoris.

**METHODS:** Fortyfive consecutive hospitalized ACS patients were included, of whom 28 men and 17 women; mean age, 57±11.6 years. After admittance, PAPP-A level; and on admittance and every 6 hours up to 72 hours serial Creatinine Kinase-Myocardial Band(CK-MB) determination were performed. Progression to Myocardial Infarction(MI) were accepted, if serial CK-MB levels at least two-fold increased from the baseline value. The study population were grouped into group A(progressed to MI), and group B(no progression to MI). In all patients after 72 hours coronary angiography was performed.

**RESULTS:** There were no statistically significant difference according to age, gender, medical history, drug usage, diffuseness of coronary artery diseases between groups. We found significantly high PAPP-A level in group A (Group A; 27.3±9.4 mIU/L, Group B 17.4±3.6 mIU/L p<0,001). There were also significant correlation between diffuseness of coronary artery disease and PAP-A levels (In patients with one vessel disease; PAP-A 19.2±4.8 mIU/L, multi vessel disease; 26.6±10.3 mIU/L p<0,001).

**CONCLUSIONS:** Serum PAPP-A level may be a good predictor for determining MI progression in unstable angina pectoris when evaluate on admittance **REF54**

### D3 - SLOW CORONARY FLOW PHENOMENON AND ITS RELATION WITH POSITIVE ARTERIAL REMODELLING

Avsar O.<sup>1</sup>, Demir I.<sup>1</sup>, Ekiz O.<sup>1</sup>, Basarici I.<sup>1</sup>, Yalcinkaya S.<sup>1</sup>, Bayezid O.<sup>2</sup>

<sup>1</sup>Department of Cardiology, Akdeniz University School of Medicine, Antalya, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Akdeniz University School of Medicine, Antalya, Turkey

**OBJECTIVES:** Glagov's positive remodeling hypothesis for coronary arteries is a well known fact documented by intravascular ultrasound studies. Thereby, normal coronary arteries with slow flow may reflect early stages of atherosclerosis. We aimed to investigate this hypothesis and relationship of slow coronary flow and positive arterial remodeling, using B-mode carotid ultrasound as a surrogate marker of atherosclerosis.

**METHODS:** Two hundred and three patients with normal coronary angiography were enrolled and separated into two groups as normal(n=106) and slow flow(n=97) according to corrected TIMI frame counts(at least in one coronary artery). Common carotid artery diameters were calculated by high resolution B-mode ultrasound via computer based software and compared between two groups.

**RESULTS:** Mean age of the patients was 54±9years and 45,8% were males. Demographic characteristics were similar except body mass index and ratio of hypertension being significantly higher(p<0,05) in slow flow group. Also fasting plasma glucose, total and LDL cholesterol levels were higher in slow flow group(p<0,05)(Table1). Interadventitial carotid artery diameter was significantly(p<0,001) higher in slow flow group compared to normals(Graphic1). Also univariate analysis revealed that the carotid artery diameter was significantly(p<0,01) correlated with TIMI frame counts of three coronary arteries.

**CONCLUSIONS:** This study showed that carotid arterial diameter was higher in patients with slow coronary flow compared to normal flow group. As this increase in carotid diameter may be associated with positive remodeling in atherosclerotic process; regarding the systemic nature of atherosclerosis it may be suggested that slow coronary flow phenomenon may reflect subclinical atherosclerosis despite normal coronary lumen in angiography. Although intravascular coronary ultrasound studies are needed to confirm these results. **REF106**

**D4 - RELATIONSHIP OF CAROTID INTIMA MEDIA THICKNESS AND POSITIVE ARTERIAL REMODELING : ULTRASONOGRAPHIC EVALUATION OF SUBCLINICAL ATHEROSCLEROSIS**

Avsar O.<sup>1</sup>, Demir I.<sup>1</sup>, Ekiz O.<sup>1</sup>, Basarici I.<sup>1</sup>, Yalcinkaya S.<sup>1</sup>, Bayezid O.<sup>2</sup>

<sup>1</sup>Department of Cardiology, Akdeniz University School of Medicine, Antalya, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Akdeniz University School of Medicine, Antalya, Turkey

**OBJECTIVES:** This study was planned to investigate subclinical atherosclerosis and vascular remodelling ultrasonographically by carotid intima media thickness(CIMT) as a surrogate marker in patients without significant coronary arterial disease.

**METHODS:** Study population consisted of outpatients undergoing coronary angiography for suspected coronary artery disease and according to angiography results 203 patients with normal coronary arteries were enrolled. These patients underwent high resolution B-mode ultrasound(performed by a cardiologist blinded to angiography results) after angiography. Distal common carotid arteries were investigated and average of both sides were used for analysis. Interadventitial diameter and CIMT were calculated by a computer based software using far-wall method for CIMT. Regarding the maximum CIMT cut-off value as 0,950mm, patients were divided into normal IMT(Group A;n=134) and thickened CIMT(Group B;n=69) groups.

**RESULTS:** Mean age of patients was 54±9 years and 45,8% were males. There were no difference between two groups by means of atherosclerotic risk factors except age(p< 0,05). No patient had any plaque in carotid arteries (defined as CIMT ≥ 1,3 mm). Carotid arterial diameter was significantly higher in Group B(7,314±0,826mm) compared to Group A(6,291±0,763mm)(p<0,001). Besides we found out that carotid diameter was significantly correlated with CIMT(r=0,527;p<0,001).

**CONCLUSIONS:** The finding that arterial diameter was higher in the thickened CIMT group and correlation with CIMT suggests that this increase in carotid diameter may reflect positive remodelling in atherosclerotic process. So we conclude that although manifest luminal lesions are not evident, thickened CIMT should be regarded as a surrogate but an 'early' marker of atherosclerosis and taken into account when deciding patient's management. **REF107**

**D5 - DETECTION OF CALCIFIED ATHEROSCLEROTIC PLAQUE BY 16-CHANNELS MULTIDETECTOR COMPUTED TOMOGRAPHY ANGIOGRAPHY AND COMPARISON WITH CONVENTIONAL CORONARY ANGIOGRAPHY IN PATIENTS WITH END-STAGE RENAL DISEASE**

Dogan O.F.<sup>1</sup>, Hazirolan T.<sup>2</sup>, Duman U.<sup>1</sup>, Karcaaltincab M.<sup>2</sup>, Akata D.<sup>2</sup>, Arici M.<sup>3</sup>, Turgan C.<sup>3</sup>, Demircin M.<sup>1</sup>, Boke E.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Hacettepe University Medical School, Ankara, Turkey

<sup>2</sup>Department of Radiology, Hacettepe University Medical School, Ankara, Turkey

<sup>3</sup>Department of Nephrology, Hacettepe University Medical School, Ankara, Turkey

**OBJECTIVES:** Cardiovascular morbidity and mortality and accelerated atherosclerotic processes are highly important in end-stage renal disease (ESRD) patients. The Multidetector computed tomography angiography (MDCTA) is increasingly being used as a noninvasive method for assessing coronary artery disease. The objective of our study was to investigate the value of a vascular calcification scoring and risk stratification in patients with ESRD, and was to compare interventional angiography and the CAC scoring in this particular group.

**METHODS:** A total of 50 patients were included in this study. Lipid profile, blood calcium and phosphorus levels, blood homocysteine levels, ages, presence of diabetes mellitus (DM) were recorded as risk factors. Conventional angiography was performed in the 13 subjects.

**RESULTS:** CAC scoring was recorded between 0 to 25% of percentile in Group I, whereas it was 50 to 75% of percentile in group II, and 75 to 95% in group III. The second and the third group of cases, totally 13 cases, required conventional angiography in the clinical follow-up. In the same groups, the level of blood urea nitrogen, calcium and phosphorus levels were more highly than the first group. Diabetes and the older age was found the most common cause of coronary artery disease as a risk factor.

**CONCLUSIONS:** The study findings shows that MDCT may be used for detection of coronary artery disease especially in cases with the described risk factors. On the other hand, the defined risk factors may be highly predictive for future cardiac events in ESRF patients. In comparison with angiography, we found a high sensitivity to detect coronary artery segments containing atherosclerotic plaque in patients with or without significant coronary artery stenoses. **REF119**

**D6 - PLASMA LEVEL OF LIPOPROTEIN (A) IS INVERSELY ASSOCIATED WITH THE DEVELOPMENT OF COLLATERAL CIRCULATION IN PATIENTS WITH SINGLE-VESSEL CORONARY ARTERY DISEASE**

Aras D.<sup>1</sup>, Geyik B.<sup>1</sup>, Topaloglu S.<sup>1</sup>, Ayaz S.<sup>2</sup>, Maden O.<sup>1</sup>, Cagli K.E.<sup>1</sup>, Balci M.<sup>3</sup>, Ozeke O.<sup>1</sup>, Devenci B.<sup>1</sup>, Yildiz A.<sup>1</sup>, Kisacik H.L.<sup>1</sup>, Korkmaz S.<sup>1</sup>

<sup>1</sup>Department of Cardiology, Turkiye Yuksek Ihtisas Hospital, Ankara, Turkey

<sup>2</sup>Department of Hematology, Turkiye Yuksek Ihtisas Hospital, Ankara, Turkey

<sup>3</sup>Department of Immunology, Turkiye Yuksek Ihtisas Hospital, Ankara, Turkey

**OBJECTIVES:** To determine whether the plasma level of Lp(a) is associated with the development of collaterals in patients with single-vessel coronary artery disease (CAD) and whether Lp(a) has any effect on a potent angiogenic growth factor, vascular endothelial cell growth factor (VEGF).

**METHODS:** Sixty patients with stable angina pectoris and angiographic single-vessel CAD were classified by Rentrop' collateral classification method. In each patient the serum level of Lp(a) and VEGF were measured by enzyme linked immunosorbent assay.

**RESULTS:** Patients with poorly developed collaterals (Group 1, n = 31, Rentrop' class 0 and 1) had significantly higher level of Lp(a) than the patients with well-developed collaterals (Group 2, n = 29, Rentrop's class 2 and 3) (34±19 mg/dl vs. 20±12 mg/dl, p <0.001). Conversely, level of VEGF was found to be significantly lower in Group 1. In group 2, duration of angina pectoris was significantly longer. While serum Lp(a) levels showed a significant negative correlation with VEGF levels (r = -0.708, p<0.0001), it was in positive direction between duration of angina and VEGF levels (r = 0.382, p = 0.0003). Multivariate analysis revealed that high level of Lp(a) had a significant negative effect on development of collaterals whereas the duration of angina had a positive one.

**CONCLUSIONS:** This study demonstrated for the first time that in CAD patients, poor development of collateral circulation is associated with a high level of serum Lp(a). Lp(a) possibly exerts this effect via inhibition of the VEGF. **REF147**

**D7 - DNA DAMAGE AND PLASMA TOTAL ANTIOXIDANT CAPACITY IN PATIENTS WITH SLOW CORONARY ARTERY FLOW**

Demirbag R.<sup>3</sup>, Yilmaz R.<sup>1</sup>, Gur M.<sup>1</sup>, Kunt A.S.<sup>2</sup>, Kocyigit A.<sup>3</sup>, Celik H.<sup>3</sup>, Guzel S.<sup>3</sup>, Selek S.<sup>3</sup>

<sup>1</sup>Harran University, Faculty of Medicine, Department of Cardiology, Sanliurfa, Turkey

<sup>2</sup>Harran University, Faculty of Medicine, Department of Cardiovascular Surgery, Sanliurfa, Turkey

<sup>3</sup>Harran University, Faculty of Medicine, Department of Clinical Biochemistry Sanliurfa, Turkey

**OBJECTIVES:** Although clinical and pathological features of slow coronary artery flow (SCAF) have been previously described, the underlying pathophysiology has not been fully elucidated. The aim of this study was to investigate the association between lymphocyte DNA damage and SCAF.

**METHODS:** The study population contained 23 patients with voluntary SCAF, and 23 voluntary healthy subjects. DNA damage was assessed by alkaline comet assay in peripheral lymphocyte and plasma levels of total antioxidant capacity (TAC) were determined by using a novel automated measurement method.

**RESULTS:** In SCAF patients, DNA damage was no significantly higher than in control subjects (106.6 ± 38.2 AU vs. 80.5 ± 51.7 AU; p=0.055, respectively). The TAC levels in patients with SCAF were lower than control group (1.32 ± 0.32 mmol Trolox equiv./L vs. 1.35 ± 0.26 mmol Trolox equiv./L, p=0.667, respectively). Lymphocytes DNA damage values in patients with SCAF showed positive correlation with age (r=0.775, p<0.001) and negative correlation with TAC (r=-0.791, p<0.001) and HDL cholesterol levels (r= 0.456, p= 0.029). In multiple linear regression analysis, TAC and age were independent predictors of DNA damage in patients with SCAF.

**CONCLUSIONS:** These findings indicate that lymphocyte DNA damage levels do not increase and TAC values do not decrease in patients with SCAF. Therefore, DNA damage may not be useful for the identification of patients with SCAF. **REF9**

**D8 - ANOMALOUS LEFT MAIN CORONARY ARTERY, RUDIMENTARY CIRCUMFLEX AND SEVERE CORONARY ARTERY STENOSIS**

Resatoglu A.<sup>1</sup>, Peker O.<sup>2</sup>, Ozaydin M.<sup>3</sup>, Yener A.<sup>4</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Ozel Cankaya Hastanesi, Ankara, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey

<sup>3</sup>Department of Cardiology, Suleyman Demirel University, Isparta, Turkey

<sup>4</sup>Department of Cardiovascular Surgery, Ozel Cankaya Hastanesi, Ankara, Turkey

**OBJECTIVES:** Coronary artery anomalies are discovered either by selective coronary angiography or at autopsy. We report an unusual case of anomalous coronary artery circulation.

**CASE:** A 72-year-old female with a history of arterial hypertension presented with stable angina pectoris. There is no specific change on the ECG. Selective coronary angiography revealed an anomalous origin of left main coronary artery (LMCA) from right coronary sinus and rudimentary circumflex artery (Cx). Additionally 70% occlusions after 1st and 2nd diagonals on left anterior descending artery (LAD) and 85% occlusion on right coronary artery (RCA) were identified. LMCA had a septal course. Ventriculography was within normal limits. CABG was planned. Left internal mammary artery to LAD and vena saphena magna to RCA bypass grafting procedure was performed successfully under cardiopulmonary bypass and without any complication. Our patient was well and symptom free in her postoperative 6-month control.

**CONCLUSIONS:** A patient with a rare coronary anomaly of the origination of the LMCA from the right coronary sinus associated with rudimentary Cx and severe coronary stenosis who has been revascularized with CABG was reported. **REF128**

**D9 - THE CURRENT STATUS OF RISK FACTORS AFTER CORONARY ARTERY BYPASS GRAFT SURGERY**

Toktas G., Tur A., Emre A., Uzdogan A., Yildirim A.

Department of Cardiology, Baskent University, Ankara, Turkey

**OBJECTIVES:** Current guidelines suggest well defined upper limits for lipid profile in secondary prevention after coronary artery bypass graft surgery (CABG). In this study, we aimed to investigate the risk factor status after CABG.

**METHODS:** Sixty patients with a history of CABG were included. Demographic measures and major cardiovascular risk factors were noted. Presence of metabolic syndrome was described according to ATP-III criteria. A detailed history of CABG and major cardiac events (angina, myocardial infarction, revascularization, death) after CABG were taken. Fasting blood samples were obtained to measure total cholesterol (T-C), low-density lipoprotein (LDL-C), high-density lipoprotein (HDL-C) and triglyceride (TG).

**RESULTS:** The mean age was of the study population was 68,3±7,2yrs (45M, 15F). Forty-four (73%) were hypertensive, 21 (35%) were diabetic and 25 (42%) had metabolic syndrome. Eighteen patients (30%) had two and 29 (49%) had three vessel CABG before 90.1±67.2 months. During this interval 5 (18%) had myocardial infarction, 31 (52%) had recurrent angina, 32 (53%) had coronary angiography and 16 (27%) had repeat coronary revascularization. Plasma T-C, LDL-C, TG and HDL-C levels were 185,3±41,7mg/dl, 112,5±37,1mg/dl, 128,6±54,0mg/dl and 45.6±10.5mg/dl respectively. Accordingly 30%, 60% and 27% of the study population had mean plasma T-C, LDL-C and TG levels higher than 200mg/dl, 100mg/dl and 150mg/dl respectively, described by ATP III as the upper allowable limits for a patient with CAD.

**CONCLUSIONS:** Our results indicate that risk factor status of CAD patients after CABG remain unacceptably high. Current guidelines suggest well-defined upper limits and with each update are bringing these limits down to lower levels. However, in practice the problem is their applicability. **REF114**

**D10 - THE EFFECT OF DIFFERENT PERCUTANEOUS CORONARY INTERVENTION TECHNIQUES ON INFLAMMATORY RESPONSE**

Duygu H., Turk U., Zoghi M., Kirilmaz B., Turkoglu C.

Department of Cardiology, Ege University Medical Faculty, Izmir, Turkey

**OBJECTIVES:** High-sensitive C-reactive protein (hs-CRP) is an important indicator of the inflammatory process and an important predictor of vascular risk. Percutaneous coronary interventions (PCI) cause local and systemic inflammatory responses with their mechanical effects on atheroma plaque. In this study, the relationship between PCI technique and triggered inflammatory response was assessed with hs-CRP levels measured before and 24 hours after the intervention.

**METHODS AND RESULTS:** 87 patients (88% males, mean age: 56±8 years) with stable angina pectoris who underwent elective PCI were included to study. Blood samples were taken from the patients before and 24 hours after the intervention. Twenty-seven patients underwent only angioplasty (group I), 40 patients angioplasty and stent implantation (group II) and 20 patients underwent atherectomy and stent implantation (group III). Increase in the levels of hs-CRP compared to the baseline was significantly higher in group II than group I (group II: 28±7 mg/l, group I: 11±2 mg/dl, p<0.05). Increase in hs-CRP levels in the group III (42±9 mg/dl) was more remarkable compared to the 2 other groups (p<0.05). Nine patients in the group I underwent angioplasty due to in-stent restenosis. Increase in hs-CRP levels were found to be lower in the patients with in-stent restenosis when the patients in the group I were compared for the increase in hs-CRP levels following PCI for in-stent and de novo lesions (p>0.05).

**CONCLUSIONS:** Inflammatory response due to the mechanical injury in the coronary vessels caused by the stents, angioplasty and atherectomy are of different extent. This might be related to the early and late complications following percutaneous coronary intervention. Applying intense anti-inflammatory therapy for the interventions that may cause intense inflammatory response in the coronary vessels may be beneficial for probable complications. **REF59**

**D11 - PLASMA LEVELS OF C-REACTIVE PROTEIN DO NOT PREDICT CORONARY ANGIOGRAPHIC RESTENOSIS IN PATIENTS WITH STABLE CORONARY ARTERY DISEASE**

Duygu H., Turk U., Zoghi M., Yavuzgil O., Turkoglu C.

Department of Cardiology, Ege University Medical Faculty, Izmir, Turkey

**OBJECTIVES:** The inflammatory process plays an important role in atherogenesis and restenosis after percutaneous coronary intervention. Whether inflammatory markers are predictors of subsequent restenosis were prospectively tested in 20 consecutive patients with stable coronary artery disease in this study.

**METHODS:** A total of 20 consecutive patients (mean age: 57±9, 25% female) with stable coronary artery disease who underwent elective PCI (balloon angioplasty and bare stent implantation) were included to the study. Angiographic follow-up was performed in all patients at 6 months. High-sensitive C-reactive protein (hs-CRP) level were measured before and 24 hours after the intervention and at six months before the control coronary angiography.

**RESULTS:** Restenosis occurred in 8 patients (40%). Baseline hs-CRP levels were 12±8 mg/L versus 10±7 mg/L in the patent and restenosis groups (p=0.3). hs-CRP levels at the time of angiographic follow-up were found to be similar in both groups (6±3 mg/L versus 8±4 mg/L, p=0.3). The levels 24 h after the PCI were not different between the two groups (12±7 mg/L versus 9±7 mg/L, p=0,6). There was not the relationship between restenotic narrowing percentage and degree of inflammation.

**CONCLUSIONS:** Pre-post intervention and at six months follow-up hs-CRP levels in stable angina subjects undergoing coronary artery stent deployment did not correlate with the development of in-stent restenosis. **REF58**

**D12 - DEMOGRAPHIC, CLINICAL AND ANGIOGRAPHIC CHARACTERISTICS OF PATIENTS WITH MYOCARDIAL BRIDGE.**

Duygu H., Zoghi M., Nalbantgil S., Ozerkan F., Turk U., Kirilmaz B., Akilli A., Akin M.

*Department of Cardiology, Ege University Medical Faculty, Izmir, Turkey*

**OBJECTIVES:** The present study aimed at investigating demographical, clinical and angiographic characteristics of the patients with MB found on coronary angiography.

**METHODS:** We included 71 (0.01%) patients diagnosed to have MB of 6272 patients underwent coronary angiography in our institution between January 1999 and September 2003. Demographical, clinical and angiographic characteristics of the patients were examined. Based on the findings on angiography, the patients were subdivided into group A (n=41) and group B (n=30). The patients in the group A had no atherosclerotic lesion and the patients in the group B had coronary artery disease in addition to MB. Angiographic, demographical and clinical characteristics of both groups were compared.

**RESULTS:** Demographical, clinical and treatment modalities of both group are seen table. Mean bridging percent was 43±27% in group A. On the time of discharge, 50% of these patients were not begun treatment with beta blocking agents and 34% of the patients were given oral nitrates in group A. Mean bridging percent was 70±15%. Interestingly, atherosclerosis located proximally to the MB in all of the patients with MB plus atherosclerotic stenosis on the LAD. Again, 50% of the patients in this group were not begun the treatment with beta blocking agents.

**CONCLUSIONS:** MB probability should be considered in young individuals presenting with angina or if the same symptoms are persistent in the patients without any risk factor for coronary artery disease or with only one risk factor. MB may initiate the development of atherosclerotic lesion or may facilitate progression by increasing shear stress on the proximal segment. The risk of acute coronary syndrome rises in the patients with complaints of stable angina when atherosclerosis was superimposed on MB.

**REF43**

**D13 - CORRELATION OF HbA1c (%), FIBRINOGEN, HsCRP AND LEUCOCYTE COUNT WITH CORONARY ARTERY DISEASE'S EXTENT IN NONDIABETIC PATIENTS**

Keles I., Oz E., Habeb M., Boduroglu Y., Mutlu H., Vural V.A.

*Department Of Cardiology, Cerrahpasa Medical Faculty, Istanbul, Turkey*

**OBJECTIVES:** Recently some inflammation markers (e.g. fibrinogen, hsCRP and leucocyte count) and HbA1c(%) are mentioned to be predictors of coronary artery disease (CAD). The aim of the current study is to obtain whether these markers are important in CAD extent or not

**METHODS:** We evaluated patients admitted to our cardiology department between January 2003 and March 2005 and underwent coronary angiography. CAD extent has been determined according to the coronary vessels' number that is stenotic due to thrombosis. The patients were carefully diagnosed as nondiabetics by the results of fasting and post-prandial glucose levels. In 40 patients (30 male and 15 female) HbA1c(%), fibrinogen, hsCRP and leucocyte counts were recorded. Results were statistically analyzed with non-parametric chi-square test and a p value <0.05 was considered significant.

**RESULTS:** Mean age of the participants were 57.7±12.4 (min 25.0, max 78.0) and correlation between mean values of between HbA1c (%), fibrinogen, hsCRP and leucocyte count with CAD extent were as follows (Table):

**CONCLUSIONS:** Since coronary heart disease is based upon inflammatory processes, it is not surprising to see high blood levels of inflammatory markers but it is worth to say, these markers are also correlated with CAD extent significantly. In many studies glycolyzed hemoglobin is found to be related with CAD independent of diabetes, but our study population does not suggest this.

**Correlation of markers with CAD extent**

	HbA1c(%)	Fibrinogen (mg/dL)	hsCRP (mg/L)	Leucocyte count(/mm <sup>3</sup> )
Mean value(min-max)	5.9±0.4(4.9-6.8) (216.50-820.04)	409.25±135.45	13.03±21.05 (0.57-99.46)	8544.44±2627.87 (5000-15400)
CAD extent determined by angiography	p= NS	p= 0.013	p= 0.001	p= 0.041

**REF39**

**D14 - THE COMPARISON OF DIFFERENT CLINICAL, LABORATORY, AND ANGIOGRAPHICAL PARAMETERS IN DIABETIC STENT RESTENOSIS.**

Heper G.

*Department of Cardiology, Ankara Etlik Ihtisas Hospital, Ankara, Turkey*

**OBJECTIVES:** This investigation was undertaken to detect the midterm stent restenosis rate in diabetic patients.

**METHODS:** The important clinical, laboratory, and angiographic factors for in-stent restenosis were analysed in 159 stents placed in 134 diabetic patients.

**RESULTS:** Our results found the midterm stent restenosis rate to be 40.3 %. For diabetic stent restenosis, the most important angiographic and clinical factors in univariate logistic regression analyses were the used stent diameter (P<0.01); reference vessel diameter (P<0.01); patient age (P<0.01); duration of diabetes mellitus (P<0.01); unstable angina prior to stenting (P<0.05); dyslipidemia (P<0.05); and diseased vessel number (P<0.05). The most important factors in multivariate analyses were the used stent length (P<0.05) and dyslipidemia (P<0.05).

**CONCLUSIONS:** Classic risk factors for nondiabetic stent restenosis were also found to be important for diabetic stent restenosis. The advanced age and duration of diabetes mellitus and the number of diseased coronary vessels and segments may be other specific risk factors for diabetic stent restenosis.

**REF53**

**D15 - CLINICAL AND ANGIOGRAPHIC OUTCOMES OF DIABETIC PATIENTS AFTER CORONARY STENTING: A COMPARISON OF NATIVE VESSEL STENT RESTENOSIS RATES IN DIFFERENT DIABETIC SUBGROUPS.**

Heper G., Durmaz T., Murat N.S., Ornek E.

*Department of Cardiology, Ankara Etlik Ihtisas Hospital, Ankara, Turkey*

**OBJECTIVES:** The main objectives of this study were to analyze the relationship between stent restenosis and microalbuminuria, which may express not only the glomerular vessels damage but also widespread microvascular dysfunction including coronary arterial disease, and to determine the angiographic and clinical outcomes of different diabetic subgroups after coronary stenting. Identification of the factors that may predict the outcome after coronary stent placement in diabetic patients could assist in deciding different stenting strategies in different diabetic subgroups.

**METHODS:** Control coronary angiographies were performed in 136 diabetic patients 6 months after coronary stent implantation. Patients were divided into 3 groups according to their microalbuminuria status. Clinical and angiographic outcomes and distribution of various risk factors were determined for these subgroups.

**RESULTS:** Blood pressure and cholesterol concentrations were higher in the overt diabetic nephropathy group. The mean diseased vessel segment rate was lower in patients without microalbuminuria. Although the mean stent length and size were similar, patients without microalbuminuria had lower restenosis rates (23.9% vs 53.2% (microalbuminuria) and 46.2% (overt diabetic nephropathy) p<0.01). Insulin therapy or gender caused no difference in restenosis rate. Although stent lengths and diameters were not different, patients with microalbuminuria had higher restenosis rates.

**CONCLUSIONS:** The authors suggest that microalbuminuria may be an independent risk factor for restenosis in patients with diabetes.

**REF36**

**D16 - ACUTE MYOCARDIAL INFARCTION RELATED TO ACUTE ALCOHOL INGESTION IN 19 YEAR OLD YOUNG BOY WITH NORMAL CORONARY ARTERIES**

Ismail B.<sup>1</sup>, Oktay E.<sup>2</sup>

<sup>1</sup>Department of Cardiology, Usak State Hospital, Usak, Turkey  
<sup>2</sup>Department of 2. Cardiology, Ataturk Educational Hospital, Izmir, TURKEY

**OBJECTIVES:** Regular mild alcohol ingestion has been known to be associated with a reduction in the risk for coronary heart disease. Acute heavy alcohol ingestion may trigger acute myocardial infarction (AMI). There are very rare case reports of AMI in young people associated with acute heavy alcohol drinking. We aimed to report this case of AMI related to acute heavy alcohol ingestion.

**CASE PRESENTATION:** A 19 year old boy presented emergency department of our hospital with complaints of severe retrosternal chest pain radiating to the left shoulder and back, diaphoresis and mild shortness of breath. He had drunk large amount of alcohol consisting of 45 percent of ethanol and four beer approximately 6 hours before symptoms. His physical examination was normal. A 12-lead electrocardiogram showed average 2-10 mm ST segment elevations in leads V1-6, DI and aVL. Laboratory examinations of patients revealed high levels of enzymes consistent with AMI. Immediately performed echocardiography showed apical and septal akinesis, anterolateral hypokinesis and mild left ventricular systolic dysfunction. Coronary angiography demonstrated no signs of atherosclerosis.

**CONCLUSIONS:** Alcohol consumption is very common in community. To make population conscious about the triggering effect of heavy alcohol intake on AMI may be crucial and imperative

REF18

**D17 - IS THERE A DIFFERENCE IN INFLAMMATORY RESPONSE BETWEEN PERCUTANEOUS CORONARY INTERVENTION TECHNIQUES?**

Duygu H., Turk U., Zoghi M., Yavuzgil O., Kirilmaz B., Ozerkan F., Turkoglu C.

Department of Cardiology, Ege University Medical Faculty, Izmir, Turkey

**OBJECTIVES:** Highly-sensitive C-reactive protein (hs-CRP) is an important indicator of the inflammatory process and an important predictor of vascular risk. Percutaneous coronary interventions (PCIs) cause local and systemic inflammatory responses with their mechanical effects on atheroma plaque. In this study, the relationship between PCI technique and triggered inflammatory response was assessed with hs-CRP levels measured before and 24 hours after the intervention. **METHODS** and

**RESULTS:** The study included 48 patients (of whom 42 were male and 6 were female, mean ages: 52±12 years) with stable angina pectoris who underwent elective PCI. Blood samples were taken from the patients before and 24 hours after the intervention. Fourteen patients underwent only angioplasty (group I), 24 patients angioplasty and stent implantation (group II) and 10 patients underwent atherectomy and stent implantation (group III). Increase in the levels of hs-CRP compared to the baseline was significantly higher in group II than group I (group II: 2.4±0.4 mg/dl, group I: 0.9±0.2 mg/dl, p<0.05). Increase in hs-CRP levels in the group III (3.8±0.8 mg/dl) was more remarkable compared to the 2 other groups (p<0.05). Six patients in the group underwent angioplasty due to in-stent restenosis. Increase in hs-CRP levels were found to be higher in the patients with in-stent restenosis when the patients in the group were compared for the increase in hs-CRP levels following PCI for in-stent and de novo lesions.

**CONCLUSIONS:** Inflammatory responses due to the mechanical injury in the coronary vessels caused by the stents, angioplasty and atherectomy are of different extent. This might be related to the early and late complications following percutaneous coronary intervention. Applying intense anti-coagulant, anti-platelet and anti-inflammatory therapy for the interventions that may cause intense inflammatory response in the coronary vessels may be beneficial for probable complications.

REF16

**D18 - DETECTION OF CORONARY ARTERY STENOSES USING MULTI SLICE COMPUTED TOMOGRAPHY AND CORRELATION WITH THE CONVENTIONAL ANGIOGRAPHY AND THE Ca-SCORE**

Wittlinger T., Aybek T., Wimmer-Greinecker G., Moritz A.

Dep. of Thoracic and Cardiovascular Surgery, University Hospital, Frankfurt, Germany

**INTRODUCTION:** The recently developed multislice computed tomography (MSCT) is capable of rapid imaging of cardiac structures including coronary arteries during a single breath-hold. In this

One disadvantage of the MSCT is limited explanatory power with a cumulative vascular calcium burden. Aim of the study was to evaluate the correlation between Ca-grading and diagnostic accuracy of the MSCT method.

**METHODS:** We examined 61 > 50% stenoses and 41 occlusions in 50 patients with 4 row MSCT scanner. On the basis of the Ca-score, patients were divided into 3 groups.

**RESULTS:** Of the 30 stenoses of 70-90%, 28 (93%) were correctly assessed, and of 31 stenoses >90%, 25 (81%) were correctly assessed. 35 (85%) of 41 the occlusions were confirmed in MSCT.

The sensitivity and specificity was between 47%-92% and 100-97% corresponding to the Ca-score.

40 segments were overrated in MSCT, of which 33 were in the group with a Ca-score of > 400.

**CONCLUSIONS:** MSCT allows non-invasive angiographic evaluation of coronary artery disease with a high diagnostic security.

However, the method strongly depends of the degree of vascular calcification and underrates the degree of stenosis subject to the Ca score. This signifies limitation in distal vascular segments of small calibre, which cannot be validly displayed.

**D19 - EVALUATION OF CORONARY ARTERY BYPASS GRAFT PATENCY WITH A 2D BREATH-HOLD SPIN ECHO MR SEQUENCE**

Wittlinger T., Oezaslan F., Aybek T., Moritz A.

Department of Thoracic and Cardiovascular Surgery, Johann Wolfgang Goethe University, Frankfurt am Main, Germany

**OBJECTIVE:** The aim of the study was to evaluate the patency of coronary artery bypass grafts and to detect graft stenosis and occlusions with a MR spin echo sequence.

**SUBJECTS AND METHODS:** 150 patients with 420 distal anastomoses were examined with a 1.5 T MR scanner. A 2-dimensional T2-weighted breath-hold half-Fourier acquisition single-shot turbo spin echo sequence (Haste) was performed. All images were evaluated independently by a radiologist and cardiologist and correlated to the conventional coronary angiography. The observers were blinded to the results of the coronary angiography, but informed about the surgical graft anastomosis.

**RESULTS:** With the Haste sequence 76% of the distal anastomoses were recognized (320/420). 35 of 42 stenosis and all occlusions were identified. The sensitivity and specificity for the evaluation of the distal anastomosis was 87% and 96%. 24% of the distal anastomoses were not identified due to a poor image quality or motion artefacts.

**CONCLUSION:** Using the Haste sequence a reliable assessment of graft patency and evaluation of graft occlusion is possible. Further improvements of the spatial resolution and the image quality are necessary to recommend this MR technique for routines clinical use.

## CORONARY SURGERY I

### D21-PRESENTATION OF OUR CARDIAC TRANSPLANTATION RESULTS

Golbasi İ., Basbug H.S., Talay S., Turkyay C., Mete A., Bayezid O.

*Department of Cardiovascular Surgery, Akdeniz University, Faculty of Medicine, Antalya, Turkey*

**OBJECTIVES:** The most effective treatment of end stage heart failure is cardiac transplantation. In this study we aim to evaluate the preoperative and postoperative parameters of 10 cardiac transplant patients.

**METHODS:** One patient had cardiac transplantation operation waiting with intraaortic balloon pump in intensive care unit. Other 9 patients had functional capacity of class 4 according to NYHA. All the patients were followed with endomyocardial biopsy every week for 4 weeks, then third month and twelfth month after the operation. In rejection periods 1000 mg of Prednisolon for three days were added to their routine immunosuppressive therapy.

**RESULTS:** All the patients have functional capacity of class 1. In echocardiography, all the patients have structurally and functionally normal right and left ventricles, and normal wall thicknesses. No mortality was seen.

**CONCLUSIONS:** Cardiac transplantation is an effective choice of treatment in end stage heart failure. **REF116**

### D20-PULSATILE THORACAL MASS: A RARE CASE OF LARGE LEFT VENTRICULAR PSEUDOANEURYSM

Guler A.<sup>1</sup>, Ucak A.<sup>1</sup>, Ugur M.<sup>1</sup>, Cortelekoglu T.<sup>1</sup>, Ulusoy R.E.<sup>2</sup>, Us M.H.<sup>1</sup>, Yilmaz A.T.<sup>1</sup>

<sup>1</sup>Cardiovascular Surgery, GATA Haydarpaşa Training Hospital, Istanbul, Turkey,

<sup>2</sup>Cardiology, GATA Haydarpaşa Training Hospital, Istanbul, Turkey

**OBJECTIVES:** Left ventricular pseudoaneurysms develop after myocardial infarction, trauma, infection and either valvular or ventricular surgery. We present an unusual case of left ventricular pseudoaneurysm appearing like a pulsatile mass, which was easily seen from the chest wall.

**METHODS:** A fifty-five-year-old woman was admitted to our clinic with a pulsatile mass and thrill, easily seen on the anterior chest wall after six weeks to CABG surgery and endoaneurysmorrhaphy operation. Contrast enhanced tomography showed a soft tissue mass detected close to the subcutaneous fat tissue of the anterior chest wall located in the left hemithorax. Left ventriculography was consistent with a large pseudoaneurysm in the apical wall of the left ventricle. Pseudoaneurysm repair was performed under femoral cannulation with an arrested heart. We performed CABG x 2 and a new endoaneurysmorrhaphy with a Dacron patch.

**RESULTS:** The patient was discharged postoperatively to home on day fifteen. Echocardiography showed satisfactory repair of the aneurysm with shrinkage of the aneurysm and patient remained asymptomatic without any clinical event during our follow-up.

**CONCLUSIONS:** Left ventricular pseudoaneurysms usually present with heart failure. However, some patients may have a recurrent tachyarrhythmia, thromboembolism or remain clinically silent. When a patient was seen after cardiac surgery with a pulsatile mass detected on the chest wall, pseudoaneurysm is one of the diagnostic choices, which has to be remembered and must be addressed directly to cardiac catheterization laboratory instead of ultrasonography. **REF91**

### D22-CORONARY ARTERY BY-PASS GRAFTING OPERATION AND ELECTRON BEAM TOMOGRAPHY ULTRAFAST ANGIOGRAPHY: A CASE REPORT

Yilmazkaya B.<sup>1</sup>, Gurkahraman S.<sup>1</sup>, Uzun A.<sup>2</sup>, Cerci R.<sup>1</sup>, Colak N.<sup>1</sup>, Ercisli A.M.<sup>3</sup>, Tasdemir O.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Akay Hospital, Ankara, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Ankara Research and Training Hospital, Ankara, Turkey

<sup>3</sup>Department of Cardiovascular Surgery, Gaziantep Hospital, Gaziantep, Turkey

**OBJECTIVES:** On rare occasions where coronary angiography is not applicable Electron Beam Tomography (EBT) may be a reliable option.

**METHODS:** A 58 year-old male was admitted to the hospital for unstable angina pectoris. He had a history of coronary artery by-pass grafting (CABG); he had received left internal thoracic artery to left anterior descending artery and a saphenous vein to right coronary artery posterior descending branch 17 years ago. He also had claudication after 25-30 meters and he had had bilateral occluded iliac arteries documented by color Doppler ultrasound. A coronary angiography was planned for the patient. As the femoral arteries were pulseless, the cardiologists used brachial approach with the Seldinger's technique. The attempts were unsuccessful. The upper brachial arteries were explored under local anesthesia and cannulated, however, the physicians were unable to advance the catheter. Therefore an EBT was performed to clarify the CABG course and the native arteries.

**RESULTS:** The patient was operated on with the guidance of the EBT. He received a saphenous vein to left anterior descending artery, obtuse marginal branch and posterior descending branch in a sequential manner. The lesions and the calibrations were consistent with the tomography. The patient experienced an uneventful post-operative course was discharged on the seventh post-operative day.

**CONCLUSIONS:** EBT is a developing technique and it may be the future of coronary artery visualization method. **REF60**

**D23-COMplete ARTERIAL REvascularIZATION USING SEQUENTIAL RADIAL ARTERY GRAFT IN MULTIVESSEL CORONARY ARTERY DISEASE.**

Nisanoglu V., Erdil N., Ozgur B., Aydemir K., Aydin N., Cihan H.B., Battaloglu B.

*Department of Cardiovascular Surgery, Turgut Ozal Medical Center, Malatya, Turkey*

**OBJECTIVES:** Complete arterial revascularization is a surgical option to improve long-term results of the coronary artery disease treatment. The availability of sufficient graft length is the main limitation of this procedure. We present our experience in the use of radial artery as a sequential graft.

**METHODS:** From February 2002 to April 2005, 151 patients underwent myocardial revascularization using radial artery or arteries with internal mammary artery. There were 112 men and 39 women with a mean age of 59 years (range, 31 to 80 years). Forty-one patients (27%) were diabetic, 19 (13%) were obese and 22 (16%) had carotid or peripheral arterial disease. In 4 patients (2.6%), the operation was performed on an urgent basis. The mean left ventricular ejection fraction was  $0.35 \pm 0.12$ . A mean of 3.97 arterial anastomoses per patient were constructed. Proximal anastomosis of the sequentially used radial artery were performed to the internal thoracic artery in 49 (33%), and to the ascending aorta in 102 (77%). Mean cardiopulmonary bypass and cross-clamp time were  $112 \pm 22$  and  $84 \pm 17$  minutes respectively.

**RESULTS:** There was four (2.4%) operative mortality and 1 patient (0.7%) had cerebrovascular event. Perioperative intraaortic balloon pump was necessary in 3 patients (2%) and 15 of the patients (10%) needed inotropic agents. Atrial fibrillation developed in 23 (15%) of the patients. Mean ICU and hospital stay were  $2.1 \pm 1.2$  and  $6.5 \pm 2.3$  days respectively.

**CONCLUSIONS:** Sequential radial artery grafting seem to be safe and effective to achieve complete arterial revascularization. **REF134**

**D24-COMPARISON OF ACETYL SALICYLATE AND ACETYL SALICYLATE-CLOPIDOGREL COMBINATION AS ANTIPLATELET TREATMENT FOLLOWING CORONARY ARTERY BYPASS SURGERY**

Kazaz H., Celkan M.A., Ustunsoy H., Daglar B., Kayiran C.

*Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey*

**OBJECTIVES:** Selecting the appropriate antiplatelet treatment following coronary artery bypass surgery (CABG) gained importance as acetyl salicylate (ASA) resistance was discovered. In our study, one-year follow-ups of ASA only and ASA plus clopidogrel treatments were compared in a randomized prospective design.

**METHODS:** Between January 2001 and April 2003, two randomized groups of 75 patients each who have undergone isolated CABG were formed. Group I received ASA and group II received ASA + clopidogrel. The preoperative demographic data, perioperative and postoperative follow-up data of patients were collated in standard follow-up forms. Routine follow-up visits were made in 1st, 6th and 12th postoperative months. At the end of one year, each patient took an effort test.

**RESULTS:** The two groups did not differ significantly regarding demographic data. Transient cerebral attacks within one year were significantly higher in group I. In the early postoperative discharge period, electrocardiograms and cardiac enzymes did not differ significantly. Angina, myocardial infarction and effort test results indicating ischemia did not also differ significantly.

**CONCLUSIONS:** Depending on its favorable effects on ischemic cerebral events, we propose that combined treatment will be a better choice than ASA for antiplatelet treatment in medium and long terms. **REF129**

**D25-QUADRUPLE CORONARY ENDARTERECTOMY FOR DIFFUSE CORONARY ARTERY DISEASE IN A PATIENT WITH ACUTE CORONARY SYNDROME**

Nisanoglu V., Erdil N., Cihan H.B., Battaloglu B.

*Department of Cardiovascular Surgery, Turgut Ozal Medical Center, Malatya, Turkey*

**OBJECTIVES:** The results of coronary endarterectomy (CE) performed in addition to coronary artery bypass grafting (CABG) have been controversial. CE when combined with CABG seemed to be associated with a higher mortality and morbidity than isolated CABG.

**METHODS:** We report the case of a patient with acute coronary syndrome who underwent quadruple CE combined with CABG. A fifty-five years old male patient was admitted to our emergency department with acute coronary syndrome. Immediately performed coronary angiography showed severe and diffuse triple-vessel disease. The patient underwent emergent surgical intervention. Following quadruple CE with the conventional pull-out method, saphenous vein grafts were anastomosed to the right coronary artery, obtuse marginal branch of circumflex artery and diagonal branch of LAD artery, and LIMA was anastomosed to LAD artery.

**RESULTS:** The patient was weaned from cardiopulmonary bypass without difficulty. After the operation, the patient had no need of inotropic or intra-aortic balloon pump support. Low-molecular-weight heparin and antiagregan treatment was initiated 6 hours after arrival in the intensive care unit. There was no electrocardiographic changes and cardiac enzyme elevation postoperatively. He was extubated 6 hours postoperatively, and was discharged from the hospital on the 7th postoperative day with oral acetylsalicylic acid and clopidogrel. When last seen, 4 months after surgery, the patient was in excellent physical condition and was free of angina. To our knowledge, this is the unique report of quadruple CE combined with CABG.

**CONCLUSIONS:** CE procedure was found to be safe and effective for complete revascularization in patients with a severely and diffusely diseased coronary artery. **REF118**

**D26-TOTAL ARTERIAL REvascularIZATION USING INTERNAL THORACIC ARTERY WITH RADIAL ARTERY T GRAFTS**

Nisanoglu V., Erdil N., Ozgur B., Aldemir M., Eroglu T., Battaloglu B.

*Department of Cardiovascular Surgery, Turgut Ozal Medical Center, Malatya, Turkey*

**OBJECTIVES:** The radial artery can be used as either aortocoronary or composite grafts (T graft). Proximal anastomosis of the radial artery to the internal thoracic artery (ITA) permits complete arterial revascularization. We reviewed our early experience with radial artery T grafts to ITA.

**METHODS:** Radial arteries were used in composite arterial conduits with an internal mammary artery as the blood source. From March 2003 to April 2005, 84 patients underwent myocardial revascularization using radial artery with internal mammary arteries as inflow conduits. Forty-three bilateral radial arteries were concomitantly used. There were 69 men and 15 women with a mean age of  $58.1 \pm 10.4$  years (range, 31 to 80 years). One third of the patients were diabetic, 15.5% were obese. In 3 patients (3.6%), the operation was performed on an urgent basis. The mean left ventricular ejection fraction was  $0.47 \pm 0.09$ . A mean of 3.7 arterial anastomoses per patient were constructed. Seven (8.7%) coronary endarterectomy and arterial patchplasty were performed. Five patients (6%) underwent left ventricular aneurismectomy. Mean cardiopulmonary bypass and cross-clamp time were  $109 \pm 25$  and  $88 \pm 18$  minutes respectively.

**RESULTS:** No deaths occurred in the operating room. Two patients (2.4%) died postoperatively, and 1 patient (1.2%) had cerebrovascular event. Perioperative intraaortic balloon pump was necessary in 3 patients (3.6%) and 14% of the patients needed inotropic agents. Atrial fibrillation developed in 9 (10.7%) of the patients.

**CONCLUSIONS:** Complete arterial revascularization can be achieved with an ITA and radial artery T graft with acceptable operative mortality and morbidity. **REF120**

### D27-CABG IN WOMEN: OPERATIVE AND POSTOPERATIVE DIFFERENCES

Metin K., Oto O., Celik M., Ozdamar M., Tekin U.

*Ege Saglik Hospital, Izmir Turkey*

**OBJECTIVES:** Male and female patients undergoing coronary artery bypass grafting show different medical, demographic, and psychosocial features. Female cases are mostly from lower grades of education, have more severe symptoms of angina and congestive heart failure; they often have signs of deep depression. Shorter stature, higher body weight, hypertension, diabetes, congestive heart failure, higher blood lipid contents and lower hematocrit levels are significant them. Duration of operation, extubation, ICU times are significantly longer, and they show a relative higher mortality rate in comparison with male cases.

**METHODS:** We have operated 664 CABG cases (227 female and 437 male) in Cardiovascular Surgery Clinic of EgeSağlık Hospital, Izmir, between May 2002 and May 2005. Mean age of the cases was 61,41±8,9 (male 61,46±9,08; female 61,28±8,28). Total operation, cardiopulmonary bypass, aortic cross clamping times, the quality and flow patterns of the coronary arteries and conduits were noted by the same surgical team. Also, total number of bypassed coronary arteries and mean values per patients were compared between the groups. ICU staying duration, extubation times, requirement of blood and blood products transfusions, hemorrhagic drainage amounts, total hospitalization times and costs were compared.

**RESULTS:** Total number of bypassed coronary arteries were significantly fewer in female cases. Quality of coronary arteries and flow patterns of conduits were significantly poorer. ICU staying was observed longer, total hospitalization times were similar. Blood transfusion was mostly required in female patients.

**CONCLUSIONS:** We have observed significant operative and postoperative differences between two genders. This results are important for patients selection, operative strategies and postoperative treatment.

REF162

### D28-A NEW MODIFICATION OF DOR TECHNIQUE FOR RECONSTRUCTION OF LEFT VENTRICLE IN PATIENTS WITH LEFT VENTRICULAR DYSFUNCTION

Oto O., Metin K., Celik M., Tekin U., Ozdamar M.

*Ege Saglik Hospital, Izmir Turkey*

**OBJECTIVES:** Left ventricular restoration concomitant with coronary revascularization is a well described method for patients with coronary artery disease and left ventricular dysfunction. The fibrotic scar tissue replacing necrotic myocardium after the myocardial infarction depresses normal systolic function. In those cases with large area of necrosis, coronary revascularization alone may not be sufficient for an acceptable postoperative systolic function of the heart. Today, apicoventriculoplasty technique, which was described by Dor, is the method of choice for many cases who were formerly described as "inoperative" or referred to transplantation centers. Restoration of the left ventricular function is achieved with excision of the necrotic apical tissue and remodeling with the help of synthetic patch. This results in harmonically systolic movement of apex and improvement of the ejection fraction.

**METHODS:** Our modification of the original Dor technique shortens the time required for sizing, tailoring and suturing of the patch and consequently results in decreased duration of aortic cross clamping and cardiopulmonary bypass times.

**RESULTS:** We did not observed operative mortality in our 9 male cases operated with this technique. One patient died in the ICU with postoperative low cardiac output. Remaining 8 cases were discharged are in well condition since 2-26 months of follow up. All patients are examined with echocardiography and significant improvement in left ventricular ejection fraction was observed in four cases with clinical improvement (NYHA) in all cases.

**CONCLUSIONS:** This modification has additional advantages to Dor restoration of the left ventricle and have satisfying results.

REF161

### D29-ASETYLSALICYLIC ACID RESISTANCE IN CORONARY ARTERY BYPASS SURGERY

Isbir S.<sup>1</sup>, Ak K.<sup>1</sup>, Aksoy N.<sup>2</sup>, Tekeli A.<sup>2</sup>, Civelek A.<sup>1</sup>, Tetik S.<sup>2</sup>, Birkan Y.<sup>1</sup>, Adademir T.<sup>1</sup>, Arsan S.<sup>2</sup>

<sup>1</sup>Marmara University School of Medicine Department of Cardiovascular Surgery Istanbul, Turkey

<sup>2</sup>Marmara University School of Medicine Foundation Hospital, Istanbul, Turkey

**OBJECTIVES:** The use of acetylsalicylic acid in patients undergoing coronary artery bypass grafting is an important factor affecting the graft patency. Incidence of acetylsalicylic acid resistance in general population is reported as 5 to 40%. This study is designed to document the acetylsalicylic acid resistance in CABG patients.

**METHODS:** Between January 2004- January 2005, sixtythree patients undergoing coronary artery bypass grafting were included into the study. Mean age of the patients was 57.85±11.28. Acetylsalicylic acid resistance was tested by tromboelastogram in all patients and by tromboelastogram and platelet aggregometer in 10 of the 63 patients. The number of patients using acetylsalicylic acid preoperatively was 40.

**RESULTS:** Preoperative acetylsalicylic acid resistance was detected in 12 patients (30%) by tromboelastogram. Despite the recent acetylsalicylic acid usage, the maximum amplitude (MA) values in tromboelastogram was normal in these patients (63.55±4.39 mm). In these patients, platelet aggregation induced by ADP was below the 50% on the aggregometer.

**CONCLUSIONS:** Acetylsalicylic acid usage is one of the determinants of early graft patency after coronary artery bypass grafting surgery. For the postoperative graft patency, it is important to document the acetylsalicylic acid resistance preoperatively and to start alternative antiplatelet agent in these patients. Tromboelastogram appears to be an important tool of postoperative transfusion algorithm in cardiac surgery. We believe that it can be used as a method to detect acetylsalicylic acid resistance in CABG patients.

REF143

### D30-CORONARY ARTERY BYPASS SURGERY AND CALCIFIED AORTA: OFF-PUMP STRATEGY IMPROVES OUTCOME

Therapidis P., Aybek T., Risteski P.S., Zierer A., Dogan S., Moritz A.

*Department of Thoracic and Cardiovascular Surgery, Johann Wolfgang Goethe University, Frankfurt/Main, Germany*

**INTRODUCTION:** Calcified aorta increases the mortality and morbidity associated with conventional coronary artery bypass grafting (CABG). Several operative strategies have been proposed in order to avoid the complications related to manipulation of the calcified aorta. In this paper, we present our results from CABG in patients with calcified aorta.

**MATERIALS AND METHODS:** Since January 2000, 53 patients (34 women, mean age 72±7 years) with coronary artery disease underwent surgical revascularization. 39 patients had unclampable porcelain aorta. Most common comorbidity was peripheral arterial disease (55%) followed by chronic obstructive pulmonary disease (34%), chronic renal failure (26%) and diabetes mellitus (13%), for a Euroscore of 8.4±4.2.

**RESULTS:** Seventeen patients underwent off-pump coronary artery bypass grafting and another seventeen were operated on-pump without aortic cross-clamping. Six patients required circulatory arrest and replacement of the ascending aorta. The rest underwent conventional operation and single clamp technique. In-Hospital mortality was 17%, more pronounced in those operated on with cardiopulmonary bypass (30.4%) than those operated off-pump (5.8%). Neurologic complications occurred in 4%. Actuarial survival at 36 months was 78±9% in off pump group and 64±11% in on-pump group (p<0.01).

**CONCLUSIONS:** Patients with calcified aorta undergoing coronary revascularization have higher perioperative mortality and morbidity. Off pump strategy with avoidance of any manipulation of the ascending aorta may offer better outcome.

REF140

**D31-RANDOMISED COMPARISON OF VASODILATOR EFFECTS ON FLOW AND PATHOLOGICAL CHANGES IN RADIAL ARTERIES OF ILOPROST VERSUS DILTIAZEM**

Ustunsoy H.<sup>1</sup>, Kazaz H.<sup>1</sup>, Celkan M.A.<sup>1</sup>, Deniz H.<sup>2</sup>, Bakir K.<sup>2</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey

<sup>2</sup>Department of Pathology, Gaziantep University School of Medicine, Gaziantep, Turkey

**OBJECTIVES:** Pharmacologic prophylaxis for prevention of notorious radial artery(RA) spasm is critical because of the increasingly routine use of the RA conduit during coronary bypass. Therefore we investigated the vasodilatory effects of diltiazem versus iloprost on RA intraoperative during harvesting and early postoperative.

**METHODS:** We have evaluated the vasodilatory effect of diltiazem and iloprost prospectively within 35 patients for each group. The flow of the RA was performed with intraoperative Doppler USG (Quantix/OR, Cardiosonic, Israel) before and after harvesting, before the closure of sternum. Also 0.5mm piece of RA was excised from the distal part of the RA. In group I diltiazem infusion was started before the harvesting. In group II iloprost infusion was started 5 days before the surgery. After the surgery ECG and cardiac enzyme changes were analyzed 4 times within the first 24h.

**RESULTS:** There was no significant flow change before the harvesting. But after the harvesting there was a significant flow change in the group I ( $p=0.000$ ,  $Z=-6.053$ ). Also there was a significant change on the luminal diameter at the pathologic specimens ( $p=0.000$   $Z=-6.533$ ). There was ischemic S-T segment changings at the ECG 11 in group I and 3 in group II( $p=0.001$   $Z=-3.459$ ). All ECG S-T segment changings were improved with medical therapy.

**CONCLUSIONS:** From our clinical coronary flow measurements and pathological results we believed that the prevention of RA vasospasm with iloprost is better than diltiazem with intraoperative and early postoperative findings. **REF132**

**D32-MIDTERM RESULTS OF OFF-PUMP CORONARY ARTERY BYPASS SURGERY IN 136 PATIENTS: AN ANGIOGRAPHIC CONTROL STUDY.**

Kazaz H., Ustunsoy H., Celkan M.A., Kayiran C., Bayar E.

Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey

**OBJECTIVES:** Off-pump coronary artery bypass surgery may provide a safer form of surgical revascularization by avoiding the unwanted complications of CPB. This study reviews the midterm results of the 136 off pump bypass surgery.

**METHODS:** 178 surgical myocardial revascularizations were realized in our center between January 1999 and March 2002, 136 of them (76.4%) were off pump bypass surgery. Complete revascularization especially arterial grafts were used. All patients were followed clinically and treadmill test in two years. Average two year follow-up control angiography were performed.

**RESULTS:** 56.7% of patients were male and the mean age of the patients were  $63.6\pm 7.4$  years. A total of 471 anastomoses were performed. (136 [28.8%] to the LAD, 135 [28.6%] to the Cx branches, 102 [21.6%] to the RCA, 108 [22.9%] to the Di). The mean graft number was 3.46. We used 96.6 % of patients LITA, 29.2 % radial artery, 4.4 % RITA, 100 % safenous vein. There were ischemic changes within 12. All ischemic changings come back to normal within 4 and 18 hours postoperatively. Mean extubation time was  $5.36\pm 2.23$ h mean stay in intensive care unit was  $17.53\pm 3.15$  h, mean hospital stay was  $5.03\pm 1.29$  days. The LITA patency was 97.8%, radial artery patency was 97 %, RITA patency was 100 % and safenous vein patency was 91 % with control angiography.

**CONCLUSIONS:** Off pump CABG is efficient procedure with lower index of mortality, morbidity, ICU stay, hospital stay, good wound healing, early sosalization and results in lower costs. **REF131**

**D33-A BETTER OPTION FOR RADIAL ARTERY COMPOSITION: T GRAFT**

Yilmazkaya B., Gurkahraman S., Circi R., Colak N., Tasdemir O.

Department of Cardiovascular Surgery, Akay Hospital Ankara, Turkey

**METHODS:** Between June 2003 and May 2005, 445 patients with multivessel coronary artery disease underwent revascularization using left internal mammary artery(LIMA) and radial artery(RA). The RA was used as an aortocoronary(Ao-RA) before January 2005( $n=410$ ), and as a composite graft(T graft) after January 2005( $n=35$ ). Both groups were operated on with the same technique; on pump, mild hypothermia and cardioplegic arrest.

**RESULTS:** The patients in the T graft group did not require defibrillation after declamping the aorta. The cross-clamp times were between 35 and 65 minutes(mean 49,35 minutes).None of them required amiodarone infusion. In only 3 patients diltiazem infusion was necessary for post-operative tachycardia. post-operative ICU stays were uneventful; no ST-T changes, no enzyme changes, no peri-operative myocardial ischemias were observed. The patients were discharged on the 4th and 6th post-operative days.

**CONCLUSIONS:** The composite T graft technique is more reliable and it provides a longer use of the RA for the lateral wall revascularisation. **REF108**

**D34-OFF PUMP CORONARY ENDARTERECTOMY AND PATCHPLASTY: MIDTERM RESULTS IN 45 PATIENTS**

Uyar I., Kaya E., Yildiz Y., Basaran M., Cucu O., Us M.H., Ogun T., Isik O.

Cardiovascular Surgery Department, Medicana Hospital, Istanbul, Turkey

**OBJECTIVES:** With advances in surgical techniques, many patients now referred for coronary artery bypass grafting have diffuse coronary artery disease. This study was aimed to evaluate the mid-term angiographic results of patients undergoing off-pump coronary endarterectomy and patchplasty.

**METHODS:** Between years 2000-2005, 45 patients underwent LAD coronary endarterectomy with coronary artery bypass grafting and patchplasty. The group of study consisted of 24 men and 21 women with a mean age of 67.5 years (range, 43 to 77 years). All patients were in NYHA class III or IV preoperatively. Control angiography was performed in 27 patients. In the remaining 18 patients, a thallium scintigraphy was carried out.

**RESULTS:** There was no in-hospital mortality. During the postoperative follow-up period, all patients were in NYHA class I or II, except 5 patients (11.1%) with congestive heart failure. The mean follow-up period was 32.3 months Control angiography revealed a patent LIMA-LAD anastomosis in 21 patients (77.7%). In 4 patients, a new atherosclerotic lesion was determined in the distal LAD and in 2 patients, the anastomosis was occluded. Thallium scintigraphic evaluation was consistent with ischemia in 3 patients (17%).

**CONCLUSIONS:** Off-pump coronary endarterectomy and patchplasty yielded acceptable clinical results and a good patency rate of revascularization. **REF104**

**D35-CORONARY ARTERY BYPASS GRAFTING IN PATIENTS WITH DIALYSIS- DEPENDENT RENAL FAILURE**

Kaya E., Uyar I., Ozbek C., Uyar G., Yildiz Y., Basaran M., Us M.H., Ogus T., Isik O.

*Cardiovascular Surgery Department, Medicana Hospital, Istanbul, Turkey*

**OBJECTIVES:** The aim of this study was to evaluate peri-operative risk and mid-term results of coronary artery bypass grafts (CABG) in dialysis patients.

**METHODS:** This study included 36 patients in chronic dialysis who underwent CABG at our institution. The mean age was 57±9 years (range 38-76 years), 77.7 % of the patients were male. The mean preoperative serum creatinine level was 3.7±0.8 mg/dl. All patients were in NYHA class III or IV preoperatively. Hemodialysis was performed in all patients one day prior to surgical intervention.

**RESULTS:** There was no in-hospital mortality. All patients were weaned off cardiopulmonary bypass with mild inotropic support and no patients required intraaortic balloon counterpulsation. Perioperative myocardial infarctus without hemodynamic compromise was noted in 4 patients. Hemodialysis was also performed in all patients at the first postoperative day. Follow-up was complete in 33 patients. When compared to the preoperative status, there was no significant difference in terms of hemodialysis requirement (p= 0.24). During the follow-up period, 6 patients required anticongestive treatment because of congestive heart failure. All remaining patients improved their functional status and had symptomatic relief.

**CONCLUSIONS:** Patients with decreased renal function carry significant operative risks and may require prolonged hospital care. However, we believe that the use of preoperative prophylactic hemodialysis and perioperative hemofiltration decrease both operative mortality and morbidity in these high-risk patients. **REF102**

**D36-THE COMPARISON OF Y VERSUS CLASSICAL SEQUENTIAL VENOUS BYPASS GRAFTS: MIDTERM RESULTS**

Us M.H., Basaran M., Arslan Y., Ozbek C., Cortelekoglu T., Pocan S., Guler A., Ucak A., Yilmaz A.T.

*Cardiovascular Surgery Dept. GATA Haydarpasa Training Hospital, Istanbul, Turkey*

**OBJECTIVES:** Total arterial myocardial revascularization may be achieved by using the 'Y-graft' techniques with different conduits anastomosed off the side of an in situ internal thoracic artery or an anastomosed saphenous vein. This study was aimed to evaluate the midterm angiographic results of classical sequential venous bypass versus Y-grafts and their degree of patency within 5 years of follow-up.

**METHODS:** Twohundred-eighty patients who received classical side to side sequential (150 patients, group I) or a Y-graft (130 patients, group II) were enrolled in this study. This group represented 20.9 % of the 1100 patients having coronary bypass during the same period. Seventy-seven patients underwent coronary angiography within 5 years of follow-up.

**RESULTS:** There were no significant differences in terms of postoperative complications between two groups. Early postoperative (30 days) complications included nine deaths (3.2 %), twelve myocardial infarctions (4.2%), six cases of respiratory failure (2.1%), and eleven wound infections (3.9%). During the follow-up period, ten patients died of noncardiac causes. At 1 year, the remaining patients had improvement of their angina class and were free of symptoms. Forty-five patients in group I and 32 patients in group II underwent angiographic evaluation. The patency rates of classical side to side sequential and Y-graft were 50 % and 65 %, respectively.

**CONCLUSIONS:** Because the implication of competitive flow in the sequential grafts may differ from that in conventional bypass grafts, long-term follow-up is mandatory. We conclude that the Y procedure is a safe technique with an acceptable morbidity and a good patency rate. **REF101**

**D37-A NEW TECHNIQUE FOR LEFT VENTRICULAR ANEURYSM: "CONIC REPAIR"**

Yilmazkaya B., Gurkahraman S., Circi R., Colak N., Tasdemir O.

*Department of Cardiovascular Surgery, Akay Hospital, Ankara, Turkey*

**METHODS:** Fifty-three consecutive patients with left ventricular aneurysm were operated on in our institution (22 male, 3 female). Seventeen of them underwent apical plication and 8 of them underwent endoaneurismoraphy. Ten of the patients were New York Heart Association Functional Class (NYHA FC)II, 10 of them were NYHA FC III and 5 of them were NYHA FC IV. Twenty patients received positive inotropes (dopamine and adrenaline) in the ICU, three patients needed intraaortic balloon pump (IABP) counterpulsation. Three patients died; two of them were low cardiac output and one developed acute renal failure.

**RESULTS:** We performed the "conic repair" in 18 patients. Two of them were NYHA FC II, 13 of them were NYHA FC III and 3 of them were NYHA FC IV. Thirteen patients received positive inotropes, 1 patient needed IABP counterpulsation, 1 patient died because of low cardiac output. We followed 15 patients up to 9 months with echocardiography and physical examination. A coronary angiography was performed in two patients. Their ejection fractions are between 38% and 55% (mean 45%)

**CONCLUSIONS:** We believe that the "conic repair" preserves and reshapes a better geometry for the left ventricle. **REF96**

**CORONARY SURGERY II**

**D38-THE ROLE OF MULTISLICE CT SCAN ON STROKE AFTER CABG OPERATION IN PATIENTS WITH AORTIC ATHEROSCLEROSIS**

Hastaoglu O.<sup>1</sup>, Sokullu O.<sup>1</sup>, Sanioglu S.<sup>1</sup>, Kut M S.<sup>1</sup>, Sahin S.<sup>2</sup>, Deniz H.<sup>1</sup>, Tokoz H.<sup>1</sup>, Bilgen F.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Dr.Siyami Ersek Thoracic&Cardiovascular Surgery Training and Research Hospital, Istanbul, Turkey,

<sup>2</sup>Department of Radiology, Dr.Siyami Ersek Thoracic&Cardiovascular Surgery Training and Research Hospital, Istanbul, Turkey

**OBJECTIVES:** The atherosclerotic disease of proximal aorta plays an important role on stroke development after CABG operations. The examination of the atherosclerotic changes in proximal aorta and precautions taken in the case of existence lessen mortality and morbidity. In this study, the role of multislice Computerized Tomography (CT) for the detection of atherosclerotic disease at ascending and arcus aorta is investigated.

**METHODS:** Fifty consecutive patients who underwent conventional coronary artery bypass surgery with cardiopulmonary bypass are included. All of the patients were investigated by preoperative echocardiography and carotid artery doppler ultrasonography. The ascending and arcus aorta of the patients were evaluated one day before the operation with multislice CT (Siemens, Somatom sensation 16). The aortae of the patients were palpated by the same surgeon in all cases. The findings were enrolled, compared with each other, and were analysed. The surgical operation strategy and manipulation is going to be looked over. Patients who were awakened with a stroke were examined by a neurolog and cranial CT scans were performed. This is a preliminary abstract of our study. The clinical results will be obtained by the time of your congress.

**CONCLUSIONS:** We hope to present our paper and share the documents with our colleagues. We think the multislice CT scanning of the aorta will guide us about neurologic complications expected after coronary artery bypass surgery. **REF82**

**D39-EFFECTS OF "DEADLY QUARTET" ON LONG TERM SURVIVAL AFTER CORONARY ARTERY BYPASS GRAFTING IN WOMEN**

Yuksel H.<sup>1</sup>, Kilickiran Avci B.<sup>1</sup>, Arat Ozkan A.<sup>2</sup>, Bilal M.S.<sup>2</sup>, Kansiz E.<sup>2</sup>, Olga R.<sup>2</sup>, Bakay C.<sup>2</sup>

<sup>1</sup>Department of Cardiology, Cerrahpasa Medical Faculty, Istanbul, Turkey,

<sup>2</sup>Institute of Cardiology, Istanbul University, Istanbul, Turkey

**OBJECTIVES:** Numerous studies have demonstrated increased hospital mortality after CABG in women when compared with men. We examined the post-CABG registry of women patient to determine whether the metabolic syndrome (MS) (deadly quartet) or its components affected to mortality rate on long term follow-up.

**METHODS:** A retrospective analysis was performed in 252 women patients who had isolated CABG surgery from 1986 to 1998. Patients were divided into the two groups based on the presence or absence of MS. MS was defined by the NCEP ATP-3 criteria, with BMI  $\geq 30$  as a proxy for waist circumference. Patients were followed a median  $91 \pm 37$  months.

**RESULTS:** MS was identified in 159 patients (64%). The presence of metabolic syndrome components in each group is shown in Table. Postoperatively 15 women died (mortality 5.9%). Cumulative mortality rates were 1.2% in the first year, 5.0% in 5 years and 15.2% over the course of the study. When analyzing the mortality, the presence of MS and its individual components was not associated with increased mortality rates, except the presence of diabetes ( $p=0.046$ ). In analyses we found, age ( $p=0.001$ ), previous myocardial infarction ( $p=0.011$ ), severe left ventricular (LV) dysfunction ( $p<0.0001$ ) as predictors of mortality.

**CONCLUSIONS:** Our study findings suggest that although female patients with CABG have increased MS prevalence, it was'nt associated with long term mortality. Mortality seems more related to diabetes, age and LV dysfunction. Wherefore our study population are small, further studies are needed to confirm our findings. **REF67**

**D40-CONCOMITANT CAROTID ENDARTERECTOMY AND CORONARY REVASCLARIZATION USING MODERATE HYPOTHERMIA IN PATIENTS WITH BILATERAL CAROTID ARTERY DISEASE**

Eren E., Balkanay M., Toker M.E., Tuncer A., Keles C., Guler M., Ipek G., Alp M., Yakut C.

Department of Cardiovascular Surgery, Kosuyolu Heart and Research Hospital, Istanbul, Turkey

**OBJECTIVES:** The appropriate surgical strategy for patients with combined carotid and coronary artery disease remains controversial. This controversy has been deepened by the patients who have significant bilateral carotid and coronary disease.

**METHODS:** Between June 2002 and October 2004, a retrospective nonrandomized chart review was performed in 15 patients with coronary artery disease coexisting bilateral carotid artery stenosis undergoing concomitant coronary revascularization and carotid endarterectomy using moderate systemic hypothermia to 25°C. Nine patients had bilateral carotid artery disease including more than or equal to 70% stenosis and contralateral occlusion. The remaining 6 patients had 80-99% bilateral stenosis. There were 11 males (73.3%) and 4 females (26.6%). Moderate systemic hypothermia (25°C) was instituted, and the carotid endarterectomy was performed during this period. The coronary revascularization was performed during the periods of cooling and rewarming.

**RESULTS:** There was no hospital mortality. The average number of grafts was  $2.7 \pm 0.7$  with mean carotid occlusion and cross-clamping time were  $14.5 \pm 0.7$  minutes and  $104 \pm 8.2$  hours, respectively. None of the patients had stroke. Mean hospital stay was  $7.6 \pm 0.8$  days. None of the patients required contralateral carotid endarterectomy during the follow-up period. There was no late stroke or death.

**CONCLUSIONS:** Combined coronary artery bypass grafting and carotid endarterectomy using moderate systemic hypothermia for cerebral protection is a safe and effective procedure for patients representing with concomitant coronary and significant bilateral carotid artery occlusive disease. **REF65**

**D41-OFF-PUMP LEFT ANTERIOR DESCENDING ARTERY GRAFTING USING RIMA IN REOPERATIVE CABG**

Eren E., Balkanay M., Toker M.E., Ozkaynak B., Keles C., Guler M., Yakut C.

Koşuyolu Heart and Research Hospital, Department Of Cardiovascular Surgery

**OBJECTIVE:** In situ right internal mammary artery is the graft of choice in the primary on-pump coronary artery bypass grafting as well as in reoperative off-pump coronary artery bypass grafting unless it has not been used previously. However, there are not enough data about postoperative angiographic findings of the in situ right internal mammary artery in reoperative coronary artery bypass grafting with the off-pump technique.

**METHODS:** From September 1993 to January 2004, we reviewed the postoperative course and the graft patency of 12 selected patients who underwent off-pump coronary artery bypass grafting reoperation only for the left anterior descending artery using pedicled right internal mammary artery. All patients were evaluated clinically and by postoperative coronary angiography for patency rate. Results. There were no early or late deaths during the mean follow-up period of  $33.08 \pm 30.05$  months (range, 1-77 months). The mean interval from primary operation to secondary operation was  $52.5 \pm 31.6$  days (range, 14 to 120 days).

Postoperative coronary angiographies of all patients showed the 100% patency rate for both insitu grafts and composite grafts. **CONCLUSIONS:** Using the in situ right internal mammary artery in the coronary artery bypass grafting reoperations for the left anterior descending artery with the off-pump technique may be a safe and reliable option. **REF64**

**D42 - RISK FACTORS FOR HOSPITAL MORTALITY IN PATIENTS ON WHOM AN INTRA AORTIC BALLOON PUMP WAS USED FOLLOWING OPEN HEART SURGERY**

Kiris I., Peker O., Okutan H., Yavuz T., Ocal A., Ibrism E.

*Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey*

**OBJECTIVES:** The objective of this retrospective study was to determine possible risk factors for hospital mortality in patients on whom the intra aortic balloon pump (IABP) was used following open heart surgery.

**METHODS:** A total of 52 patients who underwent open heart operations and on whom an IABP was used between January 2002 and June 2004 in our clinic were included into the study. Preoperative and intraoperative risk factors were compared between the patients who survived (group 1) and who could not (group 2).

**RESULTS:** Mean age of the patients was  $63.2 \pm 10.4$  and 42 (80.76 %) and 10 (19.23 %) of patients were male and female, respectively. Twenty (38.46 %) of all patients (group 2) died in the early postoperative period. When risk factors of patients who could survive and who could not were compared, there were statistically significant differences, namely, diabetes mellitus ( $p = 0.047$ ), cardiomegaly ( $p = 0.004$ ), concomitant heart valve disease ( $p = 0.019$ ), obesity ( $p = 0.049$ ), perfusion period ( $p = 0.00$ ) and aortic cross-clamp time ( $p = 0.026$ ).

**CONCLUSIONS:** Our study showed that, diabetes mellitus, cardiomegaly, concomitant heart valve disease, obesity and prolonged perfusion period and aortic cross-clamp time can be associated with increased hospital mortality. New clinic studies with higher number of patients should be done to clarify important risk factors for mortality in patients for whom IABP is needed following open heart surgery

**REF32**

**D43 - CLINICAL OUTCOME OFF-PUMP CORONARY ARTERY BYPASS GRAFTING**

Kunt A.S., Aydin S., Selli C., Demir D., Darcin O.T., Andac M.H.

*Department of Cardiovascular Surgery, Harran University Research Hospital, Sanliurfa, Turkey*

**OBJECTIVES:** In the recent years, off-pump coronary artery bypass (OPCAB) surgery has become an established surgical technique especially in Euroscore > 5 patients. The purpose of this study is to investigate the results of on the beating heart coronary bypass surgery in patients with Euroscore > 5.

**METHODS:** Eighty-six patients operated on the beating heart between April 2002 and January 2005 were included in this study. Mean age of patients  $61.5 \pm 8.9$  years and %89.64 were male. Preoperative patient risk factor was; smoking 23 patients (%27.90), diabetes mellitus 19 patients (%23.25), hypertension 34 patients (%40.69) and 6 patient cronic obstructive lung disease.

**RESULTS:** Mean of left ventricule ejection fraction of all patients was  $42 \pm 9.1$ , Euroscore was  $9.7 \pm 3.1$ . The mean number of bypassed grafts was  $1.99 \pm 0.6$ . Mean stay at intensive care unit  $19 \pm 5.2$  hour and at hospital  $7.5 \pm 1.5$  days. Intra-aortic balloon pump was used in eight patients (4.6%). Five patients (5.8%) received endarterectomy of at least one coronary artery. Hospital mortality was 3.4% with 3 patients.

**CONCLUSIONS:** Off-pump CABG can be performed with low mortality and morbidity in patients with Euroscore > 5

**REF26**

**D44 - DECREASE OF TOTAL ANTIOXIDATIVE CAPACITY DURING CORONARY ARTERY BYPASS SURGERY**

Kunt A.S.<sup>1</sup>, Selek S.<sup>2</sup>, Celik H.<sup>2</sup>, Demir D.<sup>1</sup>, Erel O.<sup>2</sup>, Andac M.H.<sup>1</sup>

<sup>1</sup>*Department of Cardiovascular Surgery, Harran University Research Hospital, Sanliurfa, Turkey*

<sup>2</sup>*Department of Biochemistry, Harran University Research Hospital, Sanliurfa, Turkey*

**OBJECTIVES:** Cardiac surgery induces an oxidative stress and this situation may lead to an impairment of cardiac function. In this study, we aimed to measure the changes of oxidative and antioxidative status in patients undergoing coronary artery bypass surgery (CABG). Materials: We studied 79 patients who underwent CABG with and without cardiopulmonary bypass (CPB). Thirty-nine patients were operated using CPB and 40 patients were operated without CPB. Blood samples were drawn before, during and after the surgery. Antioxidant status was evaluated by measuring TAC, oxidative status was evaluated by measuring total peroxide levels and oxidative stress index (OSI).

**RESULTS:** Total peroxide and OSI levels increased, while TAC decreased after the beginning of operations progressively, in all patients. There were negative correlations between TAC levels and aortic cross clamping period and anastomosis time ( $r = -0.553$ ,  $p < 0.001$  and  $r = -0.500$ ,  $p < 0.001$ , respectively). In addition, there was a positive correlation between TAC and ejection fraction ( $r = 0.647$ ,  $p < 0.001$ ).

**CONCLUSIONS:** During CABG oxidant and OSI levels significantly increase and TAC significantly decreases. This situation is influenced by long CPB and anastomosis time and also low ejection fraction. We concluded that the patients who are undergoing to CABG are exposed to potent oxidative stress and their TAC is impaired. We thought that supplementation of antioxidant vitamins such as vitamin C and E may be beneficial in patients undergoing to CABG. Key words: Antioxidant capacity, Cardiac surgery, Coronary artery bypass grafting, Oxidative stress.

**REF25**

**D45 - DECREASE OF TOTAL ANTIOXIDATIVE CAPACITY IN DEVELOPED LOW CARDIAC OUTPUT SYNDROME**

Kunt A.S.<sup>1</sup>, Andac M.H.<sup>1</sup>, Erel O.<sup>2</sup>

<sup>1</sup>*Department of Cardiovascular Surgery, Harran University Research Hospital, Sanliurfa, Turkey*

<sup>2</sup>*Department of Biochemistry, Harran University Research Hospital, Sanliurfa, Turkey*

**OBJECTIVES:** It has been known that cardiac surgery induces an oxidative stress. The persistent oxidative stress during reperfusion may lead to depressed myocardial function resulting in low cardiac output syndrome necessitating inotropic or intraaortic balloon counter pulsation support (LCOS). Total antioxidant capacity (TAC) is a measure of oxidative stress. The purpose of this study was to examine the TAC differences during coronary artery bypass (CABG) operation who have developed LCOS and who have not. Material and methods: Seventy-nine patients were enrolled in the study. Central venous blood samples were obtained immediately before surgery, during operation and at the end of surgery to assess TAC. Clinical data regarding patient demographics and operative outcomes were prospectively collected and entered into our clinical database.

**RESULTS:** LCOS developed in 8 patients (10.12%). The TAC has decreased sharply in the LCOS patients compared with those who did not develop LCOS ( $p < 0.001$ ) during operation. In addition, Receiver operating characteristic (ROC) area was 0.879.

**CONCLUSIONS:** TAC has decreased during operation in a significant proportion of patients undergoing isolated CABG and this is more prominent and serious and might be an independent variable in patients who have developed LCOS. This may be related to intraoperative misadventure or inadequate myocardial antioxidative protection. Routine measurement of the TAC during operation may provide information for assessment of the LCOS development. Key words: Cardiac surgery, low cardiac output syndrome, oxidative stress, total antioxidant capacity.

**REF24**

**D46-DOUBLE-PATCH REPAIR OF POSTINFARCTION VENTRICULAR SEPTAL DEFECT**

Balkanay M., Eren E., Keles C., Toker M.E., Guler M.

*Kosuyolu Heart and Research Hospital, Istanbul, Turkey*

**OBJECTIVES:** Creation of a secure patch in patients with postinfarction septal perforation (VSP) is particularly important on early and late outcome. Although numerous techniques and materials have been used to closure of VSP, the best technique has not been settled in this challenging pathology.

**CASE PRESENTATION:** We report 4 consecutive cases in which the double patch technique was used to repair inferior postinfarction ventricular septal rupture. The ventricular septal perforation was closed directly by stitching two autologous pericardial patches onto the both sides of the affected septum through the only left ventriculotomy by the same sutures. Complete closure of the ventricular septal perforation was accomplished and no residual shunt was observed in any patient.

**CONCLUSION:** This technique appears useful in selected patients such as ventricular septal perforation with myocardial infarction in sub-acute or chronic phase.

REF63

**D47-RIGHT INTERNAL MAMMARY ARTERY-RADIAL ARTERY COMPOSITE GRAFT FOR REDO CABG**

Eren E., Toker M.E., Keles C., Guler M., Balkanay M.

*Department of Cardiovascular Surgery, Kosuyolu Heart and Research Hospital, Istanbul, Turkey*

**OBJECTIVE:** Redo coronary artery bypass grafting is associated with higher mortality, low-output syndrome, perioperative myocardial infarction than primary coronary artery bypass grafting. Off-pump technique avoids the manipulation of old graft and injury of the adhesive heart in redo operation.

**CASE PRESENTATION:** We performed the beating heart operation for 4 redo cases using the in situ right internal thoracic artery-radial artery composite graft for the left anterior descending artery anastomosis. In all patient, the postoperative coronary angiogram showed the patent of the composite graft.

**CONCLUSION:** This technique may be a reliable alternative in patients require reoperation for the left anterior descending anastomosis.

REF78

**D48 - ROUTINE IMMEDIATE EXTUBATION FOR CORONARY ARTERY BYPASS GRAFTING IN EUROSCORE HIGH RISK PATIENTS**

Kunt A.S.<sup>1</sup>, Cengiz M.<sup>2</sup>, Kilic I.H.<sup>2</sup>, Andac M.H.<sup>1</sup>

<sup>1</sup>*Department of Cardiovascular Surgery, Harran University Research Hospital, Sanliurfa, Turkey*

<sup>2</sup>*Department of Anesthesiology, Harran University Research Hospital, Sanliurfa, Turkey*

**OBJECTIVES:** Fast-track anesthesia has gained widespread use in cardiac centers around the world. We performed fast-track cardiac anesthesia aiming toward to evaluate routine application of a technique allowing immediate extubation in EuroSCORE high risk patients who underwent isolated myocardial revascularization with and without cardiopulmonary bypass.

**METHODS:** From March 2002 to July 2004, 86 patients with EuroSCORE > 5 who underwent isolated myocardial revascularization were operated with or without cardiopulmonary bypass. Ultra-fast track general anesthesia technique used and a rapid recovery protocol emphasizing a remifentanyl and desflurane was administered in all patients. Duration of surgery, extubation time, and length of stay in intensive care and in hospital were recorded.

**RESULTS:** The off-pump patients were had significantly poor left ventricular function and high Euroscore than the on-pump patients ( $28.6 \pm 5.8$ ,  $40.5 \pm 7.4$  and  $12.1 \pm 1.8$ ,  $7.26 \pm 1.4$ , respectively,  $p < 0.05$ ). There was no significant difference in the number of grafts between the patients. The on-pump patients received  $2.03 \pm 0.7$  grafts per patient while off-pump patients received  $1.93 \pm 0.7$  grafts per patient. Mean duration of the surgery, anesthesia and operating room time were  $92.5 \pm 25$  min.,  $118.5 \pm 28.7$  min. and  $134.5 \pm 22.2$  min., respectively. Mean extubation time was  $19.5 \pm 10.25$  min. Length of stay in intensive care unit (ICU) was  $19 \pm 5.2$  h. Mortality rate was 3.48%.

**CONCLUSIONS:** Immediate extubation protocol (on average less than 30 min) may be safely achieved in EuroSCORE high risk patients to undergoing off-pump and on-pump coronary artery surgery. Keywords: Coronary artery bypass graft surgery; fast-track extubation, high risk. REF23

**D49 - RESULTS OF SURGICAL TREATMENT IN PATIENTS WITH LEFT VENTRICULAR ANEURYSM**

Kunt A.S., Darcin O.T., Aydin S., Demir D., Selli C.

*Department of Cardiovascular Surgery, Harran University Research Hospital, Sanliurfa, Turkey*

**OBJECTIVES:** Aneurysm repair is an important therapeutic intervention which improves the survival and life quality of patients with left ventricular aneurysm. In this study, we present our early results of patients with the left ventricular aneurysm which treated surgically.

**METHODS:** Between January 2001 and October 2002, 17 patients underwent surgical repair for posts ischemic left ventricular aneurysm. Fifteen (88.2%) of the patients were male and mean age was  $58.53 \pm 10.78$  years. Linear closure employed in all patients. Complete coronary revascularization was routinely added in all cases.

**RESULTS:** There was no early mortality. Low cardiac output developed in 5 (29.41%) patients and treated by inotropic agents and 2 of them intraaortic balloon pump support. Atrial fibrillation and ventricular arrhythmia developed in 5 (29.41%) of the patients and all of them converted to sinus rhythm with antiarrhythmic agents. Average stay in intensive care unit and hospital stay were  $2.83 \pm 1.29$  and  $7.74 \pm 2.14$  days, respectively. Functional status improved in all patients.

**CONCLUSIONS:** Regardless repair method left ventricular aneurysm repair combined with complete coronary revascularization can be performed safely with reliable improvements regarding survival and functional status. REF22

**D50 - CORONARY ARTERY BYPASS SURGERY IN HIGH RISK PATIENTS**

Kunt A.S., Darcin O.T., Andac M.H.

*Department of Cardiovascular Surgery, Harran University Research Hospital, Sanliurfa, Turkey*

**OBJECTIVES:** In high risk coronary artery bypass patients; off-pump or on-pump surgical strategies still remains a matter of debate which method results in a lower incidence of perioperative mortality and morbidity. We describe to our experience in the treatment of high risk coronary artery patients and compare patients assigned to on-pump or off-pump surgery.

**METHODS:** From March 2002 to July 2004, 86 patients with EuroSCORE > 5 who underwent myocardial revascularization were operated with or without cardiopulmonary bypass. The off-pump patients were had significantly poor left ventricular function and high Euroscore than the on-pump patients ( $28.6 \pm 5.8$ ,  $40.5 \pm 7.4$  and  $12.1 \pm 1.8$ ,  $7.26 \pm 1.4$ , respectively,  $p < 0.05$ ). On the basis of the coronary anatomy and possibility of achieving a complete revascularization, 40 patients were assigned to off-pump and 46 to on-pump operation.

**RESULTS:** The on-pump patients received  $2.03 \pm 0.7$  grafts per patient while off-pump patients received  $1.93 \pm 0.7$  grafts per patient. Mean duration of the surgery, anesthesia and operating room time were  $92.5 \pm 25$  min.,  $118.5 \pm 28.7$  min. and  $134.5 \pm 22.2$  min., respectively. Length of stay in intensive care unit (ICU) was  $19 \pm 5.2$  h. Postoperative atrial fibrillation rate was 11.62%.

**CONCLUSIONS:** The implementation of off-pump CABG does not bring significant clinical advantages in all high risk patients. This review supports the off-pump coronary revascularization seems to be an alternative concept for the treatment of patients with Euroscore  $\geq 10$  and left ventricular function of equal to or less than 30%.

REF21

**D51 - SUBFASCIAL ENDOSCOPIC PERFORATOR VEIN SURGERY COMBINED WITH SAPHENOUS VEIN ABLATION: RESULTS OF TWO YEARS**

Karacelik M.

*Department Of Cardiovascular Suregry, S.B.Izmir Tepecik Training Hospital, Izmir, Turkey*

**OBJECTIVES:** Subfascial endoscopic perforator vein surgery (SEPS) combined with ablation of superficial venous reflux is a treatment modality for venous ulcers and chronic venous insufficiency.

**METHODS:** Clinical data were retrospectively collected for 34 consecutive limbs (29 patients) in which this combination treatment was performed at a community hospital. Preoperatively, 21 lower extremities had an open venous ulcer (CEAP clinical class 6 [C(6)]) and 13 had healed ulceration (C(5)). Preoperative and postoperative ulcer care remained constant. Main outcomes measured included perioperative complications, ulcer healing, and ulcer recurrence. Mean patient follow-up was 24 months.

**RESULTS:** Greater saphenous vein (GSV) stripping and varicose vein excision accompanied SEPS in 31 limbs (91%), and SEPS was performed alone or with varicose vein excision in 3 limbs that had previously undergone GSV stripping. Postoperative complications occurred in 1 limb (2.9%), ulcer healing occurred in 100% of limbs with C(6) disease at a mean of 2.1 months (range, 15 days- 4 months) and no new ulcer developed at follow-up period. Clinical severity and disability scores improved significantly after surgery.

**CONCLUSIONS:** All venous ulcers healed with SEPS with ablation of superficial venous reflux heal rapidly and remain healed during long-term follow-up. Incompetent perforator veins lead to venous ulcers for their treatment SEPS with ablation of superficial venous reflux is an effective and safety treatment modality.

REF73

**D52 - IATROGENIC AORTIC DISSECTION AND ENDOVASCULAR TREATMENT IN A PATIENT WITH RIGHT ARCUS AORTA AND ABERRANT LEFT SUBCLAVIAN ARTERY**

Serter F.T.<sup>1</sup>, Cil B<sup>2</sup>, Tok M.<sup>1</sup>, Ozkan M.<sup>1</sup>, Ucar H.I.<sup>1</sup>, Farsak B.<sup>1</sup>, Yorgancıoğlu C.<sup>1</sup>, Boke E.<sup>1</sup>

<sup>1</sup>Hacettepe University Department of Cardiovascular Surgery, Sıhhiye, Ankara, Turkey,

<sup>2</sup>Hacettepe University Department of Radiology, Sıhhiye, Ankara, Turkey

**INTRODUCTION:** Right arcus aorta is a rare anomaly which is always seen with intracardiac anomalies in congenital heart disease especially in tetralogy of Fallot and persistent truncus arteriosus. The diagnosis of the right arcus aorta is possible in patients who underwent angiographic study for cardiac evaluation. In some patients, compression symptoms on esophagus and trachea due to retrotracheal subclavian artery can be observed.

**CASE PRESENTATION:** 70 years old male patient admitted to an outlying hospital with chest pain. He had no symptoms for cardiovascular system until angina pectoris occurred 2 months ago. On angiography a technical difficulty and back pain has occurred at the aortic arch level. With the suspicion of a dissection the procedure was terminated. The patient underwent a DSA in our hospital for aortic arch and there were origin anomaly of four major supraaortic vessels, which were leaving the arcus separately and also aberrant left subclavian artery and dissection of thoracic aorta beginning from origin of the aberrant left subclavian artery was found. An endovascular stent graft of 130mm length and 46mm width placed in thoracic aorta at the level of the dissection. Coronary angiography showed multivessel coronary artery disease. Because of the newly placed endovascular stent graft revascularization for 4 coronary arteries was performed with beating heart coronary artery by-pass grafting technique.

**CONCLUSIONS:** Presence of an unrevealed congenital anomaly of arcus aorta at adult age must be kept in mind if a technical difficulty occurs on angiography. In this kind of cases multidisciplinary evaluation must be performed.

REF89

**VASCULAR  
SURGERY I**

**D53 - OUR CLINICAL EXPERIENCE ON ASCENDING AORTIC ANEURISM AND UPPER BRACHIAL ARTERY SELECTIVE PERFUSION**

Yilmazkaya B.<sup>1</sup>, Gurkahraman S.<sup>1</sup>, Kucuker S.A.<sup>2</sup>, Ozatik M.A.<sup>2</sup>, Circi R.<sup>1</sup>, Colak N.<sup>1</sup>, Tasdemir O.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Akay Hospital, Ankara, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Yuksek İhtisas Hospital, Ankara, Turkey

**METHODS:** Sixty-five consecutive patients (19 female, 46 male) between January 2000 and May 2005 with ascending aortic aneurism were operated on. Their ages were between 29 and 75. Only 8 of the patients had fully competent aortic valves and received ascending aortic grafts (30mm Hemashield). In 3 of these patients resuspension of the aortic valve was performed. Root replacement with valved conduits (25mm ATS mechanical heart valve and 30mm Hemashield) was performed in 57 patients. Twenty-one of these patients underwent associated coronary artery by-pass grafting (CABG) operation. Cardiopulmonary bypass was applied through right upper brachial arterial cannulation in 32 of the patients with mild hypothermia. Selective cerebral perfusion periods were between 9 minutes and 51 minutes (mean 24 minutes).

**RESULTS:** Six patients in the CABG group received positive inotropes in the ICU and 2 of them died. Whereas there was no mortality in the upper brachial cannulation group and no neurological complications. All patients stayed in the ICU for one day and were all discharged on the 6th post-operative day.

**CONCLUSIONS:** Selective upper brachial antegrade cerebral perfusion is a comfortable and reliable technique. It does not necessitate deep hypothermia, it provides great exposure of the distal part of the anastomosis and it is safer by cerebral aspects. **REF95**

**D54 - EXTERNAL ILIAC ARTERY-TO-INTERNAL ILIAC ARTERY BY PASS : HYBRID REVASCLARIZATION TO PRESERVE PELVIC INFLOW IN AORTOILIAC STENT GRAFTING.**

Kurdal A.T.<sup>1</sup>, Denli S.<sup>1</sup>, Bozkurt A.K.<sup>1</sup>, Numan F.<sup>2</sup>, Sayin A.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Cerrahpasa Medical Faculty, Istanbul, Turkey

<sup>2</sup>Department of Radiology, Cerrahpasa Medical Faculty, Istanbul, Turkey

**OBJECTIVES:** Endovascular repair of aortoiliac aneurysms may be complicated by the extension of the aneurysm to the iliac bifurcation. Bilateral internal iliac artery occlusion during EVAR may be associated with gluteal claudication, erectile dysfunction, and ischemia of the sigmoid colon and perineum. We have used an external iliac artery-to-internal iliac artery by-pass to permit endograft implantation in the external iliac artery while protecting flow to the internal iliac artery in a patient with an aneurysm involving the iliac bifurcation bilaterally.

**METHODS:** A patient with multiple risk factors, an abdominal aortic aneurysm and bilateral common iliac artery aneurysm was diagnosed using contrast-enhanced computed tomography and arteriography. Aortobiliac endovascular abdominal aortic aneurysm repair was not recommended because of the bilateral extension of the common iliac artery aneurysm to the iliac bifurcation. Internal iliac artery revascularization was accomplished via a retroperitoneal incision 3 days before the EVAR. Endovascular AAA repair was performed using an aortobiliac endograft that extended to both external iliac arteries.

**RESULTS:** Successful internal iliac artery revascularization and endovascular AAA repair were accomplished. No endoleaks occurred. Neither gluteal claudication, erectile dysfunction, colon or perineal ischemia, nor any other mortality occurred.

**CONCLUSIONS:** External iliac artery-to-internal iliac artery by pass may be used to prevent pelvic ischemia in patients whose aneurysm anatomy requires extension of the endograft into both external iliac arteries. This may allow endovascular AAA repair to be performed in patients who might otherwise be at risk of developing complications associated with bilateral internal iliac artery occlusion. **REF35**

**D55-ENDOVASCULAR REPAIR OF ABDOMINAL AORTIC ANEURYSM**

Hazan E.<sup>1</sup>, Men S.<sup>2</sup>, Gulcu A.<sup>2</sup>, Ugurlu B.<sup>1</sup>, Sariosmanoglu N.<sup>1</sup>, Guzeloglu M.<sup>1</sup>, Oto O.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Dokuz Eylul University Medical School, Izmir, Turkey

<sup>2</sup>Department of Radiology, Dokuz Eylul University Medical School, Izmir, Turkey

**OBJECTIVES:** To present our initial experience in endovascular repair of infra renal abdominal aortic aneurysms

**METHODS:** Between March-June 2005 3 (All Male) patients underwent repair of abdominal aortic aneurysms. Ages of the patients were 66, 73, 84 and the aneurysms were between 4.5-6.5 cm in diameter. A CT angiogram was performed in all 3 patients before surgery. The procedure was performed in the catheterization laboratory, patients were prepared and draped same as an open procedure. Both right and left femoral arteries were accessed by surgical dissection. Procedure was performed under local anesthesia-sedation in 2 cases and under general anesthesia in one patient.

**RESULTS:** Bifurcated covered stents (Excluder) measuring 3.5-4 cm in diameter was used in all three patients. In all three patients one leg of the stent graft extended to the external iliac artery. Procedure time was 2-3 hours. Significant endoleak was observed in none of the patients. All three patients tolerated the procedure well with no complications and were discharged within 48 hours.

**CONCLUSIONS:** Endovascular repair of infrarenal abdominal aneurysms can be performed with ease in most patients. This technique might be particularly useful in patients with high surgical risk. **REF125**

**D56-THE SURGICAL TREATMENT OF ANEURYSMATIC LESIONS OF THE ASCENDING AORTA: THIRTEEN YEARS' EXPERIENCE AT A REGIONAL CARDIAC CENTRE: THE EARLY AND MID-TERM RESULTS IN 21 PATIENTS**

Becit N., Erkut B., Ceviz M., Unlu Y., Kaygin M.A., Kocak H.

Department of Cardiovascular Surgery, School of Medicine Ataturk University, Erzurum, Turkey

**OBJECTIVES:** This study evaluates the early and mid-term outcomes of patients undergoing surgery for aneurysms of ascending aortic aneurysm and adds cardiac diseases in a single institution.

**METHODS:** We retrospectively analyzed 21 patients who treated surgically by same surgical team from January 1992 till May 2005 with ascending aortic aneurysms. Patients with acute or chronic aortic dissecting were excluded in this study. In addition to ascending aortic aneurysm, 3 patients had added cardiac problems. Emergency operation was performed in 5 (23.8%) patient. The mean follow-up time was 92 months (2-130 months) for all the patients.

**RESULTS:** The operative mortality was occurred in 1 patient who had undergone the Bentall procedures. There was no early postoperative and hospital mortality. Annuloaortic ectasia was the most frequent cause of aortic disease in this series. Operative techniques were aortic root replacement with a button-Bentall procedure, aortic root replacement using a flanged composite graft that is new modification of the Bentall technique, and supracoronary replacement of ascending aorta. Besides, concomitant operative procedures were undergone in 3 patients. The aneurysm was not suitable distal ascending aortic clamping and expanded through the aortic arch in patients; in those patients brain protection was executed by adopting deep hypothermia circulatory arrest combined with retrograde cerebral perfusion. In the mid-term clinical follow-up, all of patients are surviving, and not required reoperation. Furthermore, this period was marked by a complete absence of endocarditis, anticoagulant-related hemorrhage, and valve thrombosis and prosthesis failure. Survival at 2 years was 100%.

**CONCLUSIONS:** The early and mid-term results of the button-Bentall and the flanged composite graft procedures were excellent. The Bentall operation is more appropriate for patients with aortic root abnormality and a dilated ascending aorta in terms of thromboembolic risk and bleeding. Besides, the flanged composite graft is especially helpful to continue physiologic function of the aortic root and to reduce to morbidity and mortality. **REF68**

**D57-INTERNAL CAROTID ARTERY ENDOVASCULAR STENTING TO THE PATIENTS WITH CONTRALATERAL TOTAL OCCLUSION: A GOOD AND EFFECTIVE TREATMENT ALTERNATIVE**

Sirikci A.<sup>1</sup>, Kervancioglu S.<sup>1</sup>, Kazaz H.<sup>2</sup>, Ustunsoy H.<sup>2</sup>, Ceran F.<sup>1</sup>

<sup>1</sup>Department of Radiology, Gaziantep University School of Medicine, Gaziantep, Turkey,

<sup>2</sup>Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey

**OBJECTIVES:** The aim of the study is to evaluate the clinical efficacy of the endovascular stenting to the internal carotid artery (ICA) whom have the total occlusion at the contralateral side.

**METHODS:** Eight patients who have the total occlusion at one side ICA and whom have the 60% stenosis with Doppler USG + symptoms or 70% stenosis ± symptoms at the contralateral side ICA are enrolled in this study. Seven patients were male and one was female. Protective filter was used to all of the patients. Diffusion MRI was performed to all patients before and after the procedure. All patients follow-up were done with clinical examination and colour Doppler USG at the first week, 1st, 3rd, 6th months.

**RESULTS:** Before the endovascular stenting definitive DSA was performed. In one patient 60%, in three patients 80-90%, in one patient 95% and in three patients preocclusive (>95%) carotid lesions were seen. All stenting procedures were performed successfully and there was no residual stenosis or any complication. There was no new ischemic changing at the post procedure diffusion MRI. We didn't see any neurological disorder at the follow-up period, also stents are patent with the Doppler USG.

**CONCLUSIONS:** Due to contralateral carotid artery total occlusion the risk of the carotid surgery is high. No need to general anesthesia, no blood flow loss during the procedure, protecting filter that may decrease the risk of thromboembolism makes the endovascular stenting treatment is a good and effective alternative treatment. **REF152**

**D58-TWO-STAGE SURGERY FOR ASCENDING AORTIC ANEURYSM ASSOCIATED WITH COARCTATION OF THE AORTA: A CASE REPORT**

Erkut B.<sup>1</sup>, Ozyazicioglu A.<sup>1</sup>, Kocak H.<sup>1</sup>, Erol M.K.<sup>2</sup>

<sup>1</sup>Department of Cardiovascular Surgery, School of Medicine Ataturk University, Erzurum-Turkey

<sup>2</sup>Department of Cardiology, School of Medicine Ataturk University, Erzurum-Turkey

**OBJECTIVES:** We present a case of aneurysm of the ascending aorta associated with aortic coarctation and suspicion of aortic dissection, which we treated successfully with a 2-stage operative approach.

**METHODS:** A 33-year-old man was admitted to our unit for dizziness sudden onset of retrosternal, constrictive pain that suggested an acute cardiac problem. On clinical examination, A 3/6 systolic murmur was heard in the aortic area and he had hypertension. The blood pressure in his upper extremities was 220/100 mmHg, his pulse rate was 65 beats/min; carotid and radial pulses were exist and symmetrical, whereas femoral pulses were absent. Chest radiography showed middle mediastinal widening, and evidence of bilateral rib notching. Electrocardiography was showed left ventricular hypertrophy. Transthoracic echocardiography demonstrated the minimally presence of fluid in the pericardial cavity, a dilated ascending and aortic root (approximately 7 cm), an advanced aortic valvular incompetence, and a suspicion of intimal flap in the ascending aorta. A computerized tomogram of the chest revealed an aneurysm of the ascending aorta, and a coarctation of the descending aorta. The interscapular and chest pain was increased after one hour from admit. The patient's clinical condition deteriorated so dramatically that he was taken immediately to the operating room, because of enlargement ascending aorta, suspicion of dissection, and rupture risk. The patient was performed a median sternotomy. The aneurysmal ascending aorta was thinned but not discolored. The aneurysm was limited to the ascending aorta. Cardiopulmonary bypass was routinely instituted. In ascending aorta did not appear dissected. The sinuses of valsalva were abnormal. The aortic valve was excised, and the segment of the ascending aorta comprising the aneurysmal was resected. Later was performed with flanged technique ascending aorta and root replacement by using a mechanical aortic prosthesis and a tubular 28-mm graft material. The remaining postoperative stay was also uneventful. In postoperative period, because the clinical findings and preoperative CT were highly suggestive of a coarctation of the thoracic aorta, 3-dimensional and multislice computed tomography was made at the thoracic region. This confirmed the presence of the thoracic coarctation, which revealed a severe coarctation of the aorta, just distal to the take-off of the left subclavian artery. The patient was discharged home on the 15th postoperative day with anti-hypertensive medications for then coarctation repair. A month after the repair of the aneurysm, the patient underwent elective correction of the aortic coarctation. A left posterolateral thoracotomy was carried out. We observed marked dilatation of the descending aorta. The narrow isthmus segment was entirely resected and the patchplasty was performed between the distal aortic arch and the thoracic aorta with piece dacron graft with a continuous 5/0 prolene suture.

**RESULTS:** The patient was discharged on the 7th postoperative day. At the 2 months follow-up, he was free of complications and two-dimensional echocardiography revealed normal heart contractility, good function of the aortic valvular prosthesis, a regular ascending aorta, and no evidence of aneurysm.

**CONCLUSIONS:** The two-stage approach to repair of these complex lesions is not solely a profitable option: in critical clinical situations, repair of the acute dissection or ascending aortic aneurysm together with rupture risk followed by elective correction of the coarctation may prove lifesaving. Although antegrade perfusion with axillar cannulation may enough in the presence of a well developed collateral circulation, more appropriate perfusion to the upper and lower parts of the body is presumably best accomplished by divide antegrade and retrograde cannulation. **REF71**

**D59-THE TREATMENT OF THE ILIAC ARTERY STENOSIS WITH BALLOON EXPANDABLE STENTS**

Kervancioglu S.<sup>1</sup>, Kazaz H.<sup>2</sup>, Sirikci A.<sup>1</sup>, Ustunsoy H.<sup>2</sup>, Celkan M.A.<sup>2</sup>

<sup>1</sup>Department of Radiology, Gaziantep University School of Medicine, Gaziantep, Turkey,

<sup>2</sup>Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey

**OBJECTIVES:** Self expandable stents are widespread treatment options for the iliac artery stenosis. The most important problem of the self expandable stents are the difficulty of the length of the stents in the stenotic artery. This may cause length fits of the stents and very short length stents may be inserted. In recent years balloon expandable stents are using to overcome the problem. This is a new treatment option and we aimed to share our clinical experiences in 20 patients.

**METHODS:** The 20 patients who have the claudication intermittens and critical stenosis with Doppler USG were enrolled at the study. 21 common iliac and 4 external iliac lesions were stented with the balloon expandable stents.

**RESULTS:** In all patients stents were inserted successfully. In two patients kissing stenting were performed due to bilateral ostial common iliac artery occlusion. In 7 patients proximal common iliac artery, in 10 patients mid common iliac artery and in 4 patients external iliac artery were expanded with balloon expandable stents and there were no residual stenosis. In one case there is a dissection that makes 30% stenosis and no symptoms at the proximal edge of the stent. There were no major complication and also no clinical symptoms.

**CONCLUSIONS:** Endovascular balloon expandable stents are the good and effective treatment options at the iliac artery stenosis. Beyond the risks of the intraabdominal surgical procedures endovascular balloon expandable stents are a good alternative treatment at the selected patients. **REF154**

**D60-MYCOTIC SACCULAR AORTIC ARCH ANEURYSM: TREATMENT WITH ENDOLUMINAL GRAFTING**

Ugurluca M.<sup>1</sup>, Alpogut U.<sup>1</sup>, Sayin O.A.<sup>1</sup>, Kafali E.<sup>1</sup>, Surmen B.<sup>1</sup>, Guven K.<sup>2</sup>, Barlas S.<sup>1</sup>, Dayioglu E.<sup>1</sup>, Rozanes I.<sup>2</sup>, Onursal E.<sup>1</sup>

<sup>1</sup>Istanbul University Istanbul Medical Faculty, Department of Cardiovascular Surgery, Istanbul, Turkey

<sup>2</sup>Istanbul University Istanbul Medical Faculty, Department of Radiology, Istanbul, Turkey

**OBJECTIVES:** Endovascular grafts have been popular for the treatment of aneurysms for patients to whom conventional surgical methods could bring high mortality and morbidity. Nowadays, with the increasing experience and refinements in the graft technology, they are frequently performed for the aneurysms of critical segments of the aorta, such as thoracic and arch levels. Here, we present a patient who has been treated with an endovascular graft for the mycotic saccular aneurysm located just below the left subclavian artery.

**METHODS:** A 38-year-old male patient presented with hoarseness to the haematology clinic where he had been treated for acute lymphoblastic leukemia. He was a retired soldier. There was ankylosing spondylitis and chronic hepatitis B infection in his history. He had been a treated cocaine addict.

**RESULTS:** Chest X-ray showed an unusual opacity on the left upper margin of sternum. Laryngeal examination revealed vocal cord palsy. The pathology was further analyzed with spiral CT and scans showed a saccular aneurysm located at the distal aortic arch. Aneurysm was treated with endoluminal stenting. Control CT scans demonstrated correct graft positioning, majorly thrombus formation inside the aneurysm sac with minimal retrograde flow from the subclavian artery.

**CONCLUSIONS:** Especially for high-risk patients, endoluminal treatment for mycotic aneurysms and for the aneurysms located at the critical segments of aorta is an attractive alternative procedure to the conventional open surgery. Although his treatment has not been fully successful, our patient is a rare case. Further information and long-term follow up results of similar studies are needed. **REF3**

**D61-EXTRACRANIAL INTERNAL CAROTID ARTERY ANEURYSMS: SURGERY VS. ENDOVASCULAR STENTING**

Sayin O.A.<sup>1</sup>, Ugurlucan M.<sup>1</sup>, Surmen B.<sup>1</sup>, Akyol Y.<sup>2</sup>, Guven K.<sup>2</sup>, Alpagut U.<sup>1</sup>, Barlas S.<sup>1</sup>, Dayioglu E.<sup>1</sup>, Acunas B.<sup>2</sup>, Onursal E.<sup>1</sup>

<sup>1</sup>Istanbul University Istanbul Medical Faculty Department of Cardiovascular Surgery, Istanbul, Turkey

<sup>2</sup>Istanbul University Istanbul Medical Faculty Department of Radiology, Istanbul, Turkey

**OBJECTIVES:** Aneurysms at the extracranial portion of the internal carotid artery are rare disorders with an incidence of %0.8-1. They usually present as parapharyngeal pulsatile masses compressing the surrounding structures. Main etiologic factor is atherosclerosis. Thrombosis and ischemic problems are the major complications. Here, we will present and compare two different patients treated with two different methods.

**METHODS:** The first patient was a 66 year-old women presented with a growing pulsatile mass under the right mandibular angle in the neck region. Doppler USG showed tortuosity and aneurysm of the right extracranial internal carotid artery with parietal thrombosis. CT confirmed the diagnosis. The second patient was a 68 year-old man presented with transient ischemic attacks. There was a saccular aneurysm and stenosis at the right internal carotid artery detected by doppler USG and angiography.

**RESULTS:** First patient underwent surgical treatment and excision of the aneurysm and end-to-end anastomosis of the carotid artery was performed. She was discharged on the third day following an uneventful postoperative course. Second patient was treated with balloon angioplasty and endovascular stenting. The procedure was uneventful and he was discharged on the following day. Both patients are free of symptoms.

**CONCLUSIONS:** Extracranial carotid artery aneurysms must be managed otherwise disastrous thromboembolic complications may occur. Both endovascular and conventional surgical methods can be performed, however endovascular treatment seems to be easier and comfortable. Since the pathology is very rare further information and long-term follow up results of such studies are needed. **REF6**

**D62-ENDOLASER SURGERY: A NOVEL TECHNIQUE FOR TREATMENT OF SUPERFICIAL VARICES RELATED TO SYMPTOMATIC INSUFFICIENCY OF VENA SAPHENA MAGNA**

Metin K.<sup>1</sup>, Oto O.<sup>1</sup>, Celik M.<sup>1</sup>, Aygun M.<sup>2</sup>

<sup>1</sup>Ege Saglik Hospital Izmir Turkey,

<sup>2</sup>Ege Saglik Foundation Izmir Turkey

**OBJECTIVES:** Superficial varicose veins of lower extremities related to saphenofemoral insufficiency are a common health problem in normal population with an incidence of 15% to 25%. Most of those patients have the symptoms of restless leg, increased diameter of the affected extremity and cosmetic problems. Stripping of the vena saphena magna and excision of varicose veins is the standard treatment method in those cases. This procedure requires general or regional anesthesia and can be performed in the operating theatre. The patients have to be hospitalized for several days. Multiple skin incisions and poor cosmetic results are important postoperative disadvantages of this operation. Endoscopic laser technique has principal same results such as stripping. In this method, vena saphena magna is occluded with laser beam energy and regurgitation of the blood through the vein is stopped. It can be applied safely in outpatient conditions especially in private praxis, with the help of tumescent anesthesia. It offers very satisfying cosmetic results and the patient can walk after the procedure. There is no need for a skin incision and the whole procedure can be done percutaneously.

**METHODS:** We have used endolaser technique for 16 patients with saphenofemoral regurgitation. Doppler ultrasound examination has been performed in all cases before and after the procedure and at the end of 1st week.

**RESULTS:** All patients were satisfied with cosmetic results of the procedure and Doppler examination showed total occlusion of insufficient varicose saphenous vein.

**CONCLUSIONS:** We think that this method is a good alternative to stripping method with clinical and radiological results. **REF167**

**D63-ENDOVASCULAR REPAIR OF ABDOMINAL AND THORACIC AORTIC PATHOLOGIES IN 62 PROCEDURES**

Arbatti H.<sup>1</sup>, Tandogan A.<sup>1</sup>, Yagan N.E.<sup>1</sup>, Arpaz M.<sup>1</sup>, Yilmaz O.<sup>1</sup>, Tekin S.<sup>2</sup>, Numan F.<sup>3</sup>, Sonmez B.<sup>1</sup>

<sup>1</sup>Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey

<sup>2</sup>Anesthesiology, Memorial Hospital, Istanbul, Turkey

<sup>3</sup>Radiology, Memorial Hospital, Istanbul, Turkey

**OBJECTIVES:** Major aortic surgery has high morbidity and mortality due to serious surgical trauma, poor status of the patient and high amount of blood transfusion. Endovascular repair can be a safer alternative and complementary approach for patients with true and false aneurysms or dissections of the aorta. Early and midterm results of 62 procedures (in 59 patients) were evaluated in this study.

**METHODS:** Between July 2001 and May 2005, 49 patients with abdominal aortic aneurysms (AAA), and 13 patients with thoracic aortic pathologies including aneurysms, dissections and false aneurysms were treated with endovascular stent-graft implantation in our department.

**RESULTS:** There were 27 aorto-bi-iliac, 18 aorto-uni-iliac, and 2 straight aortic stent-grafts were implanted in 49 AAA patients while elective open surgery was performed in 2 patients due to access failure. Five patients with thoracic aortic dissection, 6 with thoracic aortic aneurysm, one with posttraumatic false aneurysm and one with anastomotic false aneurysm and aorto-bronchial fistula were treated with thoracic stent-grafts. The mean age was 65.47 ± 9.50. Primary success rate was 96.7 %. Type I endoleak occurred in two AAA and one thoracic aneurysm patients. Secondary endovascular procedures were performed with success in two of them. The mean follow-up was 20.12 ± 13.33 months. There was no hospital mortality.

**CONCLUSIONS:** Endovascular repair is a complementary and alternative treatment of aneurysms, false aneurysms and dissections of the aorta in patients with suitable anatomical features. This treatment modality is promising and could be the first choice of aortic surgery in the future. **REF46**

**D64-HYBRID PROCEDURES IN COMBINED THORACIC AND ABDOMINAL AORTIC ANEURYSMS**

Arbatti H.<sup>1</sup>, Arpaz M.<sup>1</sup>, Yagan N.E.<sup>1</sup>, Tandogan A.<sup>1</sup>, Demirsoy E.<sup>1</sup>, Soybir N.<sup>2</sup>, Numan F.<sup>3</sup>, Sonmez B.<sup>1</sup>

<sup>1</sup>Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey

<sup>2</sup>Anesthesiology, Memorial Hospital, Istanbul, Turkey

<sup>3</sup>Radiology, Memorial Hospital, Istanbul, Turkey

**OBJECTIVES:** Combined thoracic aortic aneurysm (TAA) and abdominal aortic aneurysm (AAA) has high morbidity and mortality if both are to be repaired with conventional surgery in one stage. On the other hand, staged repair may also not be feasible. The results of combined open surgical and endovascular treatment in patients with TAA and AAA were evaluated in this study.

**METHODS:** Eight patients with TAA and AAA were treated with combined surgical and endovascular procedures between February 2003 and February 2005 in our hospital. There were 6 male and two female patients with a mean age of 63.2 ± 4.40. Mean follow-up was 16.46 ± 9.18 months.

**RESULTS:** All procedures were completed successfully as planned. An additional extender stent-graft had to be implanted as a secondary approach because of stent-graft migration and type I endoleak in one patient. Type II endoleak present in the early period resolved spontaneously in another. One patient was lost due to aneurysm-unrelated causes after 6 months. All other patients are still followed-up.

**CONCLUSIONS:** In selected cases endovascular treatment can minimize the risk of surgery when performed as combined approach. Improvement in the stent-graft technology will certainly improve the results in such complicated cases. **REF45**

## VALVE SURGERY

### D66-ALTERNATIVE APPROACH IN REOPERATIVE VALVE SURGERY

Ozler A., Yilmaz M., Tarhan I.A., Arslan I.Y., Berkoz M.K.

*Department of Cardiovascular Surgery, Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey*

**OBJECTIVES:** Re-operations in valve surgery are technically more difficult because of dense mediastinal adhesions and cardiac status of the patient. Increased mortality and morbidity are generally associated. Sometimes extensive adhesions preclude safe dissection, bicaval cannulation and aortic clamping. Deep hypothermic circulatory arrest is a good choice on this patients.

**METHODS:** We report the results of mitral and tricuspid valve replacement with deep hypothermic circulatory arrest in two patients. Arterial cannulation was performed via femoral artery in patients. Venous cannulation sites were femoral vein and right atrium.

**RESULTS:** The patients' postoperative course was uneventful, and they were discharged home on the 7th and 10th postoperative days.

**CONCLUSIONS:** Although there are several techniques on redo valve surgery, deep hypothermic total circulatory arrest is useful in unexpected cases.

REF164

### D65-SUCCESSFULLY TREATED BRUCELLA PANCARDITIS WITH DISSECTING AORTIC ROOT ABSCESS AND CAUSING VENTRICULAR SEPTAL DEFECT

Biyik I.<sup>1</sup>, Metin K.<sup>4</sup>, Oto O.<sup>2</sup>, Ergene O.<sup>3</sup>

<sup>1</sup>Department of Cardiology, Usak State Hospital, Usak, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, 9 Eylül University Hospital, Izmir, Turkey

<sup>3</sup>Department of 2. Cardiology, Atatürk Educational Hospital, Izmir, Turkey

<sup>4</sup>Ege Saglik Hospital, Izmir, Turkey

**OBJECTIVES:** Brucella carditis is very rare but a life threatening complication of brucellosis. The most common form of this carditis is endocarditis. Pancarditis associated with systemic brucella infection is extremely rare and mortality is very high. Here, we aimed to describe a case of successfully treated pancarditis due to brucellosis.

**CASE PRESENTATION:** 38 year old man who is a farmer referred to emergency department of our hospital with the diagnosis of heart failure from a peripheral hospital where he had been treated for brucellosis for 20 day, physical examination, x ray and laboratory tests revealed hypotension, muffled heart sounds, S4 gallop, hepatomegaly, splenomegaly, basal pulmonary rales, cardiomegaly, bilateral pleural effusion, mild anemia, myocardial injury and 1/1280 brucella seropositivity. Urgent echocardiography revealed circumferential large pericardial effusion with signs of cardiac tamponad, global hypokinesis of left ventricular wall motion, a large vegetation on right cusp of aortic valve and three mycotic aneurisms on aortic wall. Urgent echocardiography guided pericardiocentesis was performed and heart failure therapy, antibiotics were administered. After seven days, serial echocardiographic monitoring showed signs of aortico-right ventricular fistulisation of mycotic aneurisms. Hence, surgical aneurismectomy and aortic valve replacement were performed. Seven day after surgery, small subaortic ventricular septal defect was demonstrated by echocardiography. Second surgery was planned about two months later. This patient has been monitored with serial echocardiographic examinations.

**CONCLUSIONS:** Serial echocardiographic monitoring of the patient and close connection with cardiology and cardiovascular surgery are of crucial importance and mandatory in the treatment of this life threatening complication of brucellosis

REF19

### D67-ONE STAGE CORRECTION FOR SEVERE MITRAL REGURGITATION IN A PATIENT WITH SEVERE PECTUS CARINATUS

Dogan R.<sup>1</sup>, Ucar H.I.<sup>1</sup>, Demirozu T.<sup>1</sup>, Baytore B.<sup>1</sup>, Yazicioglu A.<sup>1</sup>, Celiker A.<sup>2</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey,

<sup>2</sup>Department of Pediatric Cardiology, Hacettepe University, Ankara, Turkey

**OBJECTIVES:** The combination of cardiac disease and chest wall abnormalities such as pectus carinatus requiring operative correction represents a clinical challenge to the surgeon. Pectus deformities are the most common congenital chest wall malformations and are usually seen as an isolated congenital abnormality. However, it is occasionally associated with cardiac abnormalities, such as congenital or valvular heart disease. Surgical correction of pectus carinatus is mainly performed for cosmetic and physiological reasons.

**CASE:** A 7 year-old girl was admitted to the Hacettepe University Hospital due to severe mitral regurgitation and severe pectus carinatus. Operation was started by midline incision. Thereafter, subperichondrial resection of the third to seventh costal cartilages with an elevator was performed bilaterally from the costochondral junctions to the point at which they flatten to join the costal arch. Total subperichondrial resection of the deformed costal cartilages was achieved by incising the perichondrium anteriorly, and the entire were removed to the costochondral junctions bilaterally. Subperichondrial bed was divided from the right side of sternum longitudinally. Through this opening, pericardium was opened and the cardiopulmonary bypass was instituted. Mitral valve replacement was performed with the use of No 33 St Jude prosthesis. After xiphoid resection sternum was deviated posteriorly to the orthotopic normal position with the use of Inion CPS bioabsorbable fixation system. Without sternal osteotomy bioabsorbable sheets was screwed to the sternum and osseous costal ends. Excellent cosmetic results was obtained.

**CONCLUSIONS:** Cardiac problems can contribute to postoperative hemodynamic instability if the pectus deformity is left uncorrected. This approach allowed safe isolation of the target cardiac structures, provided excellent operative exposure and enhanced chest wall stability by preserving the integrity of the sternum. Both the cardiac and the pectus deformities can be corrected through the same incision in one stage. In this patient, chest wall stability was achieved without osteotomy by use of bioabsorbable sheets implantation (sternum-costal ends).

REF153

**D68-INFECTIVE ENDOCARDITIS OF THE AORTIC VALVE COMPLICATED BY RUPTURE OF A SINUS OF VALSALVA INTO THE RIGHT ATRIUM**

Iriz E., Tasoglu I., Zor H., Ozgul H., Ereren E., Kalaycioglu S.

Department of Cardiovascular Surgery, Gazi University, Ankara, Turkey

**OBJECTIVES:** The ruptured sinus of valsalva in patient is infrequently reported. It may be congenital or acquired, and is often associated with ventricular septal defect or aortic valve abnormality Infective endocarditis (IE) of the aortic valve is most commonly associated with perivalvular invasion and intracardiac fistula formation.

**CASE PRESENTATION:** We present a 35 year old man in which IE of the aortic valve. He was later complicated by rupture of a sinus of Valsalva with a fistula into the right atrium. The patient underwent emergency open-heart operation, including aortic valve replacement and patch closure of the rupture site. During operation, an acquired perforation of the coronary sinus were shown. No aneurysmal dilatation of the sinus of Valsalva was found.

**CONCLUSIONS:** Rupture of a sinus of Valsalva as a result of IE can occur in an acquired aneurysm or in the absence of a preceding aneurysm, although most aorticocardiic fistulas develop in association with infected or noninfected congenital aneurysms of these potential conditions, an aorticocardiic fistula without formation of an aneurysm is very unusual. IE of the aortic valve is most commonly associated with such fistula formation This complication of bacterial IE of the aortic valve is still uncommon, but alertness to its diagnosis makes possible early and successful surgical treatment.

Figure



Intraoperative TEE demonstrating the rupture of a sinus of Valsalva with a fistula into the right atrium REF148

**D69-MITRAL ANNULOPLASTY WITH BIODEGRADABLE RING FOR ENFEKTIVE ENDOCARDITIS: A NEW TOOL TO THE SURGEON FOR VALVE REPAIR IN CHILDHOOD**

Kazaz H.<sup>1</sup>, Celkan M.A.<sup>1</sup>, Ustunsoy H.<sup>1</sup>, Baspinar O.<sup>2</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey

<sup>2</sup>Department of Pediatric Cardiology, Gaziantep University School of Medicine, Gaziantep, Turkey

**OBJECTIVES:** The incidence of bacterial endocarditis and valvular involvement is rare in childhood period. If patient is unresponsive to medical treatment and some complications occur, early surgical treatment is indicated. Debridement of vegetations combined with valve repair techniques sparing the native valve is ideal surgical procedure instead of replacement especially for children.

**CASE PRESENTATION:** We describe a pediatric patient with Brucella endocarditis at mitral position who was treated successfully with valve repair using biodegradable annuloplasty ring (Kalangos® Biodegradable Ring).

**CONCLUSIONS:** Annuloplasty is the key step during valve repair procedures. On the other hand, absence of appropriate sized annuloplasty rings on the market for this group of patients is the main problem. Nondegradable annuloplasty rings might lead to stenosis as the child grows. Thus, biodegradable tissue engineered materials are new solutions for such patients since the fibrous tissue induced by implanted ring grows by time. REF133

**D70-MIDTERM CLINICAL RESULTS OF AORTIC VALVE REPLACEMENT WITH STENTLESS XENOGRAFTS AND CRYOPRESERVED AORTIC HOMOGRAFTS**

Vuran C.<sup>1</sup>, Simon P.<sup>2</sup>, Aksoy P.<sup>1</sup>, Wollonek G.<sup>2</sup>, Sasmazel A.<sup>1</sup>, Gurbuz T.<sup>1</sup>, Mercan S.<sup>1</sup>, Kaya S.<sup>1</sup>, Aytac A.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Anadolu Health Center, Kocaeli, Turkey

<sup>2</sup>Vienna University, Department of Cardiothoracic Surgery, Vienna, Turkey

**OBJECTIVES:** This study was performed to compare the midterm clinical results of aortic valve replacement (AVR) with stentless xenografts and cryopreserved aortic homografts

**METHODS:** 209 patients (122 males, 87 females) underwent aortic valve replacement at Vienna University Department of Cardiothoracic, between September 1994 and February 2002. Cryopreserved homograft were used in 40 of them (aged 0-79, median:40); whereas stentless xenografts were used the rest of the patients (aged 9-84, median:68). The valve sized ranged from 7 to 32mm. The median diameter was 19,1mm for Homografts; 24,5mm for Freestyle Stentless Xenograft; 23,9mm for Prima Plus Stentless Bioprothese; 24,3mm for Toronto SPV and 23mm for Sorin Pericarbon Stentless. Graft failure was defined as the need for explantation and valve related death and dysfunction was defined as a insufficiency of grade 3/4 or greater and a transvalvular gradient of 45mmHg or greater.

**RESULTS:** 169 patients were followed-up for 67+/-22 months. There were 13 late deaths, 2 in the homograft group and 11 in the stentless group. Only 2 were cardiac related. There were 2 reoperation in homografts group and 10 in stentless group. The mean transvalvular gradient significantly decreased after valve replacement. The last follow up showed that the %83,6 of all patients had a normal left ventricular function.

**CONCLUSIONS:** Cryopreserved homograft and stentless xenografts are safe alternatives to mechanical valves that can be used in adequate indications. They can be implanted safely with good midterm clinical results. They improve hemodynamic parameters in terms of residual transvalvular gradient and regression of left ventricular hypertrophy. REF72

**D71-CHYLOTHORAX AFTER REOPERATION FOR MITRAL VALVE DISEASE**

Cagli K., Ulas M.M., Mavioglu L., Temurturkan M., Bardakci H., Birincioglu C.L., Pac M.

Department of Cardiovascular Surgery, Turkiye Yuksek Ihtisas Hospital, Ankara, Turkey

**OBJECTIVES:** Chylothorax following cardiovascular surgery is a rare but severe complication. In this report we describe a case of a patient with history of previous closed mitral valvotomy in whom chylothorax has developed after mitral valve replacement (MVR).

**CASE PRESENTATION:** A 41-year-old female patient with history of closed mitral valvotomy underwent elective MVR surgery at our institution. An ATS valve was inserted with standard technique. On the 3rd postoperative day (POD) when oral food intake has been initiated, the mediastinal drainage fluid turned milky. The diagnosis of chylothorax was suspected and confirmed with biochemical analysis. On the 4th POD total parenteral nutrition was begun. Oral intake was tried twice, however, as chylous drainage increased, surgical exploration of the mediastinum was decided. Before exploration olive oil was given through a nasogastric tube to make the damaged area of the duct more visible. Exploration of the left posteriosuperior mediastinum through a midline sternotomy revealed 3 different lymphatic channels that drain lymph continuously. All channels were ligated with nonabsorbable suture, and after coverage of surgical area by an absorbable haemostat, the sternum was closed primarily. The patient was discharged from hospital without any problem.

**CONCLUSIONS:** Chylothorax should be kept in mind as a complication of open heart surgery especially in patients undergoing reoperation. Although video assisted thoracic surgery (VATS) can be used for treatment of selected cases, surgical ligation with or without an absorbable haemostat application can be performed successfully as a first-line treatment or in patients in whom VATS has been failed. REF146

#### D72-THE EFFECT OF PENTOXIFYLLINE ON HEMOLYSIS AFTER AORTIC VALVE REPLACEMENT SURGERY

Çagli K.<sup>1</sup>, Çagli K.E.<sup>2</sup>, Ulas M.M.<sup>1</sup>, Gürkahraman S.<sup>3</sup>, Yılmaz S.<sup>4</sup>, Korkmaz K.<sup>1</sup>, Gedik S.<sup>1</sup>, Lafci G.<sup>1</sup>, Sener E.<sup>5</sup>, Pac M.<sup>1</sup>, Birincioglu L.B.<sup>1</sup>, Cobanoglu A.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey

<sup>2</sup>Department of Cardiology, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey

<sup>3</sup>Department of Cardiovascular Surgery, Akay Hospital, Ankara, Turkey

<sup>4</sup>Department of Hematology, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey

<sup>5</sup>Department of Cardiovascular Surgery, Atatürk Education and Research Hospital, Ankara, Turkey

**OBJECTIVES:** To evaluate whether postoperative use of pentoxifylline (PTX) can reduce the incidence of hemolysis in patients with uncomplicated aortic valve replacement (AVR).

**METHODS:** Fifty-two patients undergoing elective AVR were prospectively randomized into 2 groups. In PTX group (n=26), 400 mg of PTX was infused initially and was planned to be used orally for two months in a dosage of 3x400mg daily. In control group (n=26), placebo was used. In each patient, hemoglobin (Hb), free Hb, hematocrit, haptoglobin, lactate dehydrogenase (LDH), indirect bilirubin, reticulocyte percentage, and schistocytes were analyzed preoperatively, at postoperative 48 hours, 1st week, and 2nd month. An echocardiography was performed between 5th -7th postoperative days. Incidence of hemolysis defined by Skoularigis' criteria was compared between groups.

**RESULTS:** Because 1 patient in PTX group experienced mechanical valve (MV) dysfunction, 51 patients (25 in PTX and 26 in control group) were included in analysis. Bileaflet St. Jude Mechanical MV was only used. Gradients of the MV were similar between groups. Although all parameters were comparable between groups preoperatively and at postoperative 48 hours, level of LDH at the postoperative 1st week was significantly lower in PTX group. At the postoperative 2nd month, lower level of LDH persisted in PTX group along with significantly lower level of freeHb and hemolysis incidence (32% vs 53.8%, p<0.001). No severe side effect was observed.

**CONCLUSIONS:** After uncomplicated AVR with bileaflet mechanical valve, oral use of PTX effectively reduces the incidence of hemolysis without significant side effect. **REF144**

#### D73-VALVE-SPARING AORTIC ROOT RECONSTRUCTION OR PROSTHETIC VALVED CONDUIT REPLACEMENT FOR TYPE A AORTIC DISSECTION

Muller D., Aybek T., Dogan S., Detho F., Risteski P., Moritz A.

Department of Thoracic and Cardiovascular Surgery, Johann Wolfgang Goethe University, Frankfurt/M, Germany

**OBJECTIVES:** Acute dissection of the ascending aorta requires immediate surgical treatment. In this study, we compared the results of two operative treatments, valve-sparing aortic root reconstruction and prosthetic valved conduit replacement, with regards to the perioperative course and early complications.

**METHODS:** From August 1999 to March 2005, 19 patients with acute aortic dissection of the ascending aorta (Stanford type A) underwent valve sparing aortic root reconstruction (group A), while 28 patients underwent replacement by a valved conduit (group B). The preoperative grade of aortic valve insufficiency was 2.8±0.7 for group A and 2.2±1.1 for group B. Course and length of hospitalization, echocardiographic follow-up, complications, and mortality were compared at 3-year follow-up.

**RESULTS:** There were four operative deaths in group B (15%). During follow-up, no patient died postoperatively in group A vs. two patients (7.7%) in group B. Bypass-time (211±36 vs. 168±48 min, p<0.001) and cross-clamp-time (147±23 vs. 101±22 min, P<0.001) were significantly shorter in group B. Stay in ICU (119±102 for group A vs. 114±87 hours for group B) and post-op hospitalization (13.1±9 vs. 12.4±11 days) were comparable. Two patients in group A had to be reoperated during follow-up for residual valve insufficiency. Valve related complications during the follow up were observed in 6 patients (23%) in group B, zero in group A (P<0.05).

**CONCLUSIONS:** Valve sparing aortic root reconstruction for type A aortic dissection is feasible with low perioperative morbidity and mortality and good early results. Major advantages of this technique are significant reduction of valve related events as opposed to longer cross-clamp and bypass times. Further follow-up is needed to confirm our data in a long-term perspective. **REF137**

#### D74-EFFECT OF GENETIC POLYMORPHISMS ON THE MECHANICAL HEART VALVE DYSFUNCTION

Parlar A.I.<sup>1</sup>, Tutun U.<sup>1</sup>, Aksoyok A.<sup>1</sup>, Misirlioglu M.<sup>2</sup>, Babaroglu S.<sup>1</sup>, Ozen A.<sup>1</sup>, Seren M.<sup>1</sup>, Budak A.B.<sup>1</sup>, Tosya A.<sup>1</sup>, Akgul A.<sup>1</sup>, Ulus A.T.<sup>1</sup>, Katircioglu S.F.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Türkiye Yüksek İhtisas Research and Training Hospital, Ankara, Turkey,

<sup>2</sup>Metis Biotechnology Ltd., Ankara, Turkey

**OBJECTIVES:** Mechanical Heart Valve Dysfunction (MHVD) is a rare but life-threatening complication with an incidence of 0.03-4.3% per year after valve replacement. It is known that there were inherited risk factors that may lead to increase thrombotic events or chorionic inflammatory process.

We searched if there was a genetic polymorphism related with MHVD. **METHODS:** We had studied 83 patients; 18 patients were reoperated for MHVD (group 1); 15 patients had low INR level with functional mechanical heart valve (group 2), and 50 healthy individuals (group 3). Factor V Leiden-G1691A, prothrombin-G20210A, interleukin-6 G-174C, and TNF-alpha G-308A polymorphisms were searched to investigate possible relationships between these factors and MHVD.

**RESULTS:** On the basis of factor V Leiden G1691A, prothrombin-G20210A, and TNF alpha G-308A polymorphisms there were no statistically significant differences in between the groups. However, interleukin-6 G-174C polymorphism results showed differences between the groups but it was not reached statistical significance. When the group 1 and group 3 were compared, interleukin-6 G-174C polymorphism differed significantly between these groups (p=0.035). The group 1 had 11.1% CC homozygote frequency, 38.9% GC heterozygote frequency and 50% GG homozygote frequency, but the group 3 had no CC homozygote frequency, 30% GC heterozygote frequency and 70% GG homozygote frequency (p=0.035).

**CONCLUSIONS:** Our results provide that there are not any significant differences of Factor V Leiden G1691A, prothrombin G20210A and TNF alpha G-308A genotype polymorphisms. The interleukin-6 G-174C polymorphism is found significantly related with MHVD. By the way of ongoing chorionic inflammatory process, this key inflammatory response cytokine, interleukin-6, may play a role in MHVD. **REF98**

#### D75-FREESTYLE STENTLESS AORTIC ROOT BIOPROSTHESIS IMPLANTATION FOR THE ACTIVE INFECTIVE ENDOCARDITIS WITH ABCESS FORMATION ON AORTIC ROOT

Ucak A.<sup>1</sup>, Guler A.<sup>1</sup>, Ulusoy R.E.<sup>2</sup>, Ugur M.<sup>1</sup>, Us M.H.<sup>1</sup>, Yilmaz A.T.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, GATA Haydarpaşa Training Hospital, Istanbul, Turkey,

<sup>2</sup>Department of Cardiology, GATA Haydarpaşa Training Hospital, Istanbul, Turkey

**OBJECTIVES:** Infective endocarditis and periannular abscess formation are serious problems for cardiac valve surgery, and require extensive surgical debridement and reconstruction of the aortic annulus. We aimed to report two cases which were successfully treated with bioprosthetic valve implantation for infective endocarditis.

**METHODS:** Transesophageal echocardiography were utilized for the diagnosis of one prosthetic and one native destructive aortic valve endocarditis in association with congestive heart failure (NYHA class III) and abscess formation. Freestyle stentless aortic root bioprosthesis were implanted after surgical radical aortic root debridement into the left ventricular outflow tract for the two patients and followed with medical treatment, which was extended to six weeks.

**RESULTS:** No early and late mortality was detected. One patient required long time intubation (two days) and permanent DDD-R pacing. During follow up period (12 months) echocardiography showed no signs of valve dysfunction or recurrent endocarditis for both patients.

**CONCLUSIONS:** Freestyle stentless aortic root bioprosthesis which can be used as homograft is a good alternative for the surgical treatment of endocarditis. **REF92**

**D76-THE RELIABILITY OF ECHOCARDIOGRAPHY FOR VALVE AREA ON MITRAL STENOSIS**

Kut M.S.<sup>1</sup>, Ergun B.<sup>2</sup>, Sokullu O.<sup>1</sup>, Ozay B.<sup>1</sup>, Sanioglu S.<sup>1</sup>, Hastaoglu O.<sup>1</sup>, Demirtas M.M.<sup>1</sup>, Bilgen F.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Dr.Siyami Ersek Thoracic&Cardiovascular Surgery Training and Research Hospital, Istanbul, Turkey,

<sup>2</sup>Department of Geodesy&Photogrammetry, Gebze Institute of Technology, Kocaeli, Turkey

**OBJECTIVES:** The aim of this study is to test the correlation between the echocardiographic two dimensional planimetric measurement of mitral valve primary orifice area and the results calculated with two-dimensional planimetric method, and to search the correlation of the results obtained with clinical functional capacity and echocardiographic transvalvular mean gradient.

**METHODS:** This search was performed with 20 suitable patients who underwent mitral valve replacement with rheumatic mitral valve stenosis. The echocardiographic examination of the patients was performed 1 week before the operation. Mitral valve primary orifice areas were measured with two-dimensional planimetric method. During valve area measurement of 16 patients with atrial fibrillation, the mean of 5 consecutive measurements were taken. The alternative direct morphoplanimetric measurement method used to calculate the mitral valve area was brought to life with the help of a special "expert system" visualization device improvised by Istanbul Technical University Geodesia and Photogrammetry Engineering.

**RESULTS:** Although valuable positive correlation was detected between morphometric and echocardiographic mitral valve area measurements ( $r = 0.74$ ,  $p < 0.001$ ), mitral valve areas calculated with echocardiography were found statistically significantly lower than the morphometric measurement ( $z = -3.075$ ,  $p = 0.02$ ).

**CONCLUSIONS:** For the cases that are planned to go under surgery, it is concluded that echocardiographic mitral valve area calculations could be misleading and operation decision, functional capacity and the other cardiac and clinical parameters should also be considered for the decision of surgery. **REF81**

**D77-OUR CLINICAL EXPERIENCE WITH PARAVALVULAR LEAK AND EMBOLIC RISKS IN SILZONE COATED MECHANICAL HEART VALVES**

Sasmazel A.<sup>1</sup>, Paker T.<sup>2</sup>, Ersoy C.<sup>2</sup>, Akcevin A.<sup>2</sup>, Alkan T.<sup>2</sup>, Bayer V.<sup>2</sup>, Turkoglu H.<sup>2</sup>, Aytac A.<sup>2</sup>

<sup>1</sup>Cardiovascular Surgery Department Anadolu Foundation Health Care System, Izmit, Turkey

<sup>2</sup>Cardiovascular Surgery Department VKV. American Hospital, Istanbul, Turkey

**OBJECTIVES:** We try to evaluate retrospectively the paravalvular leakage and embolic evidences in 28 patients which was operated in our clinic with Silzone-coated mechanical heart valves.

**METHODS:** From February 1998 to March 2000, consecutive 28 patients with an implanted silzone-coated heart valves were retrospectively investigated with transthoracic echocardiography for paravalvular leak and clinically examed for a major embolic events. Mean age was  $47 \pm 17$  years, 11 (39%) was woman. 14% mitral, 14% aortic, 72% double (mitral-aortic) replacement were performed. One with aortic valve replacement had a supracoroner graft implantation, second one with CABG(LIMA-LAD) and the third one with an Tetralogy of Fallot which was operated with Waterson shunt before. 4 of the double valve replaced patients had an active endocarditis.

**RESULTS:** No mortality and morbidity was seen at the early postoperative period. No patient required reoperation due to paravalvular leak. Postoperative major embolism were not seen in any of our patients. Only in one(3.3) patients transient neurologic deficits was seen and completely recovered thereafter.

**CONCLUSIONS:** Although our data do not suggest that risk of thromboembolism and paravalvular leakage in patients with Silzone prostheses is significantly greater than for those with standard sewing rings. Our follow-up policy for this patients is to maintain the anticoagulation at the higher end of the therapeutic range and to perform the serial doppler echocardiograms. Results of continued AVERT trial will be critically important in guiding management of this patients with Silzone prostheses. **REF62**

**D78-MITIGATION OF CALCIFICATION WITH CITRIC ACID IN PERICARDIAL BIOPROSTHETIC HEART VALVE MATERIAL**

Aytacoglu B.N.<sup>1</sup>, Sucu N.<sup>1</sup>, Comelekoglu U.<sup>2</sup>, Tamer L.<sup>3</sup>, Polat A.<sup>4</sup>, Dondas A.<sup>5</sup>, Camdeviren H.<sup>6</sup>, Gul A.<sup>1</sup>, Ozeren M.<sup>1</sup>, Dikmengil M.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Mersin University, School of Medicine, Mersin, Turkey

<sup>2</sup>Department of Biophysics, Mersin University, Mersin, Turkey

<sup>3</sup>Department of Biochemistry, Mersin University, School of Medicine, Mersin, Turkey

<sup>4</sup>Department of Pathology, Mersin University, School of Medicine, Mersin, Turkey

<sup>5</sup>Faculty of Pharmacy, Mersin University, Mersin, Turkey

<sup>6</sup>Department of Biostatistics, Mersin University, Mersin, Turkey

**OBJECTIVES:** The aim of this study was to evaluate the effect of citric acid on the attenuation of calcification in time together with its effect on durability for bovine pericardial heart valve material.

**METHODS:** Bovine pericardium cut into 1-cm<sup>2</sup> pieces, rinsed in phosphate-buffered saline solution, transferred into +4°C phosphate-buffered saline containing 0.625% glutaraldehyde for initial fixation, and allocated into two groups. Control samples were treated in an identical fresh solution for 5 more days. Others underwent additional fixation in phosphate-buffered saline + 3.8% citric acid for 48 h. They were then transferred into phosphate-buffered saline + 0.625% glutaraldehyde solution at 37°C (pH 7.4) for 3 more days. Pericardial patches were inserted into the dorsal pouches of 20 juvenile male Wistar rats. Rats were divided into two groups and sacrificed consecutively by the end of 6th and 12th weeks. The biomechanical properties and calcium contents of explanted tissues were tested and also assessed histopathologically.

**RESULTS:** The difference in the calcium contents of the control and study groups' pericardial tissues at the 6th and 12th weeks were statistically significant ( $p=0.0001$  and  $p=0.0001$ ). The comparison of calcium contents between controls of 6th and 12th weeks and study groups' of the 6th and 12th weeks pericardial tissues were also significant ( $p=0.0001$  and  $p=0.0001$ ). Histopathologic and biomechanical assessment also supported these findings.

**CONCLUSIONS:** Citric acid, a physiologic acid and a good chelating agent, can be very useful in the attenuation of calcification in bioprosthetic heart valve materials with no compromise to durability. **REF47**

**D79-MANAGEMENT OF PROSTHETIC MITRAL VALVE THROMBOSIS**

Ekim H.<sup>1</sup>, Akbayrak H.<sup>2</sup>, Kutay V.<sup>1</sup>, Hazar A.<sup>2</sup>, Tuncer M.<sup>3</sup>, Basel H.<sup>2</sup>, Karadag M.<sup>2</sup>, Demir I.<sup>2</sup>, Yakut C.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Yuzuncu Yil University, Van, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Van Yuksek Ihtisas Hospital, Van, Turkey

<sup>3</sup>Department of Cardiology, Yuzuncu Yil University, Van, Turkey

**OBJECTIVES:** Prosthetic mitral valve thrombosis is a life-threatening complication. Data on complications and outcome are limited. The purpose of this study was to review the clinical experience with the thrombolytic therapy and surgical management of prosthetic mitral valve obstruction in our hospital.

**METHODS:** Between January 2001 and April 2005, twelve patients with obstructed prosthetic mitral valve were admitted to our hospital. There were 8 female and 4 male patients aging between 14-60 years, with a mean age of  $38.9 \pm 14.1$  years. In all patients, the diagnosis of prosthetic valve thrombosis was confirmed by echocardiography including transesophageal echocardiography.

**RESULTS:** All patients showed absence or muffering of prosthetic valve sounds. Two of twelve patients received thrombolytic therapy by using streptokinase. In the remaining ten patients, operations were performed on an emergency basis. Operations were performed with median sternotomy and cardiopulmonary bypass techniques using antegrade-retrograde combined isothermic blood cardioplegia and moderate hypothermia.

**CONCLUSIONS:** The principal risk factors of prosthetic valve thrombosis are inadequate anticoagulation or fluctuation in anticoagulation levels. Its treatment is either surgical or using thrombolytics. However surgery is often required due to large thrombi and/or the presence of pannus overgrowth. **REF41**

## EXPERIMENTAL STUDIES

### D80-COMPARISON OF HEMODYNAMIC RESPONSES AND MEASUREMENTS OF NITRIC OXIDE PLASMA LEVELS DURING INTRAOPERATIVE USE OF INTRAVENOUS ILOPROST AND NITROGLYCERIN FOR VALVULAR HEART SURGERY

Baysal A.<sup>1</sup>, Bilsel S.<sup>2</sup>, Gumustekin Bulbul O.<sup>2</sup>, Kalaycioglu I.<sup>3</sup>, Idiz M.<sup>3</sup>, Yekeler I.<sup>3</sup>

<sup>1</sup>Department of Anesthesiology, Dr. Siyami Ersek Hospital, Istanbul, Turkey

<sup>2</sup>Department of Biochemistry, Marmara University, Istanbul, Turkey

<sup>3</sup>Department of Cardiovascular Surgery, Dr. Siyami Ersek Hospital, Istanbul, Turkey

**OBJECTIVES:** This study evaluates the hemodynamic response to the use of intravenous (IV) iloprost and nitroglycerin during valvular surgery and investigates the plasma nitric oxide levels to demonstrate the difference in mechanism of action of these drugs.

**METHODS:** Eighteen patients undergoing only mitral or aortic and mitral valvular repair with pulmonary hypertension (mean pulmonary artery pressures > 25 mmHg) were included in the study. In both groups, intravenous drug administration was started after chest opening and also after CPB (cardiopulmonary bypass) via pulmonary catheter. The hemodynamic parameters have been evaluated before incision (T1), 10 minutes after chest opening (T2), and 5 and 15 minutes after CPB (T3 and T4). The plasma nitric oxide levels were obtained from the pulmonary artery catheter at the T1 and T3 timings.

**RESULTS:** Intravenous iloprost administered at the dose of 1.25 to 2.5 ng/kg/dak reduced mean pulmonary artery pressure and pulmonary vascular resistance more than the intravenous nitroglycerin group that was at the dose of 0.25 to 1 ug/kg/dak. Intravenous iloprost causes significant increase in cardiac output (CO) compared to the other group (Table 1). Intravenous iloprost significantly improved the oxygenation by a rise in mixed venous oxygen saturation compared to the other group (p< 0.05).

**CONCLUSIONS:** Intravenous iloprost effectively reduces MPAP and is accompanied by an increase in CO. During operation systemic iloprost is well tolerated without any significant adverse effects. The plasma nitric oxide levels from the pulmonary mixed venous blood does not show a rise in plasma nitric oxide levels compared to intravenous nitroglycerin

REF174

### D81-THE IN VIVO EFFECTS OF CAFFEIC ACID PHENETHYL ESTER ON MYOCARDIAL ISCHEMIA-REPERFUSION INJURY AND APOPTOTIC CHANGES IN RATS

Çagli K.<sup>1</sup>, Bağcı C.<sup>2</sup>, Gülec M.<sup>3</sup>, Cengiz B.<sup>2</sup>, Akyol O.<sup>4</sup>, Sari I.<sup>5</sup>, Cavdar S.<sup>2</sup>, Pence S.<sup>2</sup>, Dinçkan H.<sup>6</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey

<sup>2</sup>Department of Physiology, Gaziantep University, Medical Faculty, Gaziantep, Turkey

<sup>3</sup>Department of Biochemistry, Akyurt State Hospital, Ankara, Turkey

<sup>4</sup>Department of Biochemistry, Hacettepe University, Medical Faculty, Ankara, Turkey

<sup>5</sup>Department of Pathology, Gaziantep University, Medical Faculty, Gaziantep, Turkey

<sup>6</sup>Department of Cardiology, Gaziantep University, Medical Faculty, Gaziantep, Turkey

**OBJECTIVES:** Ischemia/reperfusion (I/R) has been reported to induce apoptotic cellular death in myocardium. Therefore, it is hypothesized that caffeic acid phenethyl ester (CAPE), one of the active components of propolis, may play a role in the attenuation of myocardial apoptosis and oxidative myocardial injury.

**METHODS:** Wistar rats were divided into four groups as sham, I/R, I/R plus CAPE, and I/R plus glutathione (GSH) groups. Intravenous injection of CAPE (10µmol/kg) and GSH (5mg/kg) was performed 10 minutes before occlusion as well as before reperfusion by infusion. The TdT mediated in situ nick end labeling (TUNEL) method was used to evaluate apoptotic activity. Biochemical parameters were studied using manual spectrophotometric methods. CK and AST analyses were made by an autoanalyzer using commercial kits.

**RESULTS:** Myocardial I/R resulted in myocardial apoptosis, alteration in antioxidant status, elevation in CK and AST activities as well as lipid peroxidation and nitric oxide levels compared to sham operation group. No apoptotic cells were found in the myocardial tissue of sham operated rats. The ratios of TUNEL positive cells were 60%, 30%, and 40% in the I/R, I/R+CAPE, and I/R+GSH groups, respectively.

**CONCLUSIONS:** The present study proved our hypothesis that administration of CAPE has a definite role in cardio-protection from I/R injury. Evidences for this proposal are obvious, and there is less degree of apoptosis, attenuation of NO production and unremarkable inhibition of lipid peroxidation in CAPE treated rats.

REF145

### D82-ILOPROST AS A STORAGE SOLUTION AND SYSTEMIC VASODILATOR IN ARTERIAL BYPASSES: EFFECTS ON IN VITRO VASOREACTIVITY OF HUMAN ISOLATED INTERNAL THORACIC ARTERY

Canturk E.<sup>1</sup>, Altinok A.<sup>2</sup>, Arslan C.<sup>1</sup>, Ozyazgan S.<sup>2</sup>, Kayhan B.<sup>1</sup>, Besirli K.<sup>3</sup>, Bozkurt A.K.<sup>3</sup>, Koksall C.<sup>4</sup>, Akkan A.G.<sup>2</sup>

<sup>1</sup>Department of Cardiovascular Surgery, 29 Mayıs Hospital, Istanbul, Turkey

<sup>2</sup>Department of Pharmacology and Clinical Pharmacology, Cerrahpasa Medical Faculty, Istanbul, Turkey

<sup>3</sup>Department of Cardiovascular Surgery, Cerrahpasa Medical Faculty, Istanbul, Turkey

<sup>4</sup>Department of Cardiovascular Surgery, SB. Sureyyapasa Hospital, Istanbul, Turkey

**OBJECTIVES:** (a) analyze the effects of iloprost as a systemic vasodilator and storage solution on the human IMA during cardiac bypass surgery; (b) compare these effects with other systemic vasodilators (diltiazem, glyceryl trinitrate-GTN-) and storage solutions (papaverine, verapamil).

**METHODS:** IMA-strips were contracted with NA (10-9 – 10-3 M) and KCl (20- 80 mM). Cumulative concentration- contraction curves for NA and KCl were then established in these strips and compared with the contraction in control (Krebs) IMA strips and with each others. Student-t test and one-way ANOVA followed Bonferroni test were used. P< 0.05 is significant.

**RESULTS:** There were no significant differences in the maximal contraction force to both NA and KCl and in sensitivity to KCl between strips stored in krebs, iloprost, papaverine and verapamil solutions. Among the storage solutions used in the present study, papaverine (6.50 ± 0.20) and iloprost (7.33 ± 0.13) are significantly potent than KH (8.46 ± 0.75, p< 0.001 and p<0.05 respectively) and verapamil (8.74 ± 0.16, p< 0.001 and p<0.01 respectively) with regard to preventive effect in precontracted- IMA with noradrenaline. Iloprost as a systemic vasodilator might significantly relax the precontracted-IMA with NA in the KH, papaverine and iloprost- storage groups. Diltiazem as a systemic vasodilator has significantly relaxed the precontracted- IMA with KCl in all storage- groups. GTN reduced the maximal contraction to KCl of IMA in the verapamil-storage group.

**CONCLUSIONS:** perioperative IMA spasm could be treated with diltiazem and iloprost, for prophylaxis of IMA spasm, papaverine or iloprost should be tested.

REF142

**D83-THE EFFECT OF MIXED VASODILATOR AGENT IN THE RADIAL AND THE INTERNAL THORACIC ARTERY USING THREE-DIMENSIONAL ANAGLYPH ELECTRON MICROSCOPIC TECHNIQUE**

Dogan O.F.<sup>1</sup>, Tatar I.<sup>2</sup>, Duman U.<sup>1</sup>, Aldur M.<sup>2</sup>, Demircin M.<sup>1</sup>, Yorgancioglu C.<sup>1</sup>, Boke E.<sup>1</sup>, Celik H.H.<sup>2</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Hacettepe University Medical School, Ankara, Turkey

<sup>2</sup>Department of Anatomy, Hacettepe University Medical School, Ankara, Turkey

**OBJECTIVES:** The radial and the internal thoracic artery has a potential for spasm which may increase perioperative risk after coronary artery bypass grafting. Increased alpha-adrenoceptor activation plays an important role for this conduit spasm. We studied the quantitative effects of mixed vasodilator agents in the RA and the ITA diameter using 3-D anaglyph technique in coronary artery disease patients.

**METHODS:** Ring segments of the arteries taken from 50 cases undergoing coronary artery bypass grafting were studied. A total of 200 vessel segments, which were cut into 5mm long rings, were tested. The harvested 100 vessel rings, 50 RA and 50 ITA, were not placed in the vasodilator solutions, and we studied them as control groups. The remaining 100 arterial segments, 50 RA and 50 ITA, were placed in a mixed solution included nitroglycerin, Verapamil, Papaverine, and 30 mL heparinized blood. They were incubated during 20 minutes.

**RESULTS:** The diameter of the pretreatment RA and the ITA were measured between 2.0 mm or 3.5 mm; and 1.5 mm or 2.3 mm, respectively. However, diameter of the arterial segments, which were incubated in the mixed solution, were measured between 3.5 mm and 5.8 mm for the radial artery, and were measured between 3 mm and 4mm for the ITA. This findings were statistically significant in both arteries.

**CONCLUSIONS:** We propose that mixed vasodilator solution may be used as a pre-treatment agent in CABG procedure. The study findings showed that the nature of the more vasodilator characteristic of the RA and the ITA support the necessity of a more active synergist pharmacologic intervention to relieve spasm after the CABG operation. **REF117**

**D84- EFFECT OF ISCHEMIA/REPERFUSION INJURY TO THE LUNGS CAUSED BY CROSS CLAMPING OF THE ABDOMINAL AORTA**

Ekim H.<sup>1</sup>, Erdogan H.B.<sup>2</sup>, Kytay V.<sup>1</sup>, Başel H.<sup>3</sup>, Ozen S.<sup>4</sup>, Hazar A.<sup>3</sup>, Akbayrak H.<sup>3</sup>, Komuroglu U.<sup>5</sup>, Tuncer M.<sup>6</sup>, Yakut C.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Yuzuncu Yil University, Van, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Kosuyolu Heart and Research Hospital, Istanbul, Turkey

<sup>3</sup>Department of Cardiovascular Surgery, Van Yuksek Ihtisas Hospital, Van, Turkey

<sup>4</sup>Department of Pathology, Yuzuncu Yil University, Van, Turkey

<sup>5</sup>Department of Biochemistry, Yuzuncu Yil University, Van, Turkey

<sup>6</sup>Department of Cardiology, Yuzuncu Yil University, Van, Turkey

**OBJECTIVES:** Lung injury may occur after the surgery involving the temporary aortic cross clamping with subsequent ischemia/reperfusion of the lower extremities. Activation of the neutrophils is known to play an important role in the ischemia/reperfusion injury. The aim of this study was to determine whether ischemia/reperfusion could have an important role on lung injury in the rat model of aortic cross clamping on abdominal aorta.

**METHODS:** Thirty Sprague-Dawley type rats were randomized into three groups. Rats in the group A (n:10) were undertaken laparotomy and closed after dissection of the abdominal aorta without cross clamping. Rats in the group B (n:10) were also undertaken laparotomy and abdominal aorta was dissected, and clamped for 3 hours, then removed for reperfusion and abdomen was closed. In the group C rats (n:10), low molecular weight heparin (LMWH) was injected subcutaneously one hour before operation and subjected to the same surgical procedures as for group B rats. All rats were sacrificed and their lungs were removed for malonaldehyde (MDA) analysis and histological examination.

**RESULTS:** In the group B rats, there were significantly higher neutrophil infiltration and MDA level in the lungs. In the group C rats, neutrophil sequestration was reduced caused by ischemia/reperfusion.

**CONCLUSIONS:** It is concluded that cross clamping of the abdominal aorta increases the neutrophil sequestration and augments the lung injury process. LMWH reduces the neutrophil sequestration. **REF 42**

**D85-EVALUATION OF THE INTRACARDIAC MASSES: HACETTEPE UNIVERSITY HOSPITAL EXPERIENCES**

Onuk B.E., Ucar H.I., Ozkan M., Oc M., Gurbuz A., Guvener M., Yilmaz M., Dogan R., Demircin M., Pasaoglu I., Ersoy U., Boke E.

Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey

**OBJECTIVES:** Heart tumors are uncommon. Myxoid tumors in the heart are generally primary myxomas which is the most common cardiac tumor and comprises 50% of all cardiac tumors. Myxomas are usually diagnosed between the ages of 50 and 70 where 90% are solitary and 75-90% are attached to the left atrial wall. In the heart, metastatic tumors are 20 to 40 times more common than primary tumors. Lung and breast carcinomas are the most common metastatic neoplasms to the heart. Early differentiation is important for further diagnosis, treatment and prognosis.

**METHODS:** Distinction between atrial myxoma, the most common primary cardiac tumor, and metastatic intracardiac malignancy may be difficult. Left sided atrial myxomas are typically benign malignancies of the endocardium which may present with similar symptoms and echocardiographic findings. From January 1990 to July 2004 45 patients admitted to the hospital for intracardiac mass. The cases were rhabdomyosarcoma, right atrial thrombus, right and left ventricular mass, metastatic cardiac tumour and myxoma. The patients were evaluated according to subsequent histopathologies, the site of the mass and demographic datas. Patients mean age was 36.3±23.4. The surgery to remove the mass was done under cardiopulmonary bypass.

**CONCLUSIONS:** Cardiac neoplasms are primarily cardiac myxomas. For early and appropriate treatment of a cardiac mass it is not only important to determine its localization and extension but also to differentiate between malignant and benign lesions. Surgery is the treatment of choice, and complete removal of the tumor is mandatory. Incomplete resection of the tumor may result in recurrences. **REF166**

**D86-EVALUATION OF VENTRICULAR FUNCTIONS RECEIVING ASPARTATE-GLUTAMATE ENRICHED TERMINAL WARM (35°C) BLOOD CARDIOPLEGIA BY HAEMODYNAMIC PARAMETERS AND CARDIAC ENZYME LEVELS**

Sahin H.S., Ucar H.I., Duman U., Boke E., Demircin M.

Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey

**OBJECTIVES:** In our study we aimed to research the effectiveness of combined methods in patients having preserved ventricular functions and are to receive an elective coronary artery bypass grafting (CABG) operation.

**METHODS:** Twenty patients having an elective CABG surgery are separated into 2 groups of 10 each ( Group 1 and Group 2). Cardiac arrest is achieved with cold blood cardioplegic solution in both groups. Group 2 received aspartate-glutamate enriched terminal warmed blood cardioplegia (TWBC) "hot shot" before aortic declamping. Terminal warm blood cardioplegia and aspartate-glutamate enriched blood cardioplegic solutions are well known methods to be effective in protecting energy depleted ischemic hearts from the reperfusion injury. Postoperatively, myocardial damage was assessed with CK-MB and Troponin T levels biochemically, and haemodynamically by CO, CI, SVI, SVR, PVR, LVSW, RVSW measurements and confronted between two groups.

**RESULTS:** Peak CK-MB and Troponin T levels were significantly elevated in Group 1 (CK-MB 55.4±12.3 and 37.9±13.7 ng/ml, TnT 0.81±0.12 and 0.56±0.34 ng/ml). CO ( 5.14 ± 0.1, 6.59 ± 1.0 l/min), CI (2.77±0.83 and 3.44±0.30 l/min/m<sup>2</sup>) and SVI (29.33±0.54 and 38.0±10.13 ml/beat/m<sup>2</sup>) were significantly high in the group receiving aspartate-glutamate enriched TWBC at 24. hour postoperatively (p<0.05). Mechanical ventilatory support (10.0±1.3 and 6.6±1.1 hours) and intensive care unit stay (48±6.5 and 41.9±3.9 hours) was significantly short in the group receiving aspartate-glutamate enriched TWBC. Also, spontaneous sinus rhythm conversion following aortic declamping was higher (% 40 and %90) in Group 2.

**CONCLUSIONS:** Aspartate-glutamate enriched TWBC is effective in protecting the myocardium from the deranging effects of reperfusion injury, and in shortening the early postoperative rehabilitation in patients having depleted myocardial energy reserves, marginally preserved and/or "hibernating" myocardial ventricular functions. **REF158**

#### D87-CARDIOPULMONARY BYPASS CIRCULATION DOES NOT HARM EAR FUNCTIONS: A STUDY OF OTOACOUSTIC EMISSION TESTING

Iriz E.<sup>1</sup>, Yilmaz M.<sup>2</sup>, Gunduz B.<sup>3</sup>, Iriz A.<sup>4</sup>, Eren E.<sup>1</sup>, Bayazit Y.<sup>2</sup>, Yener A.<sup>1</sup>

<sup>1</sup>Gazi University School of Medicine, Department of Cardiovascular Surgery, Ankara, Turkey

<sup>2</sup>Gazi University School of Medicine, Department of Otorhinolaryngology and Head Neck Surgery, Ankara, Turkey

<sup>3</sup>Gazi University, School of Medicine, Department of Audiology, Ankara, Turkey

<sup>4</sup>Ankara Numune Education and Research Hospital of the Ministry of Health, Department of Otolaryngology and Head-Neck Surgery, Ankara, Turkey

**OBJECTIVES:** This study was performed to address effects of coronary artery bypass grafting with cardiopulmonary bypass circulation on hearing and inner ear status.

**METHODS:** Pre and postoperative audiometric assessments were performed in 42 ears of 21 patients who underwent coronary artery bypass grafting. Pure tone audiometry results at the frequencies of 250, 500, 1000, 2000, 4000 and 6000 Hz and speech discrimination scores were obtained. Otoacoustic emissions testing (TEOAE and DPOAE) was performed.

**RESULTS:** There was also no correlation between the number of bypassed arteries and audiometric results of the patients ( $p>0.05$ ). Preoperative and postoperative pure tone results of the patients were not significantly different ( $p>0.05$ ). Pre and postoperative speech discrimination scores of the patients were  $88\pm 14\%$  and  $91\pm 1\%$ , respectively. None of the patients had hearing loss or sudden deafness after surgery. There was no significant difference between the pre and postoperative DPOAE results of the patients ( $p>0.05$ ).

**CONCLUSIONS:** Hearing loss, if any, occurring after coronary artery bypass grafting is probably due to affects of general anesthesia rather than extracorporeal circulation and coronary artery bypass grafting. That is, coronary artery bypass grafting with extracorporeal circulation does not create a risk for hearing loss as well as for the functions of outer hair cells in the inner ear. **REF150**

#### D88-EFFECT OF N-ACETYLCYSTEINE IN ISCHEMIA - REPERFUSION INJURY FOLLOWING EXPERIMENTAL AORTIC OCCLUSION

Altun G.<sup>1</sup>, Pulathan Z.<sup>1</sup>, Koramaz I.<sup>1</sup>, Kaklikkaya I.<sup>1</sup>, Haliloglu E.<sup>1</sup>, Yasar Guven K.<sup>1</sup>, Tekelioglu Y.<sup>2</sup>, Cobanoglu U.<sup>3</sup>, Ozcan F.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Karadeniz Technical University, School of Medicine, Trabzon, Turkey,

<sup>2</sup>Department of Histology, Karadeniz Technical University, School of Medicine, Trabzon, Turkey,

<sup>3</sup>Department of Pathology, Karadeniz Technical University, School of Medicine, Trabzon, Turkey

**OBJECTIVES:** Local and systemic tissue injury by ischemia/reperfusion (I/R) syndrome which is a major problem after the vascular surgery. A study was planned to assess the antioxidant properties of NAC on I/R in a rat model

**METHODS:** Thirty Wistar rats weighing 250-300g were divided into four groups and anesthetized with ketamine HCl. In all rats, except sham operated group, ischemia reperfusion injury was produced by clamping the abdominal aorta below renal arteries using an aneurysm clip with a closing force of 50 g/cm<sup>2</sup>, for 4 hours. Then, clamps were removed and reperfusion was allowed for one hour. In the sham-operated group (Group I), the peritoneum was opened but the abdominal aorta was not clamped. In the Group II, abdominal aorta was clamped but no treatment was given. The rats in Group III were treated with 2 cc intraperitoneal saline and the rats in Group IV were treated with 150 mg/kg NAC with the same amount of saline. Thereafter, animals in each group were sacrificed. The removed lungs were subjected to malondialdehyde (MDA) and myeloperoxidase (MPO) level measurements along with histopathologic and flow cytometric evaluations.

**RESULTS:** When MDA and MPO levels were considered, NAC group showed a smaller I/R injury. In addition, PMNL infiltration was milder in the lungs of NAC group as demonstrated by flow cytometry and histopathologically.

**CONCLUSIONS:** To conclude, NAC reduces ischemia and reperfusion injury in lungs in a rat model **REF66**

#### D89 - LIPID PEROXIDATION IN ASCENDING AORTA AND INTERNAL THORACIC ARTERY

Koksal C.<sup>1</sup>, Zengin M.<sup>2</sup>, Abbasoglu S.<sup>3</sup>, Bozkurt A.K.<sup>4</sup>, Demirbas Yilmaz M.<sup>4</sup>, Denli S.<sup>4</sup>

<sup>1</sup>Sureyyapasa, Thoracic and Cardiovascular Diseases Research Hospital, Cardiovascular Surgery Dept., Istanbul, Turkey

<sup>2</sup>Maltepe University Medical Faculty, Cardiovascular Surgery Dept., Istanbul, Turkey

<sup>3</sup>I.U. Istanbul Medical Faculty, Biochemistry Dept., Istanbul, Turkey

<sup>4</sup>I.U. Cerrahpasa Medical Faculty, Cardiovascular Surgery Dept., Istanbul, Turkey

**OBJECTIVES:** The internal thoracic artery (ITA) is highly resistant to atherosclerosis due to its cellular and molecular characteristics and is routinely used for coronary artery revascularization with high long-term patency rates. The aim of the current study was to compare tissue thiobarbituric acid-reactive substances (TBARS) as a marker of free radical-induced lipid peroxidation in human ascending aorta and ITA.

**METHODS:** Twenty patients who were undergoing coronary artery bypass grafting were included in the study with a mean age of  $63.75\pm 12.8$  years. None of the patients had been taking substances with a known antioxidant effect for at least 1 month. The extra length of ITA not used for coronary grafting and punch biopsies routinely taken while performing proximal anastomoses to the ascending aorta were used. Aortic tissue samples taken from heavily atherosclerotic areas were excluded from the study.

**RESULTS:** The mean ascending aortic TBARS levels ( $73.11\pm 52.70$ ) were found to be significantly higher than the mean ITA TBARS levels ( $48.68\pm 22.15$ ) ( $p<0.001$ ). Also the mean ascending aortic TBARS levels directly and significantly correlated with the age of the patients ( $p<0.001$ ,  $r=0.662$ ). Free radical-induced lipid peroxidation has been proposed as an etiologic factor in atherosclerosis.

**CONCLUSIONS:** Current study shows quantitative differences in the levels of TBARS between ITA and the ascending aorta, suggesting a difference in the ability of the two tissues to counteract oxidative stress. It is evident that the ascending aorta is more prone to atherosclerosis whereas the ITA is considered resistant to the disease. **REF52**

#### D90-THE EFFECT OF CALCIUM DOBESILATE ON MYOCARDIAL PROTECTION IN ISOLATED RAT HEARTS

Akgun O.<sup>1</sup>, Suzer O.<sup>2</sup>, Dedeoglu B.D.<sup>2</sup>, Koksal C.<sup>3</sup>, Bozkurt A.K.<sup>1</sup>, Denli S.<sup>1</sup>, Sayin A.G.<sup>1</sup>

<sup>1</sup>I.U. Cerrahpasa Medical Faculty, Cardiovascular Surgery Dept., Istanbul, Turkey

<sup>2</sup>I.U. Cerrahpasa Medical Faculty, Pharmacology Dept., Istanbul, Turkey

<sup>3</sup>Sureyyapasa, Thoracic and Cardiovascular Diseases Research Hospital, Cardiovascular Surgery Dept., Istanbul, Turkey

**OBJECTIVES:** Calcium dobesilate (DOBE) is an angioprotective agent and has antioxidant properties. A previous experiment by us did not demonstrate any superiority of DOBE when supplementing the cardioplegic or perfusion solutions. The aim of this study was to investigate the role of DOBE in myocardial I/R induced injury, after the drug has reached a certain tissue level before I/R by oral administration.

**METHODS:** Twelve rats were divided into two groups ( $n=6$ ). In DOBE group, the rats were subjected to oral DOBE (100 mg/kg/day) for fifteen days, while the control group was not treated with any drug. Using the Langendorff system isolated hearts were exposed to global ischemia and then reperfusion. Creatine kinase (CK), lactate dehydrogenase (LDH), troponin I and myoglobin levels were determined in coronary perfusate. Tissue samples were taken to analyze myocardial GSH and MDA levels. Contraction force according to time [(+) dp/dtmax] and relaxation force according to time [(-) dp/dtmax] were also calculated.

**RESULTS:** Tissue MDA and GSH levels; coronary perfusate CK, Troponin I and Myoglobin levels were lower in the DOBE group than controls although did not reach statistical significance. LDH levels were lower in DOBE ( $p<0.05$ ). (+) dp/dtmax and (-) dp/dtmax recordings were higher in DOBE group at 15th, 20th and 25th min. of reperfusion ( $p<0.05$ ,  $p<0.005$ ,  $p<0.005$ , respectively).

**CONCLUSIONS:** The results drawn from the current study lead us to believe that when DOBE reaches to a certain tissue level in myocardium via oral administration, it might be effective in decreasing myocardial I/R induced injury. **REF50**

**D91-ALCOHOL-INDUCED LUNG DAMAGE SEPERATE WITH INCREASED OXIDATIVE STRESS**

Aytacoglu B.N.<sup>1</sup>, Çalikoglu M.<sup>2</sup>, Tamer L.<sup>3</sup>, Çoskun B.<sup>4</sup>, Sucu N.<sup>1</sup>, Kose N.<sup>1</sup>, Aktas S.<sup>4</sup>, Ozeren M.<sup>1</sup>, Dikmengil M.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Mersin University, School of Medicine, Mersin, Turkey

<sup>2</sup>Department of Chest Disease, Mersin University, School of Medicine, Mersin, Turkey

<sup>3</sup>Department of Biochemistry, Mersin University, School of Medicine, Mersin, Turkey

<sup>4</sup>Department of Histology, Mersin University, School of Medicine, Mersin, Turkey

**OBJECTIVES:** Alcohol-induced lung damage may be associated with increased oxidative stress. Our aim was to investigate changes in the biochemistry and histopathology of lungs due to high dose of alcohol intake.

**METHODS:** Rats were divided into two groups, Controls and Ethanol. The Ethanol group received ethanol 2g/kg (total of 3 cc) intraperitoneally. The Controls group received same amount of saline via the same route. Three hours later the rats were sacrificed and blood and lung tissue samples were obtained. Oxidative stress was assessed by measuring the levels of erythrocyte reduced glutathione, tissue malondialdehyde, myeloperoxidase and Na<sup>+</sup>-K<sup>+</sup> ATPase. Histopathologic evaluation was also performed in lung tissues.

**RESULTS:** In the Ethanol rats, sera malondialdehyde levels, tissue malondialdehyde levels and myeloperoxidase activities increased (p=0.007, p=0.001, p=0.000), lung tissue Na<sup>+</sup>-K<sup>+</sup> ATPase activities and erythrocyte reduced glutathione levels decreased (p=0.001, p=0.000), compared to the Controls'. Histopathologic examination demonstrated that the lungs of the Ethanol rats had alveolo-capillar thickening, alveolar degeneration, leukocyte infiltration, and erythrocyte extravasation (p<0.05).

**CONCLUSIONS:** These results suggest that high dose acute alcohol administration aggravates systemic and local oxidative stress leading to acute lung injury. Pulmonary damage, from mild dysfunction to severe lung injury, might be encountered. Possibility of rapid onset of ARDS due to increased oxidative stress in the presence of high dose alcohol intake should be kept in mind especially when in conjunction with some ischemic conditions such as coronary heart disease, acute ischemia of the extremities and traumatic accidents, when precautions against ARDS may prevent morbidity and mortality.

REF48

**D92-CAFFEIC ACID PHENETHYL ESTER (CAPE), A NEW SCAVANGER, SUPPLEMENTED ST. THOMAS' HOSPITAL CARDIOPLEGIC SOLUTION IMPROVES THE ANTIOXIDANT DEFENSE SYSTEM OF RAT MYOCARDIUM DURING ISCHEMIA-REPERFUSION INJURY**

Ozeren M.<sup>1</sup>, Sucu N.<sup>1</sup>, Tamer L.<sup>2</sup>, Karabaçak T.<sup>3</sup>, Aytacoglu B.<sup>1</sup>, Bayrı O.<sup>1</sup>, Dondas A.<sup>4</sup>, Ayaz L.<sup>2</sup>, Dikmengil M.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Mersin University School of Medicine, Mersin, Turkey

<sup>2</sup>Department of Biochemistry, Mersin University School of Medicine, Mersin, Turkey

<sup>3</sup>Department of Pathology, Mersin University School of Medicine, Mersin, Turkey

<sup>4</sup>Faculty of Pharmacy, Mersin University, Mersin, Turkey

**OBJECTIVES:** CAPE prevents lipid peroxidation induced by ischemia-reperfusion injury and has a potent antioxidant property. We investigated the advantages of CAPE supplemented cardioplegic solution (St. Thomas' Hospital solution (StThs)) on the antioxidant defense system of myocardium against ischemia-reperfusion injury

**METHODS:** Isolated rat hearts were mounted on a noncirculating type of Langendorff. The hearts were arrested for 60 min with cardioplegic solution given at 20-min intervals and then reperused for 15 min. The hearts were divided into three groups. Cold saline in group 1, StThs. in group 2 and CAPE added StThs in group 3 were used as the cardioplegic solution. Krebs-Henseleit solution was used for reperfusion. Tissues were examined Biochemically and histologically.

**RESULTS:** Significant differences among the three groups existed in tissue myeloperoxidase (MPO), catalase (CAT), Na-K ATPase activity and in the concentrations of malonyaldehyde (MDA) and 3-nitrotyrosine (3-NT). Group 2 showed significant changes in MPO, Na-K ATPase enzyme activity and the levels of MDA and 3-NT in comparison with group 1. Group 3 efficiently reduced MDA levels and also led to significant decrease in levels of MPO, and Na-K ATPase activity and increase in the level of CAT in comparison with group 1. Significant changes were also found in the levels of MDA, MPO and CAT in comparison between group 2 and 3. Immunohistochemical staining of cardiomyocytes with the caspase 3 dye showed better results in group 3 (figure 1).

**CONCLUSIONS:** Administration of CAPE into cardioplegic solutions improves the antioxidant defense system of rat heart during the ischemia-reperfusion injury.

REF44

**D93- COMPARISON OF ERYTHROPOIETIN AND METHYLPREDNISOLONE EFFECT ON EXPRESSION OF ANTI-APOPTOTIC SURVIVIN AND AVEN GENES IN RAT HEART TISSUE AFTER TRAUMATIC BRAIN INJURY**

Ozisk K.<sup>1</sup>, Yildirim E.<sup>1</sup>, Ozisk P.<sup>2</sup>, Misirlioglu M.<sup>3</sup>, Tuncer S.<sup>3</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Ankara Numune Education and Research Hospital, Ankara, Turkey

<sup>2</sup>Institute of Neurological Sciences and Psychiatry, Hacettepe University, Ankara, Turkey

<sup>3</sup>Metis Biotechnology, LTD, Ankara, Turkey

**OBJECTIVES:** To determine the two antiapoptotic signals survivin and aven in rat heart tissue following traumatic brain injury (TBI) and compare the effect of erythropoietin (EPO) and methylprednisolone (MPSS).

**METHODS:** Thirty-six Wistar-Albino female rats weighing 190-230 g were randomly allocated into 6 groups. Group 1 received head trauma and no treatment. Group 2 and Group 3 received head trauma and intraperitoneally 1000 IU/kg EPO and MPSS (30-mg/kg), respectively. Group 4 (vehicle), received head trauma and intraperitoneally albumin (0,4 ml/rat). Group 5 and 6 were the control and sham operated groups, respectively. Three-hundred g-cm impact trauma was produced by the method of weight-drop. Real time quantitative polymerase chain reaction (PCR) was used for both survivin and aven gene expression at the total RNA level.

**RESULTS:** Both survivin and aven were higher in the treatment groups than in the trauma group (P=0.00612, 0.000138 and P=0.003777, 0.003335, respectively). When we compared survivin and aven between EPO and MPSS groups, there was no important association (P=0.302699, 0.217146, respectively).

**CONCLUSIONS:** These findings suggest that both EPO and MPSS may play an important role in the expression of survivin and aven in the heart tissue after TBI. This underscores the importance of EPO and MPSS administration in organ donors and furthers the need for early administration of EPO and MPSS studies in heart donors. Also, further studies are required to determine the likely therapeutic agents, their dosages and timing after more severe brain injury or death models inducing the expression of survivin and aven.

REF27

**D94-CARDIOPROTECTIVE EFFECT OF APROTININ ON MYOCARDIAL ISCHEMIA-REPERFUSION INJURY DURING CARDIOPULMONARY BYPASS**

Karaca P.<sup>1</sup>, Konuralp C.<sup>2</sup>, Enc Y.<sup>2</sup>, Suzer A.<sup>1</sup>, Sokullu O.<sup>2</sup>, Ayoglu U.<sup>2</sup>, Cicek S.<sup>2</sup>

<sup>1</sup>Department of Anesthesia and Reanimation, Siyami Ersek Thoracic and Cardiovascular Surgery Center, İstanbul, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Siyami Ersek Thoracic and Cardiovascular Surgery Center, İstanbul, Turkey

**OBJECTIVES:** Aprotinin is a serine protease inhibitor used extensively in cardiac operations to reduce postoperative bleeding. It has also been reported that aprotinin has cardioprotective effects in ischemia/reperfusion injury. In this study, we evaluated the effects of aprotinin on the release of cardiac markers in patients undergoing coronary artery bypass graft (CABG) procedure performed with cardiopulmonary bypass (CPB).

**METHODS:** Eighty male patients were randomized into aprotinin (Group-I; n=40) and control (Group-II; n=40) groups. Patients in the aprotinin group received the full dose of aprotinin (2X106 KIU pre-CPB, 2X106 KIU in pump prime, 500.000 KIU/h during CPB), while the patients in the control group received only saline solutions. Cardiac troponin-I (cTnI) levels were measured before surgery, immediately after surgery, and at postoperative 6th, 12th, 24th hours and 5th day. CPK-MB measurements were performed at the same time frames except postoperative 5th day.

**RESULTS:** Demographic variables, peri- and postoperative parameters and baseline CPK-MB, cTnI levels were similar in both groups. cTnI levels were significantly lower in aprotinin group at postoperative 6th (p<0.05), 12th (p<0.05) and 24th (p<0.05) hours. Similarly, CPK-MB levels measured immediately after weaning CPB (p<0.01) and at postoperative 6th hours (p<0.05) were lower in aprotinin group.

**CONCLUSIONS:** Our study showed that aprotinin causes less myocardial enzyme leakage after CABG surgery with CPB. These data suggest that aprotinin has some other effects to protect the myocardium beyond that achieved with blood cardioplegia and systemic hypothermia. In order to clarify the mechanism, we believe, more studies which investigates effects of aprotinin on different markers of ischemia/reperfusion injury should be performed.

REF10

## CONGENITAL HEART DISEASE

### D95 - LEFT ATRIAL DISSECTION FOLLOWING MASS REMOVAL FROM RIGHT VENTRICLE : A CASE REPORT WITH NON-SURGICAL THERAPY.

Tasoglu I., Imren Y., Tavil Y., Zor H.

Department of Cardiovascular Surgery , Gazi Universty, Ankara, Turkey

**INTRODUCTION:** Left atrial dissection is a severe but rare complication occurring in approximately 0.84 % of valve interventions particularly mitral valve. This is the first report describing left atrial dissection following an unidentified mass removal from right ventricle, which was identified by transesophageal echocardiography (TEE).  
**METHODS:** A 50-year-old woman with a right ventricular mass and moderate tricuspid insufficiency was scheduled for an operation under cardiopulmonary by-pass. TEE proved appropriate mass removal and valve repair. All post-operative follow-ups were uneventful. Routine transthoracic echocardiogram (TTE) revealed no abnormal findings. On the 7th post-operative day TEE, showed a mobile intimal flap originating from interatrial septum on left side without an atrial septal defect. The diagnosis was atrial dissection without shunting. TTE, which was run at the same time, failed to show this inter-atrial flap. Since the hemodynamics were not affected, conservative therapy with anticoagulation was initiated. TEE controls (approximately one week later) resulted with complete adherence of the flap to atrial septum. The patient was discharged from the hospital and she has been doing well for 6 months.

**CONCLUSIONS:** Our case showed, left atrial dissection could occur after not only valve surgery but also mass removal right ventricle, and it is a rare complication that can be treated when diagnosed in time. We treated the atrial septum dissection conservatively, and it was spontaneously cured. Intraoperative and postoperative transesophageal echocardiography is strongly recommended in all open-heart surgical procedures.

REF30

### D96 - HYDATIDOSIS WITH CARDIAC AND PULMONARY ARTERY INVOLVEMENT

Bozkurt A.K.<sup>1</sup>, Koksall C.<sup>2</sup>, Halezaroglu S.<sup>3</sup>, Aslan C.<sup>4</sup>, Canturk E.<sup>4</sup>, Ozdemir M.B.

<sup>1</sup>J.U. Cerrahpasa Medical Faculty, Cardiovascular Surgery Dept.  
<sup>2</sup>Sureyyapasa Thoracic and Cardiovascular Diseases Research Hospital, Cardiovascular Surgery Clinic,

<sup>3</sup>Sureyyapasa Thoracic and Cardiovascular Diseases Research Hospital, Thoracic Surgery Clinic  
<sup>4</sup>29 Mayıs Hospital, Cardiovascular Surgery Clinic

**OBJECTIVES:** Cardiac and pulmonary artery involvement of echinococcosis is uncommon. Herein we present three cases: two cardiac echinococcosis and the other one right main pulmonary artery involvement.

**METHODS:** Left ventricular hydatid cysts as well as pulmonary, hepatic and splenic involvement were observed in a 3-year-old girl. In the second case, a right ventricular cyst was detected in a 76-year-old male. In the third case involving a 24-year-old male, a hydatid cyst was found inside the right main pulmonary artery and multiple right lung involvement were evident.

**RESULTS:** The first patient, the youngest reported case of a cardiac hydatid cyst, underwent a cystectomy on a beating heart with an uneventful follow-up after 3 years. The second patient was operated under cardiopulmonary bypass (CPB) and the cyst was removed from the right ventricular cavity with a straightforward postoperative period. For the third case a two stage surgical approach was performed. Since the cyst was located in the right pulmonary artery and carried a high risk of migration or rupture during pneumonectomy, the hydatid cyst was removed from the pulmonary artery under CPB on a beating heart and then right pneumonectomy was performed because multiple cysts in the lung had destroyed the lung parenchyma. All three patients had postoperative albendazole therapy. No recurrence has been seen so far.

**CONCLUSIONS:** Cardiac echinococcosis can still be seen in our country and should be included in the differential diagnosis in cardiopulmonary mass lesions. The treatment of choice is surgery, which can sometimes be demanding and needs meticulous handling.

REF51

### D97 - NEW THERAPEUTICAL MODALITIES OF STERNUM INSTABILITY

Imren Y., Tasoglu I., Zor H., Ozgul H., Pekbay A., Sinci V.

Department of Cardiovascular Surgery , Gazi Universty, Ankara, Turkey

**OBJECTIVES:** Sternum dehiscence is a challenging problem following open heart surgery. New devices such as dynamic compressible plaques ( DCP ) and titanium meshes are seen to cover those complications in patients who did not respond to conservative methods.  
**METHODS,**  
**RESULTS:** We present two patients suffering from sternal instability despite use of Robiseck's method following CABG. In the first patient, we implanted dynamic compressible plaques to each side of sternum. In the second one, the choice of therapy was to implant titanium mesh to the allocated ribs instead of sternum because sternum was totally destructed. The patients did well and sternum dehiscences were stabled.

**CONCLUSIONS:** Use of DCP and titanium meshes are appropriate devices to stable sternum dehiscence following unsuccessful conservative methods for sternal instability particularly in older patients.

REF173

**D98 - CARDIAC PAPILLARY FIBROELASTOMA OF THE MITRAL VALVE CHORDAE**

Ucak A.<sup>1</sup>, Guler A.<sup>1</sup>, Ulusoy R.E.<sup>2</sup>, Cortelekoglu T.<sup>1</sup>, Basaran M.<sup>1</sup>, Us M.H.<sup>1</sup>, Yilmaz A.T.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, GATA Haydarpasa Training Hospital, Istanbul, Turkey,

<sup>2</sup>Department of Cardiology, GATA Haydarpasa Training Hospital, Istanbul, Turkey

**OBJECTIVES:** Cardiac papillary fibroelastomas are rare, benign, primary cardiac tumors, usually single and small located proximally to circulation on the cardiac valves. They generally develop on aortic valve leaflet, less frequently on mitral, tricuspid valve, the ventricular or the atrial septum. Echocardiography and cardiac catheterization are the most valuable diagnostic procedures for these tumors (Figure 1, Figure 2). Our aim is to report a case with a papillary fibroelastoma originated from the posterior chordae of mitral valve causing severe mitral regurgitation

**METHODS:** A 44 year-old-man who has complaints of effort precipitated palpitation and angina pectoris was sent to our hospital for clinical evaluation. Severe mitral regurgitation and a tumor localized on the primary chordae of the posterior mitral leaflet were detected by echocardiography, which was confirmed during the open-heart surgery. The valve was replaced with a mechanical prosthesis and the pathology has confirmed the diagnosis (Figure 3).

**RESULTS:** Patient was discharged postoperatively at day seven. The patient was remained asymptomatic during five months follow-up and there is no sign regarding with mitral regurgitation or any prosthetic valve dysfunction.

**CONCLUSIONS:** Papillary fibroelastomas are rarely observed primary cardiac tumors, which can lead to embolization, and may be associated with myocardial infarction, transient ischemic attacks, sudden death or stroke. Either cardiac catheterization or echocardiography can be utilized for the diagnosis of this pathology, which every cardiac interventionalist or cardiac surgeon remember this specific angiographic appearance during the evaluation of mitral regurgitation. **REF99**

**D99 - EARLY CLINICAL DIAGNOSIS OF FREE-FLOATING BALL THROMBUS IN THE LEFT ATRIUM**

Kayacioglu I.<sup>1</sup>, Konuralp C.<sup>1</sup>, Balci A.Y.<sup>1</sup>, Vural U.<sup>1</sup>, Uslu N.<sup>2</sup>, Camur G.<sup>1</sup>, Yekeler I.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Siyami Ersek Thoracic & Cardiovascular Surgery Center, Istanbul, Turkey

<sup>2</sup>Department of Cardiology, Siyami Ersek Thoracic & Cardiovascular Surgery Center, Istanbul, Turkey

**OBJECTIVES:** A free-floating ball thrombus in the left atrium(LA) is a rare clinical problem with potentially catastrophic consequences, and is generally developed years after mitral valve surgery. Thus, early diagnosis and prompt surgical intervention are crucial. The possible diagnosis can be made base on clinical findings only if there is a high index of suspicion. We report a case with free-floating thrombus in the LA, and analyze common clinical characteristics of these patients.

**METHODS:** A female patient who undergone closed mitral commissurotomy twenty years ago was applied our clinic with dyspnea and palpitation symptoms. It was learnt that dyspnea symptom patterns changed since last two months. Paradoxically, dyspnea increased in standing, while decreased in supine position. Chronic atrial fibrillation existed and echocardiography revealed severe mitral valve stenosis, severe tricuspid valve insufficiency, a ball shaped free-floating thrombus in the enlarged LA, mild aortic valve insufficiency, and mild pulmonary hypertension. The patient was scheduled for emergency operation.

**RESULTS:** Tricuspid annuloplasty and mitral valve replacement with mechanical prosthesis were performed. A 5x3 cm-size mobile thrombus was removed from the LA. In the literature, we found several reported cases presenting dyspnea, syncope, peripheral arterial emboli or sudden death. After careful review, we found all of the reported alive patients had a common symptom with our case: change in dyspnea with the posture.

**CONCLUSIONS:** We think dyspnea and palpitation triggered by different postures could be important markers for diagnosis of free-floating thrombus in the left side of the heart. If we realize that most of the cases are discovered incidentally by echocardiography, capturing these info from the patient history might be considered a good opportunity for an early diagnosis. **REF2**

**D100 - A NEW SUTURE TECHNIQUE FOR TRICUSPID VALVE REPLACEMENT IN EBSTEIN'S ANOMALY**

Nebigil R.M.

Izzet Baysal Medical Faculty Hospital Department of Cardiovascular Surgery

**OBJECTIVES:** Tricuspid valve replacement is known as one of the most complicated replacement. Paravalvular leakage (PVL) requires reoperation and heart blocks requiring pace implantation are seen quite often [1, 2]. We have created a new suture technique for tricuspid valve replacement which provides less amount of PVL outcome. It can be described as a 'one by one, interlocked suture technique' and each suture can be supported by teflon pledget.

**METHODS:** A 17 years old male patient referred to our hospital with symptoms such as dyspnea, cyanosis, cardiomegaly and congestive heart failure. After physical and laboratory examinations followed by echocardiography, angiography revealed Ebstein's anomaly combined with patent foramen ovale (PFO). A prosthetic valve was implanted with the new suture technique which is shown in Figure 1, 2, 3. As it can be seen in figure 4 and 5, the broken suture would take more space than our new technique (x1>x2). Therefore paravalvular leakage morbidity would be higher in other technique than that of our new technique.

**RESULTS:** Seven days after the operation the patient was discharged with no complications. His effort capacity improved from NYHA III to NYHA I. He has been doing well up to the recent check up.

**CONCLUSIONS:** We believe that, this technique has a very low percentage of PVL. Because, even if a suture loop is broken, every single stitch would support one another. **REF163**

**D101 - SURGICAL TREATMENT OF ANOMALOUS COURSE OF THE LEFT ANTERIOR DESCENDING ARTERY IN TETRALOGY OF FALLOT: A CASE REPORT**

Balkanay M., Eren E., Polat A., Toker M.E., Guler M.

Department of Cardiovascular Surgery, Kosuyolu Heart and Research Hospital, Istanbul, Turkey

**OBJECTIVE:** Congenital anomalies of the coronary arteries can occur in conjunction with tetralogy of Fallot.

**CASE PRESENTATION:** We describe a new technique to repair tetralogy of Fallot with an anomalous the left anterior descending artery crossing the right ventricular outflow tract is described in a 5-year-old boy. Preoperative echocardiography was revealed a suspicion of a coronary anomaly. In operation, it was found that the left anterior descending artery had originated from the left coronary sinus and coursed in front of the right ventricular outflow tract. Successful surgical repair was performed by using this new technique.

**CONCLUSION:** Our technique includes a tailored right ventriculotomy, separated double incision and transannular patching that allows the anomalous coronary artery intact. **REF77**

**D102 - A CASE REPORT OF TWO PATIENTS WITH AORTIC COARCTATION WITH ASSOCIATED CARDIAC DISORDERS**

Yilmazkaya B., Gurkahraman S., Cerci R., Colak N., Tasdemir O.

*Department of Cardiovascular Surgery, Akay Hospital, Ankara, Turkey*

**OBJECTIVES:** Among the adult group of aortic coarctation, the incidence of an additional cardiac disorder is high. A single stage or a two-stage repair is recommended, however, the strategy for repair of combined lesions presents a difficult surgical challenge.

**METHODS:** We operated on two patients with aortic coarctation; the first patient was 57 year-old male, associated with coronary artery disease, the second patient was 48 year-old, associated with valvular aortic stenosis. Both patients underwent a single stage repair using cardiopulmonary by-pass with moderate hypothermia. After median sternotomy both patients received ascending-to-descending aortic bypass graft through a posterior pericardiotomy with 14mm Hemashield graft.

**RESULTS:** Both patients had an uneventful post-operative course and both were discharged from hospital on the fifth post-operative day.

**CONCLUSIONS:** We recommend a single stage repair for aortic coarctation, associated with other cardiac disorders for it is a safer technique. **REF79**

**D103 - THE USE OF BOVINE MESENTERIC VENOUS GRAFT AS A SYSTEMIC TO PULMONARY SHUNT CONDUIT IN CHILDREN.**

Dogan O.F.<sup>1</sup>, Dogan R.<sup>1</sup>, Yilmaz M.<sup>1</sup>, Ozsoy F.<sup>1</sup>, Guvener M.<sup>1</sup>, Demircin M.<sup>1</sup>, Celebioglu B.<sup>2</sup>, Ozkutlu S.<sup>3</sup>, Boke E.<sup>1</sup>

*<sup>1</sup>Department of Cardiovascular Surgery, Hacettepe University Medical School, Ankara, Turkey*

*<sup>2</sup>Department of Anaesthesiology, Hacettepe University Medical School, Ankara, Turkey*

*<sup>3</sup>Department of Pediatric Cardiology, Hacettepe University Medical School, Ankara, Turkey*

**OBJECTIVES:** Polytetrafluoroethylene graft has been used for modified Blalock-Taussing (m-BT) shunt. But, several complications due to the conduit material were reported. There is limited report have been found about the use of biologic vascular prosthesis such as the BMVG as a m-BT shunt material. The aim to this study was to investigate the outcomes of the bovine mesenteric venous graft (BMVG) as a biologic graft for the systemic to pulmonary shunt material.

**METHODS:** We used the Pro-Col (BMVG) in eight cyanotic patients. The m-BT shunt was performed under cardiopulmonary bypass using a 4mm BMVG in three of them. Of all cases, anticoagulant and/or antiplatelets regimen was not administered postoperatively.

**RESULTS:** Early graft thrombosis was seen in one case only. In the remaining cases, there was no complication due to graft material such as seroma, bleeding from needle hole, early graft thrombosis or surgery itself postoperatively. All patients were discharged home within a good clinical condition. Serial and regular physical examination and echocardiographic examinations revealed that functioning m-BT shunt one, three and six months after the operations.

**CONCLUSIONS:** Though, frequently the synthetic conduits has been used as a graft material in cyanotic heart disease, many complications due to the graft material such as bleeding from needle hole, seroma, and early graft thrombosis have been reported. In addition, antiplatelet and/or anticoagulant agents have inevitable in these cases postoperatively. Our findings shows that the BMVG may be use without the administration of antiaggregant and/or anticoagulant regimen safely after the m-BT shunt procedure in children. This prosthesis may be alternate to synthetic grafts especially in cases who have contraindicated to the administration of the antiplatelet regimen. **REF121**

**D104 - ACUTE RUPTURED CONGENITAL SINUS VALSALVA ANEURYSMS**

Tuncer M.<sup>1</sup>, Eryonucu B.<sup>1</sup>, Guler N.<sup>1</sup>, Guntekin U.<sup>2</sup>, Gumrukcuoglu H.A.<sup>1</sup>

*<sup>1</sup>Department of Cardiology, Medical School, Van Turkey*

*<sup>2</sup>Department of Cardiology, Urfa Hospital, Sanliurfa Turkey*

**INTRODUCTION:** Congenital ruptured sinus of valsalva aneurysm is a rare lesion that usually originates in the right or noncoronary aortic sinus and communicates with a cardiac chamber, frequently right sided, producing an aorta-cardiac fistula. Pathologically, there is thinning of the aortic media, an incomplete fusion of bulbar septum, and truncal ridges with malfusion of aortic media an annulus fibrosis resulting in aneurismal formation. The Unruptured aneurysm of sinus Valsalva is usually asymptomatic, but when it ruptures are symptomatic. These symptoms can range from angina to acute pulmonary edema and cardiac collapse. Diagnosis can be made by clinical and echocardiographic findings. Although the mortality is low (2%), the conventional treatment of this aneurysm is surgical repair.

**CASE:** A 22 year old man with no previous cardiac complains entered to our emergency department immediately after a football match. His major complains were rapidly developing dyspnea, palpitation, fatigue and shortness in breath after football match. Physical examination revealed bounding pulses, a palpable thrill, and a continuous heart murmur accentuated in diastole at the left sternal edge. TA 120/50 mmHg. An increase in pulmonary vascularity was obvious but cardiac chambers were normal at chest radiogram. Transthorasic echocardiography revealed an aneurismal dilatation of right sinus valsalva in the direction of the right ventricle. A marked left to right turbulent flow from the aortic root to the right ventricle was seen in Color Doppler imaging. Patient was referred to cardiovascular surgery for surgical repair. **REF13**

**D105 - MYOCARDIAL INFARCTION IN A YOUNG BOY WITH NORMAL CORONARY ARTERIES; IT'S RELATION WITH PSEUDOEPHEDRINE USE AND ACUTE STREPTOCOCCAL INFECTION**

Ismael B.<sup>1</sup>, Oktay E.<sup>2</sup>

*<sup>1</sup>Department of Cardiology, Usak State Hospital, Usak, Turkey*

*<sup>2</sup>Department of 2. Cardiology, Atatürk Educational Hospital, Izmir, Turkey*

**OBJECTIVES:** The leading cause of acute myocardial infarction (AMI) is coronary artery disease. But young people are more likely to suffer from AMI with normal coronary arteries. Drug effects on myocardial infarctions with normal coronary arteries have not been well demonstrated yet. We aimed to report a sixteen year old boy suffering from AMI with normal coronary arteries and using the decongestant drug pseudoephedrine as symptomatic therapy for streptococcal infection of upper respiratory tract.

**CASE PRESENTATION:** A sixteen year old boy presented to the emergency department with chest pain. He was previously healthy and had no history of smoking. We reported here the youngest AMI case associated with pseudoephedrine use and acute streptococcal infection, and having normal coronary arteries. The diagnosis of AMI was established with typical electrocardiographic signs, typical enzyme changes of AMI and urgent echocardiographic evaluation. Coronary vasospasm associated with pseudoephedrine use, endothelial dysfunction and prothrombotic state caused by acute streptococcal infection may be responsible mechanisms of AMI in the presented case.

**CONCLUSIONS:** The possibility of AMI should be considered even in very young adolescents having acute streptococcal pharyngeal infection, and it is important to obtain a complete history of the drugs used. Our report also provides support to the thing that the drugs consisting pseudoephedrine may be taken under prescription and limited to only local usage. **REF17**

**D106 - TETRALOGY OF FALLOT: INFLUENCE OF TRANSANNULAR PATCH ON EARLY AND MID-TERM OUTCOME**

Ekim H.<sup>1</sup>, Kutay V.<sup>1</sup>, Akbayrak H.<sup>2</sup>, Hazar A.<sup>2</sup>, Tuncer M.<sup>3</sup>, Basel H.<sup>2</sup>, Karadag M.<sup>2</sup>, Demir İ.<sup>2</sup>, Yakut C.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Yuzuncu Yil University, Van, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Van Yuksek Ihtisas Hospital, Van, Turkey

<sup>3</sup>Department of Cardiology, Yuzuncu Yil University, Van, Turkey

**OBJECTIVES:** Complete repair of Tetralogy of Fallot (TOF) with small pulmonary valve annulus needs transannular patch. The resultant pulmonary regurgitation may lead to ventricular dysfunction. The aim of our study is to review our experience with complete repair of TOF requiring transannular patching.

**METHODS:** Between May 2000 and March 2005, 20 of the patients with TOF who had complete repair at the Yuzuncu Yil University and Van Yuksek Ihtisas Hospitals were included in the study. There were 11 female and 9 male patients aging between 3-24 years.

**RESULTS:** All patients were diagnosed preoperatively by echocardiography and cardiac catheterization. After complete repair using transannular patch graft, there was a significant improvement in the functional class. There were no deaths.

**CONCLUSIONS:** We suggest that, when there is no contraindication, all patients with TOF should have total correction regardless of the age. Transannular patching can yield excellent results in short and mid-term.

REF40

**D107 - GRAFT REPLACEMENT FOR MAIN PULMONARY ARTERY ANEURYSM**

Ozler A., Tarhan I. A., Kehlibar T., Yilmaz M., Berköz K.

Department of Cardiovascular Surgery, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Education and Research Hospital, Istanbul, Turkey

**OBJECTIVES:** Aneurysm of the main pulmonary artery is a very rare entity. We report two cases in which successful surgical treatment were performed by resection of the aneurysm and graft replacement using Dacron graft.

**METHODS:** Both patients were male. The first patient was 57 and the second one was 70 years old. They admitted to the hospital because of chest pain and shortness of breath, respectively. On physical examination pectus excavatum was detected in both patients. Thorax magnetic resonance imaging of the first patient showed a dilated main pulmonary artery that measured 7 x 5 cm in diameter. Coronary angiography showed significant stenosis in left anterior descending and right coronary arteries. Thorax magnetic resonance imaging of the second patient showed a main pulmonary artery aneurysm 5.5 x 3 cm in diameter. Surgery was performed through a median sternotomy with the use of 28C systemic hypothermia and bicaval cardiopulmonary bypass. Antegrade cardioplegy was used for myocardial protection. The aneurysm of the main pulmonary artery and dilated bifurcation of the pulmonary artery were resected and reconstruction using a 26-mm Dacron graft was performed in both patients. Concomitant coronary bypass surgery was performed to the first patient.

**RESULTS:** The patients' postoperative courses were uneventful and they are now leading normal lives.

**CONCLUSIONS:** Different surgical techniques for aneurysm repair have been described. We believe graft replacement is the choice of the procedure with an excellent surgical outcome and eliminating the risk of recurrence.

REF74

**D108 - ANOMALOUS ORIGIN OF THE RIGHT CORONARY ARTERY ABOVE THE RIGHT SINUS OF VALSALVA OF A STENOTIC BICUSPID AORTIC VALVE THAT REQUIRED SURGICAL TREATMENT**

Ozler A.<sup>1</sup>, Tarhan I. A.<sup>1</sup>, Kehlibar T.<sup>1</sup>, Yilmaz M.<sup>1</sup>, Uslubas S.<sup>2</sup>, Dumantepe M.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Education and Research Hospital, Istanbul, Turkey

<sup>2</sup>Department of Cardiology, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Education and Research Hospital, Istanbul, Turkey

**OBJECTIVES:** Anomalous origin of the right coronary artery is an exceedingly rare anomaly. We present a case of the right coronary artery arising above the right sinus of Valsalva. The anomaly required surgical treatment while he underwent aortic valve replacement.

**METHODS:** The 72 year old male patient was admitted to the hospital with weariness and exertional dyspnea (New York Heart Association class II). Electrocardiogram showed sinus rhythm. Blood chemistry analysis results were normal. In transthoracic echocardiography a maximal 123 mmHg, mean 94 mmHg gradient across a severely stenotic bicuspid aortic valve was observed. Coronary angiography showed 30% stenosis in the proximal portion of left anterior descending coronary artery. Circumflex artery was normal. Right coronary artery was showed with aortography and was evaluated normal. Surgery was performed through a median sternotomy. After the patient was cooled to 28C, aorta was cross clamped. The first dose of cardioplegia (10 mL/kg) was given into the aortic root. Aorta was opened through a standard transverse incision. In the exploration the right coronary artery originated above the right sinus of Valsalva. The bicuspid aortic valve was excised and replaced with a mechanic aortic valve. Saphenous vein graft was anastomosed to the proximal portion of the right coronary artery.

**RESULTS:** The patient's postoperative course was uneventful. Postoperative coronary angiography showed patent saphenous graft. The patient was well at 6-month follow-up.

**CONCLUSIONS:** Saphenous vein bypass can be performed for the surgical treatment of anomalous origin of the right coronary artery above the left sinus of Valsalva when required.

REF75

**D109 - NURSING ASPECTS IN PREPARATION OF FRESH AORTIC AND PULMONARY HOMOGRAFTS FOR REPAIR OF CONGENITAL CARDIAC ANOMALIES**

Sokmen A.<sup>1</sup>, Ongun H.<sup>1</sup>, Metin K.<sup>2</sup>, Ugurlu B.<sup>1</sup>, Sariosmanoglu N.<sup>1</sup>, Hazan E.<sup>1</sup>, Dontlu C.<sup>3</sup>, Oto O.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Dokuz Eylul University Medical School, Izmir, Turkey,

<sup>2</sup>Department of Cardiovascular Surgery, Ege Saglik Hospital, Izmir, Turkey,

<sup>3</sup>Institutional Transplant Coordinator, Dokuz Eylul University Medical School, Izmir, Turkey

**OBJECTIVES:** To present our technique and experience in the use of fresh wet aortic and pulmonary homografts in the repair of congenital cardiac anomalies.

**METHODS:** Between March 2001-April 2005, hearts from organ donors not suitable for heart transplantation were harvested under sterile conditions and transferred to our hospital from 18 different institutions. 19 of the hearts were transported from 12 different cities by commercial flight, 12 hearts were local. Homografts were prepared in the operating room by a surgeon and a surgical nurse. Homografts were irrigated copiously with saline, cultured, measured and stored at 4 C in a solution containing vancomycin hydrochloride, clindamycin, ceftazidime, amphotericin B, and amikacin.

**RESULTS:** Homografts from 20 hearts were used in 22 children (mean age 4.8±3.4 years), 11 hearts were wasted. Mean age of the heart donors was 30.2±16.4 years (5 months - 60 years). Mean size of the homografts was 22±5 mm (11- 28mm). Mean storage before use was 6±2 days (1-13 days). In 18 patients, a valved conduit was used to form a connection between the pulmonary ventricle and the pulmonary artery, in 3 patients a non-valved aortic conduit was used in performing an extra-cardiac Fontan and in 1 patient non-valved pulmonary and aortic conduits were used to repair an infected aortic aneurysm complicating aortic coarctation.

**CONCLUSIONS:** With the help of a national organ sharing program fresh homografts can be procured and used successfully for repair of complex congenital anomalies.

REF100

**D110 - COMPLETION OF TOTAL CAVAPULMONARY ANASTOMOSIS THOROUGH A LEFT ANTERIOR THORACOTOMY:CASE REPORT**

Oto O., Ugurlu B., Sariosmanoglu N., Comakli H., Hazan E.

*Department of Cardiovascular Surgery, Dokuz Eylul University Medical School, Izmir, Turkey*

**OBJECTIVES:** To present left thoracotomy as an alternative approach for completion of a total cavapulmonary anastomosis following a bidirectional Glenn shunt.

**METHODS:** A 14 year old female patient initially presented 4 years ago with a complex cardiac anomaly consisting of a single ventricle, single atrium, left atrial isomerism, left persistent vena cava superior and interrupted inferior vena cava with hemiazygos continuation draining to the common atrium, arterial malposition, right aortic arch and pulmonary stenosis. A bi-directional Glenn shunt through a median sternotomy (right superior vena cava-right pulmonary artery) was performed for palliation. Although her symptoms improved, she was still cyanotic and a completion cava-pulmonary anastomosis was deemed necessary. **RESULTS:** Left sided drainage of both left superior vena cava and the inferior vena cava by the hemiazygos path afforded an alternative surgical approach through a left thoracotomy. Patient was put on cardiopulmonary bypass from the left femoral vessels and the venous connection draining both the left superior vena cava and hemiazygos vein was separated from the common atrium and anastomosed to the left pulmonary artery. Patient recovered uneventfully from surgery and is currently followed with an arterial oxygen saturation of 95% on room air.

**CONCLUSIONS:** The use of a left thoracotomy afforded an excellent exposure of the surgical field and avoided a median sternotomy through previous surgical adhesions. This approach should be kept in mind in similar cases with complex venous drainage problems undergoing completion Fontan procedures. **REF115**

**D111 - EFFICIENCY OF PROSTACYCLIN IN THE TREATMENT OF PROTAMINE-MEDIATED RIGHT VENTRICULAR FAILURE AND ACUTE PULMONARY HYPERTENSION**

Kiris I.<sup>1</sup>, Ocal A.<sup>1</sup>, Erdinc M.<sup>2</sup>, Peker O.<sup>1</sup>, Yavuz T.<sup>1</sup>, Ibrsim E.<sup>1</sup>

*<sup>1</sup>Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey*

*<sup>2</sup>Department of Anesthesiology, Municipality Hospital, Konya, Turkey*

**OBJECTIVES:** Protamine is used after cardiopulmonary bypass has stopped in order to reverse the anticoagulant effects of heparin in open-heart operations. Hemodynamic responses to protamine are common, ranging from minor perturbations to cardiovascular collapse. The aim of the present study was to investigate whether prostacyclin is effective in the treatment of protamine-mediated acute pulmonary hypertension and right ventricular failure in isolated coronary artery bypass grafting (CABG) operations.

**METHODS:** In sixty-eight (1.78 %) of 3800 patients, acute pulmonary hypertension and right ventricular failure developed during or following the protamine infusion during isolated CABG operations. These 68 patients were included in the study and were randomized into two groups. Thirty-eight of the patients (prostacyclin group) received prostacyclin, norepinephrine and dopamine whereas 30 patients (control group) received nitroglycerin, norepinephrine and dopamine. Hemodynamic data were recorded before and after the above drug combinations.

**RESULTS:** The mean value of left ventricle ejection fraction significantly increased ( $p < 0.05$ ) and mean values of central venous pressure, pulmonary artery systolic and diastolic pressure, pulmonary capillary wedge pressure and pulmonary vascular resistance significantly decreased ( $p < 0.05$ ) in the prostacyclin (PGI<sub>2</sub>) group. The mean value of pulmonary capillary wedge pressure significantly decreased ( $p < 0.05$ ) and mean value of central venous pressure significantly increased ( $p < 0.05$ ) in the control group.

**CONCLUSIONS:** In conclusion, prostacyclin (PGI<sub>2</sub>) is effective in the treatment of protamine-mediated acute pulmonary hypertension and right ventricular failure in isolated CABG operations. This finding may be a contribution to the treatment of severe protamine complications during open-heart operations. **REF105**

**D112 - CARDIAC INVOLVEMENT IN AARSKOG SYNDROME AND COEXISTED MULTIPLE VALVULAR DISEASE**

Korkut A.K.<sup>1</sup>, Omay O.<sup>1</sup>, Celebi S.<sup>2</sup>, Gunay I.<sup>1</sup>, Suzer K.<sup>1</sup>

*<sup>1</sup>Department of Cardiovascular Surgery, Istanbul University, Haseki Cardiology Institute, Istanbul, Turkey*

*<sup>2</sup>Department of Anesthesiology, Istanbul University, Haseki Cardiology Institute, Istanbul, Turkey*

**OBJECTIVES:** Aarskog Syndrome is a familiar syndrome with typical short stature, facial dysplasia and genital anomalies. Associated congenital cardiac anomaly was reported only in 6 patients. Our case is the first multiple cardiac valvular disease in Aarskog Syndrome to our knowledge.

**CASE PRESENTATION:** Mitral valve regurgitation repaired using pericardial strip. Postoperative outcome was uneventful.

**CONCLUSIONS:** We suppose that, valvular annular dilatation in Aarskog Syndrome is coexistent. An advanced cardiac evaluation is necessary to reveal the associated cardiac pathologies in Aarskog Syndrome. **REF124**

**D113 - ONE STAGE CORRECTION FOR CARDIAC AND THORACIC PATHOLOGIES WITH THE AID OF CARDIOPULMONARY BYPASS**

Dogan R.<sup>1</sup>, Ucar H.I.<sup>1</sup>, Oc M.<sup>1</sup>, Guvener M.<sup>1</sup>, Ozsoy F.<sup>1</sup>, Onuk B.E.<sup>1</sup>, Gundogdu G.<sup>1</sup>, Yazicioglu A.<sup>1</sup>, Yilmaz M.<sup>1</sup>, Pasaoglu I.<sup>1</sup>, Kanbak M.<sup>2</sup>, Demircin M.<sup>1</sup>

*<sup>1</sup>Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey*

*<sup>2</sup>Department of Anesthesiology, Hacettepe University, Ankara, Turkey*

**OBJECTIVES:** The demand for changing cardiac surgical patients profile coincides with a change in the profile of patients presenting for surgery, requiring modification in perioperative management strategies. Especially patients who require thoracic surgical approach, those with difficulty in intubation, as well as patients where complete resection is not possible. Cardiopulmonary bypass offers surgical treatment of all pathologies in one stage.

**METHODS:** Between January 1985 and June 1999, 10 patients underwent simultaneous cardiac operation and thoracic surgical procedures. The cases were aorto-pulmonary paraganglioma infiltrated pulmonary artery bifurcation, long segment tracheal stenosis which was impossible to entubate, haemodynamic instability and redundant bronchus, ventricular septal defect (VSD) + pulmonary sling+pig lobe+congenital tracheobronchial stenosis, VSD + partial anomalous pulmonary venous return +intralobar pulmonary sequestration, severe pectus carinatus + mitral valve replacement, severe pectus excavatus and mitral valve replacement, CABG and huge apical bullae, CABG and lung carcinoma, inoperable cardiomyopathy in a patient with tracheal tumor. There were 1 early mortality due to mediastinitis and 1 late mortality due to metastatic lung carcinoma. Cardiopulmonary bypass (CPB) provides both adequate oxygenation and an unobstructed surgical field with optimal access to the thoracic field. Simultaneous cardiac operation and lung resection were not associated with increased early or late morbidity or mortality. Cardiopulmonary bypass does not adversely affect survival in patients with malignant disease.

**CONCLUSIONS:** CPB can also be used in patients with a tumoral mass adherent to the great vessels, in patients with critically narrowed airway, etc. We advocate consideration of concurrent repair of the thoracic and cardiac lesions. **REF157**

**D114 - ISOLATED UNILATERAL ABSENCE OF LEFT PROXIMAL PULMONARY ARTERY AND FALLOT TETRALOGY**

Halit V.<sup>1</sup>, Olgunturk R.<sup>2</sup>, Tunaoglu S.<sup>2</sup>, Erer D.<sup>1</sup>, Imren V. Y.<sup>1</sup>,  
Canter B.<sup>2</sup>, Koksall P.<sup>1</sup>, Zor H.<sup>1</sup>, Tumer N.B.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Gazi University, Ankara, Turkey  
<sup>2</sup>Departments of Pediatric Cardiology, Gazi University Medical School, Ankara, Turkey

**OBJECTIVES:** Isolated unilateral absence of proximal pulmonary artery (UAPPA) is a rare congenital lesion with diverse clinical presentations. **CASE REPORT:** An 8 year-old boy with complaints of cyanosis and syncope was admitted. The echocardiography and cardiac angiography showed findings of TOF together with MAPCA originating from the aorta, following a course similar to the proximal left pulmonary artery but later going downwards to the basal part of the left lung. In surgical exploration, MAPCA of 7 mm in diameter originated from left common carotid artery ending at the level of hilus as a vessel originated structurally similar to the left pulmonary artery. After total correction for TOF, the aortic origin of this vessel was transfixated, ligated and end-to-side anastomosis to the main pulmonary artery was performed. In postoperative period he developed heart failure which didn't respond to medical therapy. It was concluded that MAPCA which was anastomosed to the main pulmonary artery was insufficient to carry the blood to left lung which led to the heart failure. Therefore cardiac angiography was repeated and it was observed that MAPCA was patent but was too small in diameter to carry sufficient amount of blood to the left lung. A heparin coated 6 mm-diameter graft was anastomosed between this MAPCA (which was converted to the proximal left pulmonary artery in the first operation) and the main pulmonary artery.

**CONCLUSIONS:** Patients with (TOF), UAPA, and (MAPCA) usually need staged surgical procedures. There is no clear consensus regarding initial procedure which should be different in each case.

REF172

**D115 - CORONARY VEIN ANOMALY IN TETRALOGY OF FALLOT**

Kutsal A.<sup>1</sup>, Moldibi O.<sup>1</sup>, Ulusan V.<sup>2</sup>, Bolat A.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey,  
<sup>2</sup>Department of Anaesthesia, Dr. Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

**OBJECTIVES:** The coronary veins drain blood from the myocardium to the right atrium. The larger veins accompany the major arteries, and drain into the coronary sinus. Origin of the left anterior descending coronary artery from the right coronary artery occurs in approximately 3-5 % of patients with TOF. The LAD coronary artery crosses the right ventricular outflow tract and is susceptible to injury during surgery.

**METHODS:** A 31 months of girl with TOF underwent an operation for total correction. After opening the pericardium a major vein was observed that took its origin from the LAD distribution, crossing the right ventricular outflow tract and reached to the right coronary artery distribution in the right atrioventricular sulcus. The vein was mobilised and suspended, and total correction was performed with a cross-annular patch extending under the vein.

**RESULTS:** The postrepair RV/LV pressure ratio was 0.35  
**CONCLUSIONS:** Although coronary artery anomalies in TOF were known and reported for several times we haven't seen any venous anomaly and couldn't find a similar case in the literature review.

REF171

**D116 - EVALUATION OF RIGHT VENTRICULAR FUNCTION BY MYOCARDIAL PERFORMANCE INDEX IN CHILDREN WITH FALLOT'S TETRALOGY BEFORE AND AFTER SURGICAL REPAIR**

Kumtepe S., Sagin Saylam G., Unal N., Kir M., Paytoncu S.,  
Kosecik M.

Department of Pediatric Cardiology, Dokuz Eylul University Faculty of Medicine, Izmir, Turkey

**OBJECTIVES:** The clinical and prognostic value of Doppler-derived myocardial performance index (MPI, Tei index) in evaluating right ventricular (RV) function has been documented in various cardiac conditions. The aim of this study was to investigate RV function using the Tei index in patients with Fallot's tetralogy (FT) before and after surgical repair.

**METHODS:** 17 patients with FT aged 1-13.1 (mean 4.3±3.9) years were evaluated prior to and 2-12 months after surgical repair (Group I). 55 patients with repaired FT aged 1.8-15.8 (mean 6.2±3.9) years were evaluated 1-12.6 years after the operation (Group II). The control group consisted of 63 healthy children aged 0.4-17.4 (6.5±4.7) years. Tei index [MPIRV= (isovolumic contraction time + isovolumic relaxation time) RV/ejection timeRV] was calculated using Doppler echocardiography.

**RESULTS:** MPI values of Groups I and II were significantly higher than that of the control group (p=0.03 and p=0.0001, respectively). The difference between the pre and postoperative MPI values in Group I was not significant (p=0.06). Postoperative patients with RV outflow tract aneurysm had higher MPI values (p<0.01). Significant correlations between MPI and age at surgery or time after surgery could not be demonstrated (p= 0.32 and p=0.62, respectively).

**CONCLUSIONS:** Tei index is a useful method in the assessment of RV function in patients with FT before and after surgical repair. In patients with FT, RV dysfunction starts preoperatively and continues in the postoperative period, emphasizing the need for long-term follow-up.

REF170

**D117 - VASCULAR RING: REPORT OF FIVE CASES WITH EMPHASIS ON UNUSUAL SYMPTOMS**

Kir M.<sup>1</sup>, Sagin Saylam G.<sup>1</sup>, Cakmakci H.<sup>2</sup>, Paytoncu S.<sup>1</sup>, Unal N.<sup>1</sup>,  
Kumtepe S.<sup>1</sup>, Kosecik M.<sup>1</sup>

<sup>1</sup>Department of Pediatric Cardiology, Dokuz Eylul University Faculty of Medicine, Izmir, Turkey,  
<sup>2</sup>Department of Radiology, Dokuz Eylul University Faculty of Medicine, Izmir, Turkey

**OBJECTIVES:** The presentation of developmental anomalies of the aortic arch producing a vascular ring varies from asymptomatic patients to infants with severe symptoms caused by compression of the trachea and/or esophagus. In this report, five rare cases of vascular ring are discussed.

**METHODS:** Five patients (4 boys and 1 girl) aged 4-32 (mean 13.6±11.08 median 12) months are presented.

**RESULTS:** In cases 1-2, an aberrant retroesophageal right subclavian artery with left aortic arch was detected by barium esophagography, MRI and angiography. There were no associated cardiac defects. Although this anomaly does not produce a complete ring and is almost always asymptomatic, both cases presented with recurrent respiratory symptoms. In cases 3-4, a complete vascular ring caused by a right aortic arch with retroesophageal diverticulum of Kommerell, aberrant left subclavian artery and ligamentum arteriosum was detected, both had recurrent respiratory distress and wheezing. In case 3, the diagnosis was made by angiography and MRI performed because his reflex apnea and cyanosis episodes could not be explained by the co-existing large VSD. In case 4 the diagnosis was made by MRI which is superior to angiography when the ligamentum arteriosum is a component of the ring. Case 5 presented with recurrent respiratory symptoms and a pulmonary sling was diagnosed by barium esophagography, MRI and angiography. All patients underwent surgery and their symptoms resolved after the operation.

**CONCLUSIONS:** Vascular ring anomalies should be considered in the differential diagnosis of recurrent respiratory symptoms or atypical symptoms not readily explained by the coexisting cardiac defect.

REF160

**D118 - CHOICE OF SURGICAL INCISION WITH RIGHT ARCUS AORTA AND LEFT ABERRANT SUBCLAVIAN ARTERY ANOMALIES**

Halit V.<sup>1</sup>, Iriz E.<sup>1</sup>, Olgunturk R.<sup>2</sup>, Turgut N.<sup>1</sup>, Kula S.<sup>2</sup>, Tunaoglu F.S.<sup>2</sup>

<sup>1</sup>Gazi University School of Medicine, Department of Cardiovascular Surgery, Ankara  
<sup>2</sup>Gazi University School of Medicine, Department of Pediatri, Ankara

**OBJECTIVES:** Vascular rings may cause respiratory and feeding problems at neonates. Early diagnosis and correction of this pathology is very important to decrease morbidity and mortality.

**METHODS:** we report a 15 months old infant with a right arcus aortae and an aberrant left subclavian artery who had two operations before; one of which was open heart surgery; because of misdiagnosis and the unavailability of surgical techniques.

**RESULTS:** He had two surgeries, one of which was right upper lobectomy by right thoracotomy made because of bronchiectasiae when he was 3 months old and the other one was ASD repairment made by sternotomy when he was 6 months old. At the oesophagogram a compression to the 1/3 proximal oesophageous both from right and left sides showed and it's described that the compression caused by the right arcus aortae and left aberrant subclavian artery. The baby taken under surgery. With left lateral thoracotomy we got into thorax. Oesophageous, left subclavian artery and descending aortae observed. Left subclavian artery turned toward, tied up from the proximal end and the division made. The segment between the proximal subclavian artery and its branches resected. The thorax closed up with PDS suture. There was no complication during the surgery.

**CONCLUSIONS:** We believe that at the infants with symptoms depending on RAA/LASA, before taking surgery decision the babies must be carefully examined and if there is not any other abnormalities left thoracotomy is the most useful technique for surgical exposure.

REF155

**D119 - VENTRICULAR SEPTAL DEFECT CLOSURE IN A CRISS-CROSS HEART**

Kutsal A.<sup>1</sup>, Tufekcioglu O.<sup>2</sup>, Fansa I.<sup>3</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Dr. Sami Ulus Research and Training Hospital, Ankara, Turkey

<sup>2</sup>Department of Cardiology, Turkiye Yuksek Ihtisas Research and Training Hospital, Ankara, Turkey

<sup>3</sup>Department of Cardiovascular Surgery, Turkiye Yuksek Ihtisas Research and Training Hospital, Ankara, Turkey

**OBJECTIVES:** A 17 year old male with a history of decreasing exercise tolerance and mild cyanosis on extreme exercise for years was admitted to our clinic with an progressive increase in his complaints within the last few months. Two dimensional and doppler echocardiography revealed; viscerotrial situs solitus, normal pulmonary and systemic venous return, atrioventricular (D-loop) and ventriculoarterial concordance. Atrioventricular connection was in criss-cross fashion. Aorta (L-position) was in anterior and leftward position to the pulmonary artery. There was a large perimembranous ventricular septal defect with Qp/Qs = 1.8

**METHODS:** During the operation the anatomy was a concordant criss-cross heart due to Van Praagh's {S,D,L} classification. Left ventricle was located anteriorly and right ventricle posteriorly. Left anterior descending artery was longitudinally localised in the interventricular sulcus. Aorta was located anteriorly, and the pulmonary artery posteriorly and to the right. After the heart was arrested with cold cardioplegic solution an oblique right atriotomy was made and perimembranous septal defect was closed with a 15 x 20 mm Dacron patch through the right atrium and the tricuspid valve.

**RESULTS:** Postoperative course was uneventful, and the patient was discharged on the 7th postoperative day in normal sinus rhythm.

**CONCLUSIONS:** Concordant criss-cross heart is a rare congenital malformation that results from an abnormal rotation of the ventricular mass around its longitudinal axis. It is not quite in itself a malformation of significance. However, with a complex malformation in need of surgical correction, preoperative complete understanding of the type of the connection is very important for the successful surgical approach.

REF135

## MINIMAL INVASIVE ARRHYTHMIA SURGERY

**D120-DETERMINANTS OF ATRIAL FIBRILLATION AFTER CORONARY ARTERY SURGERY**

Ekim H.<sup>1</sup>, Kutay V.<sup>1</sup>, Demirbag R.<sup>2</sup>, Turan E.<sup>3</sup>, Hazar A.<sup>4</sup>, Tuncer M.<sup>5</sup>, Karadag M.<sup>4</sup>, Yakut C.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Yuzuncu Yil University, Van, Turkey

<sup>2</sup>Department of Cardiology, Harran University, Van, Turkey

<sup>3</sup>Department of Anesthesiology, Van Yuksek Ihtisas Hospital, Van, Turkey

<sup>4</sup>Department of Cardiovascular Surgery, Van Yuksek Ihtisas Hospital, Van, Turkey,

<sup>5</sup>Department of Cardiology, Yuzuncu Yil University, Van, Turkey

**OBJECTIVES:** Atrial fibrillation (AF) after coronary artery surgery is the most common sustained arrhythmia. Its pathophysiology is unclear, and its prevention and management remain suboptimal. The aim of this study was to determine the incidence of AF, and identify its clinical predictors after coronary bypass surgery.

**METHODS:** Two hundred and forty five of the patients who had coronary artery bypass grafting (CABG) at the department of Cardiovascular Surgery, between January 2000 and November 2003 were included in the study. Patients with a clinical history of chronic renal disease, previous coronary bypass operation, valve disease, thyroid disorders, or ventricular aneurysm were not included to obviate disorders that could be associated with an increase incidence of AF. The 68 patients were operated on without cardiopulmonary bypass (CPB), and the remaining patients underwent standard CABG using CPB.

**RESULTS:** There were 194 male and 52 female patients ranging in age between 28 and 90 with a mean age of 58±3. The group with AF had a higher incidence in male gender, and a history of hypertension than the group without AF. There were no significant differences in left atrial dimension, ejection fraction, CPB time, cross clamp time between the two groups.

**CONCLUSIONS:** Old age, male gender, prolonged P wave duration and hypertension were predictors of AF after coronary artery surgery. Avoiding CPB did not aid the reduction of AF at our department.

REF97

**D121-HEAT SHOCK PROTEIN 60 ANTIBODY: A NOVEL PREDICTOR FOR POSTOPERATIVE ATRIAL FIBRILLATION?**

Oc M.<sup>1</sup>, Uçar H.I.<sup>1</sup>, Pınar A.<sup>2</sup>, Akbulut B.<sup>1</sup>, Oc B.<sup>3</sup>, Akinci S.<sup>3</sup>, Akyon Y.<sup>4</sup>, Kanbak M.<sup>3</sup>, Demircin M.<sup>1</sup>, Boke E.<sup>1</sup>, Dogan R.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey  
<sup>2</sup>Department of Biochemistry, Hacettepe University, Ankara, Turkey  
<sup>3</sup>Department of Anesthesiology, Hacettepe University, Ankara, Turkey  
<sup>4</sup>Department of Clinical Microbiology, Hacettepe University, Ankara, Turkey

**OBJECTIVES:** We aimed to assess the HSP-60 antibody as a predictor for postoperative atrial fibrillation in patients who underwent coronary artery bypass surgery.

**METHODS:** We prospectively studied 20 consecutive patients admitted for elective primary CABG. Ten (22,2%) of the patients had AF postoperatively (Group A). Ten patients of the group without AF were selected randomly as control group (Group B). The ECG characteristics and cardiovascular risk profile were documented. Exclusion criteria were preceding history of AF, other associated operations, active infection, history of autoimmune diseases, and use of immunosuppressive drugs. Pre- and postoperative blood samples were collected, and plasma was stored at -80°C for subsequent analysis. Serum total Anti-Hsp60 levels were measured with a commercial enzyme-linked immunosorbent assay (ELISA) kit (StressXpres™, Stressgen Biotechnologies, Victoria, BC, Canada). Postoperatively, heart rate and rhythm were continuously monitored for the first 48 hours. Patients were subjected to daily morning 12-lead ECGs.

**RESULTS:** Mean age in Group A was 62,1 ± 7,9 and 62,3 ± 7,5 in Group B, where 8/10 (80%) patients were male in Group A and 6/10 (60%) patients were male in Group B. Five patients (50%) in Group A and 3 (30%) in Group B had preoperative event of myocardial infarction. Mean ejection fraction was 44,7 ± 8,7 % and 46,4 ± 7,6 % in Group A and B, respectively. The overall AF incidence in this small study group was 22,2%. Anti-HSP60 IgG value was 27,76 ± 12,69 AU in Group A preoperatively and decreased to 13,73 ± 5,51 AU postoperatively. In contrast, preoperative value of anti-HSP60 IgG was 9,94 ± 2,92 AU and decreased to 6,72 ± 1,89 AU postoperatively in Group B. Mann-Whitney U test showed significant difference regarding preoperative anti-HSP60 IgG levels in Group A compared to Group B (p<0,002), which might be interpreted as a strong association between postoperative AF and preoperative levels of anti-HSP60 IgG.

**CONCLUSIONS:** We report for the first time a novel association between HSP60 antibodies and the occurrence of postoperative AF. This finding lends support to the possible role of inflammation and cross-reactive autoimmunity in the development of AF. **REF156**

**D122-PACE LEAD THROMBOSIS: A REPORT OF CASE**

Ceviz M., Kocak H., Senocak H., Kocogullari C.U.

Department of Cardiovascular Surgery, School of Medicine Ataturk University Erzurum, Turkey

**OBJECTIVES:** The pace lead thrombosis is rare, but it is a significant clinical condition in terms of its complications.

**METHODS:** A patient who 22-year-old had referred to cardiology department with complaining of chest pain and dispnea. A pace had been inserted to the patient for atrioventricular block previously twice (before 10 years and 3 years). Before 1 year, while she had 5 monthly gravida, she was treated with complaining of chest pain and dispnea in cardiology department. In postpartum term, her complaints gradually increased. Echocardiography was showed a thrombus 0.6x0.7 cm diameter, which above of the pace wire adjacent to interatrial septum in right atrium. The patient was hospitalized with diagnosis pace lead thrombosis and pulmonary embolism. The patient was treated by using thrombolytic agent. Then, the diameter of thrombus was reduced, and the patient's clinical complaints was recovery, she was discharged with orally anticoagulant. Her complaints were again appeared after six months. The diameter of the thrombus was enhanced in her echocardiography. We decided to operate in order to remove the pace lead. The operation was performed through a right minimally thoracotomy incision with femoral cannulation underwent for the extracorporeal circulation. Cardiopulmonary bypass was established via femoral artery and vein. The right atriotomy was made. The pace lead thrombosis was found in the right atrium, and the pace lead were removed. The new pace leads was placed above the epicardial area and pace maker inserted in the right rectus muscle.

**RESULTS:** The patient was discharged on the fifth day of the postoperative period.

**CONCLUSIONS:** The pace lead thrombosis was functional. But, it may cause pulmonary embolism or other complications. Therefore, if the thrombolytic therapy was failed, the surgical treatment would be performed in early term. **REF70**

**D123-THE ONE YEAR FOLLOW-UP RESULTS OF SALINE IRRIGATED RADIOFREQUENCY ABLATION FOR ATRIAL FIBRILLATION IN PATIENTS WITH RHEUMATIC VALVULAR DISEASE**

Kazaz H., Ustunsoy H., Celkan M.A., Daglar B., Kayiran C., Bayar E.

Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey

**OBJECTIVES:** The incidence of atrial fibrillation (AF) is 0.4% of general population and greater than 1% of the older than 60 year age. 40-60% of patients undergoing mitral valve operations have AF at the time of the operation. The purpose of the present study was to determine the success rate of the SIRFA (Saline irrigated radiofrequency ablation) for sinus rhythm restoration in patients with AF undergoing mitral valve replacement and the one year results.

**METHODS:** Between October 2001 and April 2004, 116 patients were enrolled in the prospective study. At the 1st-6th-12th months 12 lead ECG was done and 24 h holter ECG monitoring was done for any suspicious of arrhythmia anamnesis. Cardioblate™, Medtronic SIRFA catheter was used. The mean age was 41.6 ± 14.1 (min 17, max 68) and 86(74.1%) women, 20(25.9%) men patients. 8 patients paroxymal, 108(92%) patients chronic AF.

**RESULTS:** Operation and hospital mortality 0. None revision for bleeding. In 15(17.4%) patients epicardial pace maker were used during weaning period of CPB. Postoperative early AF 18(15.5%). End of the 1st and 6th months 17(14.6%), End of the 1st year 20(17.3%) patients had an AF rhythm.(10 paroxymal or persistent, 10 chronic [permanent])

**CONCLUSIONS:** Beyond the success rate of SIRFA (69-85%), it becomes to be a widespread procedure for the AF at the rheumatic valvular heart disease surgery. **REF141**

**D124-THE PREDICTORS OF THE SALINE IRRIGATED RADIOFREQUENCY ABLATION TREATMENT SUCCESS RATES FOR THE ATRIAL FIBRILLATION**

Kazaz H., Celkan M.A., Ustunsoy H., Daglar B., Kork I.

Department of Cardiovascular Surgery, Gaziantep University School of Medicine, Gaziantep, Turkey

**OBJECTIVES:** The purpose of our study is to find out the risk factors influencing the success rate of SIRFA at the end of one-year period.

**METHODS:** Between October 2001 and December 2003, 80 patients with AF selected for rheumatic mitral valve surgery have undergone SIRFA with an available unipolar probe. Each patient had a 12-lead electrocardiogram (ECG) for routine control at the end of one year.

**RESULTS:** While the incidence of early postoperative AF was found to be 18.75% (15), this ratio was 13.75% (11) at the first month and 15% (12) at the sixth month after surgery, and 15% (12) at the end of one year. The univariate analyses have revealed that, patients older than 60 years old, the presence of chronic AF, patients with AF for more than 6 months, left atrium diameter >60 mm, left atrium diameter >60 mm after left atrium diameter reducing procedure, postoperative antiarrhythmic treatment requirement and patients undergoing temporary epicardial pacemaker implantation at the end of surgery are significant risk factors. Multivariate analyses have revealed that, patients older than 60 years old, patients with left atrium diameter >60 mm, with left atrium diameter >60 mm after left atrium diameter reducing procedure, and with postoperative antiarrhythmic treatment requirement are under significant risk.

**CONCLUSIONS:** In our study, left atrium diameter greater than 60 mm before or after surgery, age older than 60 years, and antiarrhythmic drug requirement in the postoperative period have been established as the main predicting factors unfavorably influencing the success of SIRFA. **REF130**

**D125-COMPARISON OF ANTEGRADE VERSUS RETROGRADE  
CARDIOPLEGIA IN THE PREVENTION OF POSTOPERATIVE ATRIAL  
FIBRILLATION**

Kaya E., Uyar I., Arslan Y., Cucu O., Uyar G., Basaran M., Us M.H.,  
Ogus T., Isik O.

*Cardiovascular Surgery Department, Medicana Hospital, Istanbul, Turkey*

**OBJECTIVES:** This study was designed to assess the effects of retrograde versus antegrade cardioplegia on the prevention of new-onset atrial fibrillation.

**METHODS:** In the study, 262 patients undergoing coronary artery surgery were randomized to antegrade (134 patients) or retrograde (128 patients) administration of blood cardioplegia. Groups were comparable for age, sex, comorbid conditions, number of diseased vessel and ventricular dysfunction.

**RESULTS:** The cardiopulmonary and cross-clamp times did not differ significantly. Total amount of antegrade and retrograde cardioplegia solution infused averaged  $1,250 \pm 400$  mL and  $1,320 \pm 300$  mL ( $p$ =not significant), respectively. The incidence of new onset atrial fibrillation was 20.1% (27 patients) in the antegrade group and 25% (32 patients) in the retrograde group ( $p=0,15$ ). Multivariate analysis identified age, length of mechanical ventilation and chronic obstructive pulmonary disease as statistically significant predictors for postoperative atrial fibrillation.

**CONCLUSIONS:** Atrial fibrillation is the most frequently encountered arrhythmic complication associated with coronary artery bypass grafting. Our study shows no significant advantage of the retrograde administration of cardioplegia over the antegrade route in the prevention of postoperative fibrillation. **REF103**

**D126 - 5 YEAR EXPERIENCE WITH THE SURGICAL  
RADIOFREQUENCY ABLATION OF CHRONIC ATRIAL FIBRILLATION**

Yilmaz O., Demirsoy E., Arpaz M., Tandogan A., Yagan N.E., Arbatli H.,  
Tansal S., Sonmez B.

*Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey*

**OBJECTIVES:** The Cox-Maze III procedure is known to be the most effective method in the surgical treatment of chronic atrial fibrillation (AF). On the other hand, because of the complexity of the procedure, risk of hemorrhage, time consumption and the necessity of serious education and experience this method cannot be utilized widely. An alternative is the intra-operative radiofrequency ablation which is easier to learn and apply, takes less time, has a lower morbidity, and thus has gained a wider acceptance.

**METHODS:** Between December 2000 and May 2005 we have been performing intraoperative radiofrequency ablation to 96 patients having chronic AF with a concomitant cardiac pathology. The mean age was  $54.56 \pm 11.30$  years in the 35 male and 61 female patients. The AF was persistent in 80 (83.3%) and paroxysmal in the other 16 (16.7%) patients. The procedure was endocardial unipolar in 82 (85.4%), epicardial unipolar in 4 (4.2%), and bipolar in 10 (10.4%) patients.

**RESULTS:** Seventy-five (78.1%) of the patients were discharged in sinus rhythm. There was no early mortality related to the procedure. One patient (1%) who was discharged in good health was rehospitalised on the 22nd and then lost on the 42nd postoperative day due to formation of an atrio-esophageal fistula. In three (3.1%) patients permanent pacemaker implantation was necessary. There was a total of three (3.1%) other procedure-not-related mortalities, one being in the early postoperative period.

**CONCLUSIONS:** Intraoperative radiofrequency ablation is a safe and effective method in the treatment of AF, is easy to learn and apply and the results are satisfactory in the early and late period. **REF33**

**D127 - IRRIGATED RADIOFREQUENCY ABLATION FOR THE  
SURGICAL TREATMENT OF ATRIAL FIBRILLATION.EVALUATION  
OF MID-TERM RESULTS WITH DIFFERENT TECHNIQUES.**

Sanisoglu I.<sup>1</sup>, Sagbas E.<sup>1</sup>, Caynak B.<sup>1</sup>, Bayramoglu Z.<sup>1</sup>, Guden M.<sup>1</sup>,  
Akpinar B.<sup>1</sup>, Turkoglu C.<sup>2</sup>

<sup>1</sup>*Department of Cardiac Surgery, Florence Nightingale Hospital, Istanbul, Turkey*

<sup>2</sup>*Department of Cardiology, Florence Nightingale Hospital, Istanbul, Turkey*

**OBJECTIVES:** To evaluate the mid-term results of surgical ablation using radiofrequency(RF)energy.

**METHODS:** During a five years period 225 patients underwent concomitant RF ablation during cardiac surgery. Mean age was  $54 \pm 13$  years. 66% of patients were female and 34% were male. The series consisted of 169 mitral valve, 32 CABG, 18 aortic valve and 6 ASD cases. A unipolar irrigated pen was used in 193 cases and a bipolar pen was used in 32. The patients were followed for rhythm status during a 48 months time frame.

**RESULTS:** Operative mortality was 1.8%. Freedom from AF was 81%, 76%, 73% and 70% at 12, 24, 36 and 48 months follow up. No significant difference was detected in rhythm between patients undergoing a biatrial or only left atrial ablation at 12 months. 88% of patients undergoing a minimally invasive ablation procedure were free of AF at the end of one year. 12 months freedom from AF at the end of one year was 79% where a bipolar pen was used. 14 of these patients underwent an off-pump CABG and ablation procedure. Three cases needed permanent pacemaker implantation in the series.

**CONCLUSIONS:** Irrigated RF ablation was safe and effective with favourable mid term results. Off-pump and minimally invasive applications are promising, but longer term results have to be seen. **REF11**

**D128-MITRAL VALVE SURGERY THROUGH RIGHT  
MINITHORACOTOMY: SEVEN YEARS SURGICAL EXPERIENCE**

Risteski P., Aybek T., Dogan S., Detho F., Wimmer-Greinecker G.,  
Moritz A.

*Department of Thoracic and Cardiovascular Surgery, Johann Wolfgang Goethe University, Frankfurt/M, Germany*

**BACKGROUND:** We report of our 7 years experience with the minimally invasive mitral valve operation (MIMVO) through right minithoracotomy, reviewing mid-term morbidity and mortality as well as echocardiographic results.

**METHODS:** 277 patients (142 males) with mean age of  $56 \pm 14$  years (range 10-81) underwent MIMVO using the transthoracic clamp technique. Reconstructions were done in 214 patients, and 63 valves were replaced. Complex mitral valve procedures were performed in 194 cases. Mean length of incision was  $7.0 \pm 1.2$  cm. Mean New York Heart Association functional class was  $2.9 \pm 0.9$ .

**RESULTS:** Thirty day mortality was 2.8% (n=8). Seven (2.5%) had conversion to sternotomy, for repair of a dissected aorta (n=1), inability to proceed to a safe femoral cannulation (n=1), reexploration for bleeding (n=3), bypass for left circumflex artery occlusion (n=1) and persistent left superior vena cava. Mean operating time was  $245 \pm 58$ , mean bypass time was  $143 \pm 44$ , and mean crossclamp time was  $85 \pm 30$  minutes. Nine patients (3.2%) underwent reexploration for bleeding. Mean intensive care unit and hospital stay were 18 hours and 8.1 days, respectively. Mean follow-up was  $32 \pm 20$  months (range 3-76). Echocardiographic follow-up documented competent valve function in all but 5 patients who had moderate residual regurgitation. Four of them underwent mitral valve reconstruction and one had heart transplantation. All thoracic wounds were free from infection.

**CONCLUSIONS:** This study demonstrates that MIMVO is reproducible with low mortality and morbidity. Results are comparable to mid-term outcomes of conventional operations. It results in excellent cosmesis and abolished risk of thoracic wound infection. Encouraged by our mid-term results, we have moved to accepting this approach as a standard operative procedure for low risk patients in our clinic. **REF138**

**D129- DISTAL ANASTOMOSING DEVICES IN CORONARY ARTERY BYPASS SURGERY AND ROBOTIC SURGERY**

Sasmazel A.

*Cardiovascular Surgery Department Anadolu Foundation Health Care System, Izmit, Turkey*

**BACKGROUND:** Nowadays, two distal anastomosing devices are being used in clinics ; combined with robotic systems or not.

**METHODS AND DESCRIPTION:** These are U-clip and the Ventrica system.

U-clip which is made by nitinol. This device, developed by Coalescent Surgical (Sunnyvale, CA), U-CLIP applied to the anastomosis one by one. U-clips had range of needles and clips therefore it can be used for proximal and distal anastomosis. The anastomosis to the coronary artery constructed by vein or arterial grafts by the way of interrupted sutures. It has advantages over the continuous suture is that once the anastomosis performed; it cannot become a 'purse-string' shape. Another device is magnetic vascular positioner (MVP) Series 6000 System (Ventrica, Fremont, CA) is developed by the Ventrica Ins. This system consists of 3 magnetic implants. An intraluminally positioned central ring and two lateral pontoons placed outside of the vessel wall. The intraluminally placed central ring captures endothelium inside of the vessel wall and the lateral pontoons squeezes vessel wall. The same maneuver is repeated on the coronary arteries and the graft. After the insertion, the graft and the target vessel were checked for correct positioning. The graft is approximated to the target coronary arteries. The anastomosis performed by the magnet forces that is attracting the graft and target part.

**CONCLUSIONS:** Development of new devices and integration of the new and present distal anastomosing devices into the conventional CAGB and robotic technologies may enable us to perform coronary anastomosis in a reliable and proper way.

REF122

**D130-FEASIBLE APPLICATION OF MINIMALLY INVASIVE SURGICAL TECHNIQUES FOR CARDIAC PROCEDURES IN PRIVATE HOSPITALS**

Metin K., Celik M., Konakci S., Oto S.

*Ege Saglik Hospital, Izmir ,Turkey*

**OBJECTIVES:** Minimally invasive cardiac surgery is a commonly used method today. Its superiority depends on the advantages both for the patient and the surgeon. Most of the cardiac procedures could be performed through minimally invasive skin incisions with excellent results.

**METHODS:** We use minimally invasive surgery with a variety of mini sternotomy incisions for noncomplex congenital cardiac anomalies and valve replacements in our clinic. A modified aortic cannula is an important part of our technique which allows very limited incisions without disturbing the pump flow. Our patients (67 cases) were between 1 and 42 years of age. Most of them were ASD cases (32) and mitral valve replacements (19).

**RESULTS:** Postoperative recovery, extubation (on the operating table) and ICU staying times of patients operated with this technique are better in comparison with standard surgery. Our retrospective analysis showed that total hospital length of stay is also significantly shorter in those cases, which offers important financial advantages in private hospitals. We did not observed any postoperative complications and mortality. All patients were discharged from the hospital with satisfaction.

**CONCLUSIONS:** Minimally invasive cardiac surgery is a safe method for many types of cardiac procedures. It has medical, cosmetic and financial advantages and can be feasibly used in private hospital conditions.

REF169

**D131-OPEN HEART SURGERY VIA A RIGHT THORACOTOMY**

Unlu Y., Ceviz M., Becit N., Erkut B., Kocak H.

*Department of Cardiovascular Surgery, Faculty of Medicine, Ataturk University, Erzurum, Turkey*

**OBJECTIVES:** To evaluate the limitation of the trauma to the chest and to reduce surgical access in open-heart surgery, and to achieve a pleasing cosmetic result.

**METHODS:** Eighteen patients who required open-heart surgery had right anterolateral thoracotomy with cardiopulmonary bypass. The femoral artery and aorta were cannulated for arterial return in 16 patients and 2 patients, respectively. The results of 18 patients were analyzed.

**RESULTS:** Five of the patients underwent mitral valve replacement + tricuspid annuloplasty, four underwent mitral valve replacement, three underwent open mitral commissurotomy, two underwent primary repair of the atrial septal defect, two underwent mitral valve replacement for dysfunctional mitral valve, one remove to endocardial pacing wire because of thrombosis of the endocardial pacing wire, and one underwent excision of the right atrial mass in the beating heart. Mean drainage was 200 mL (range 25-350 mL) for 24 hours after the operation. There was no revision for bleeding, and there was no operative mortality. Enlargement plasty of the femoral artery was necessary in three patients. Mean intensive care unit and hospital stay were 1.4 days (range 1-3 days) and 6.8 days (range 5-11 days), respectively.

**CONCLUSIONS:** The right anterolateral thoracotomy incision constitutes a valid alternative to sternotomy for open-heart surgery. The thoracotomy causes fewer traumas and results in a cosmetic appearance that is more acceptable to the patients.

REF69

**D132-TOTALLY ENDOSCOPIC ATRIAL SEPTAL REPAIR USING COMPUTER ENHANCED TELEMANIPULATION**

Dogan S., Aybek T., Moritz A., Wimmer-Greinecker G.

*Department of Thoracic and Cardiovascular Surgery, Johann Wolfgang Goethe University, Frankfurt/Main, Germany*

**OBJECTIVES:** Standard surgical closure of an ASD via sternotomy is a safe and effective procedure with low morbidity and mortality. Considering that ASDs frequently are operated on young female patients a minimally invasive procedure avoiding sternotomy is convincingly desirable, and led to the approach through a right anterolateral minithoracotomy. The recent clinical introduction of robotically assisted surgery further reduced skin incisions enabling totally endoscopic procedures through ports. This paper reports on a first series of ASD closures of which the first case was operated on August 24th 1999 in a totally endoscopic closed chest technique using a computer enhanced telemanipulation system.

**METHODS:** We performed totally endoscopic atrial septal repair (TEASR) using the da Vinci surgical system (Intuitive Surgical, Mountain View, CA) in 16 consecutive adult patients. Median age was 44.2 ± 10 years, preoperative NYHA functional class was 1.8 ± 0.1. Left ventricular ejection fraction was normal in all patients and mean pulmonary artery pressure amounted to 34 ± 7 mmHg. Shunt volume ranged from 24 to 70%. All patients displayed a fossa ovalis type of ASD, two of them multiperforated.

**RESULTS:** Neither intraoperative nor postoperative complications occurred. 2 patients had to be converted to mini-thoracotomy due to endoaortic balloon clamp failure. Length of operation was 241 ± 35 min, CPB time was 152 ± 25 min. Intraoperative TEE certified complete closure of the ASD in all patients. The totally endoscopic computer enhanced technique yielded excellent cosmetic results.

**CONCLUSIONS:** TEASR is a feasible and safe procedure with good clinical results and excellent cosmetic outcomes. It may be considered as perfect adjunct to interventional treatment options. Further studies with larger cohorts and randomized trials are necessary to document potential benefits. Evolution in robotic technology and refinement of procedural flow may shorten procedural time and decrease costs.

REF139

### D133-ROBOTICALLY ASSISTED CARDIAC SURGERY

Guden M., Sagbas E., Sanisoglu I., Bayramoglu Z., Caynak B., Akpinar B.

*Department of Cardiovascular Surgery, Florence Nightingale Hospital, Istanbul, Turkey*

**OBJECTIVES:** Robots are defined as sensor-based tools capable of performing precise accurate and versatile actions. Initially designed to spare humans from risky tasks, robots have progressed into revolutionary tools for surgeons in a variety of clinical applications. Tele-operated robots such as the da Vinci™ have allowed cardiac procedures to start benefiting from robotics as an enhancement to traditional minimally invasive surgery. The aim of this study was to share our experience with the da Vinci surgical system in our cardiac surgical department and to evaluate how it fitted in our routine surgical practice.

**METHODS:** During a 12 months period, 62 patients were operated with da Vinci system. There were 59 coronary artery bypass grafting patients and 3 atrial septal defect closures.

**RESULTS:** Two patients (3.2%) had to be converted to median sternotomy because of pleural adhesions. There were no procedure or device related complications.

**CONCLUSIONS:** Our experience suggests that robotics can be integrated into routine cardiac surgical practice. Systematic training, team dedication and proper patient selection are important factors that determine the success of a robotic surgery program.

REF 31

### D134- OUR FIRST EXPERIENCES IN ROBOTIC CORONARY ARTERY SURGERY WITH THE AESOP

Sonmez B., Yagan N.E., Yilmaz O., Tansal S., Demirsoy E., Arbatli H., Tandogan A., Arpaz M.

*Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey*

**OBJECTIVES:** Minimal invasive interventions are being more frequently utilized in cardiovascular as in all other branches of surgery. Today the endpoint is the use of robotically-enhanced endoscopic systems for over ten years.

**METHODS:** Between April and December 2004, 17 patients with single vessel disease of the LAD were scheduled for endoscopic CABG surgery in the Memorial Hospital, Istanbul. In only one patient another stenotic lesion in the circumflex coronary artery was planned to be treated with hybrid therapy of an additional PTCA procedure. The left internal mammary artery (LIMA) was harvested with the help of the Aesop (Voice-activated robotic arm), then the LIMA-LAD anastomosis was performed through a 4 cm left minithoracotomy on a beating heart.

**RESULTS:** In seven (41.1%) of the patients the procedure could be completed successfully. In five (27.4%) the endoscopic procedure was abandoned at the very beginning because of severe pleural adhesions. Two (11.7%) could not tolerate the single-lung ventilation. In two other patients (11.7%) although the LIMA was harvested endoscopically, the anastomosis could only be done with the conventional open technique to the intramyocardial LAD. In one (5.8%), the LIMA was injured at the distal end during harvest, and was short for anastomosis as a pedicled graft. One (5.8%) patient was revised for hemorrhage. In patients who had a successfully completed procedure the mean ICU stay was 16.14 ± 1.57 hours and the mean hospital stay was 4.42 ± 0.78 days. In this group there was no mortality or morbidity.

**CONCLUSIONS:** Although robotically-enhanced endoscopic cardiac procedures are increasing in number in the other countries, the high rate of smoking and the related high incidence of respiratory tract infections necessitate scrupulous choice of patients in our country.

REF34

## VASCULAR SURGERY II

### D135-A-V FISTULA FORMATION FOR HEMODIALYSIS IN CHRONIC RENAL FAILURE WITH A MODIFIED REGIONAL ANESTHESIA METHOD:THREE YEARS' EXPERIENCE

Cekirdekci A.<sup>1</sup>, Yetkin U.<sup>1</sup>, Ayva E.<sup>1</sup>, Sasirtan T.<sup>1</sup>, Eren N.<sup>1</sup>, Yuksel S.<sup>2</sup>, Demir S.<sup>2</sup>, Yetkin E.<sup>2</sup>

<sup>1</sup>Kocatepe University Medical Faculty Department of Cardiovascular Surgery, Afyon, Turkey

<sup>2</sup>Kocatepe University Medical Faculty Department of Internal Medicine, Afyon, Turkey

AIM Arteriovenous fistula operations at fore arm and hand region are helpful for hemodialysis and increase the quality of life in chronic renal failure patients. Local anesthesia as local infiltration or brachial plexus blocking are used for all procedures. In this study we aimed to present our experience about AVF procedures which were performed by musculocutaneous and medial antebrachial nerves blockage far from incision, in the last 3 years.

**MATERIAL AND METHOD:** Between May 2002 and May 2005, we performed AVF operation in 49 cases. Of them 22 were women (44%) and average age was 52.8 years (between 35 and 76 years). Musculocutaneous nerve was anesthetized with 5 ml prilocain which was injected to proximal part of coracobrachial muscle and then 10 ml prilocain was injected to 2/3 lower medial part of the arm and medial antecubital cutaneous nerve was anesthetized.

**RESULTS:** Effectivity of the injection began at 4.8±0.6 minutes for surgical procedures and average anesthesia duration was 67.6 minutes. Average operation period was 39±7 minutes. Additional 5 ml prilocain was infiltrated to incision region in 6 patients(12.2%) who expressed pain during operation. All cases had an optimal operation comfort. 6 redo cases expressed that, this technique is beter than the former techniques. There wasn't any early or late postoperative complications.

**CONCLUSION:** We recommend our method with rapid cutaneous and subcutaneous anesthesia and with minimal dose and maximal local anesthesia period to avoid from complications, as an alternative for AVF operations.

REF110

**D136-TREATMENT PROGRESS OF LOWER AND UPPER EXTREMITY DEEP VEIN THROMBOSES**

Erdinc I.

Cardiovascular Surgery Department, SSK Izmir Training Hospital, Izmir, Turkey

**OBJECTIVES:** Upper extremity deep vein thromboses (UEDVT) usually result from invasive vascular interventions. Lower extremity deep vein thromboses (LEDVT), on the other hand, occur due to immobilization, malignancies, Becker cysts, Behcet's disease, trauma, etc. This study aims to investigate the risk factors, diagnosis, and complications of DVT, in addition to the treatment strategies and prognoses of this pathology.

**METHODS:** 130 patients were treated for DVT between October 2001 and September 2003. 110 patients had LEDVT (70 female and 40 male patients), and 20 patients had UEDVT (11 female and 9 male patients). Diagnosis was established by Doppler US in all patients. The patients initially received LMWH standard heparin, followed by Warfarin therapy. The patients were followed up by Doppler US after 3, 6, and 12 months. 2 patients with UEDVT, and 35 patients with LEDVT were admitted to the hospital. For outpatients, LMWH and Warfarin were started from the first day. Inpatients also received standard heparin and Warfarin therapy. Extremity elevation was applied to both groups.

**RESULTS:** Among the UEDVT group, central venous catheter was determined as a risk factor in 12 patients, trauma in 2 patients, and systemic diseases in 6 patients (renal and malignancies). In the LEDVT group, on the other hand, immobilization was found in 50 patients, history of surgery in 20 patients, malignancies in 15 patients, post-pregnancy in 2 patients, varicose veins in 2 patients, and varicose veins in 5 patients. Among LEDVT patients, the thrombosis was bilateral in 15 patients, on the right side in 50 patients, and on the left extremity in 45 patients. All UEDVT cases were left-sided. The mean time until the onset of therapy was 5 days (1-9 days); 2 patients in the UEDVT group and 5 patients in the LEDVT group died to reasons not related to DVT. Pulmonary emboli developed in 3 patients from the LEDVT group. No mortality occurred due to DVT or the treatment given. Following a therapy of 6 months, improvement in the Doppler US readings as well as the subjective complaints occurred more rapidly in the UEDVT group.

**CONCLUSIONS:** No difference was observed in the improvement process between DVT in- and outpatients. It is possible to avoid DVT complications also in outpatients. Response to therapy and outcome in UEDVT is more rapidly compared to LEDVT. We found that improvement of subjective complaints occurs more rapidly in the UEDVT group. REF4

**D137-EXTRA-ANATOMIC BYPASSES FOR AORTOILIAC DISEASE IN HIGH-RISK PATIENTS**

Peker O., Yavuz T., Kiris I., Tekin I., Ocal A., Ibrism E.

Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey

**OBJECTIVES:** From September 1999 to May 2005, 16 patients were underwent extra-anatomic bypass for aortailiac disease. The surgical risk factors were assessed and the results were evaluated.

**METHODS:** The ages of the study population ranged from 38 to 76 years with a mean of 62.4 years. Fourteen patients were male and two patients were female. During the study period femorofemoral bypass was performed in 14 patients, axillofemoral and femorofemoral bypass was performed in 2 patients.

**RESULTS:** The surgical risk factors were chronic obstructive pulmonary disease in 7 patients, unstable coronary artery disease in 6 patients, advanced age in 1 patient, chronic renal failure in 1 patient, and porcelain abdominal aorta in 1 patient. For the clinical assessment of claudication Fontaine classification was used. Four patients were in stage IIa, ten patients were in stage IIb, one patient was in stage III, and one patient was stage IV. We observed superficial wound infection in 3 patients and suprapubic hematoma in 2 patients. One patient had graft thrombosis and underwent to amputation below knee level. Mortality was seen in one patient due to cerebrovascular accident during postoperative 8th month. Average follow up period was 14 months. We observed clinically significant increase in ankle brachial index values.

**CONCLUSIONS:** Extra-anatomic bypass can be a good alternative surgical procedure in patients with high risk factors. High limb salvage rate and a durable long-term patency in extra-anatomic bypasses gives us promising results. REF87

**D138-THE RESULTS OF REFLEXOTHERAPY IN PATIENTS WITH VENOUS INSUFFICIENCY: A PRELIMINARY REPORT**

Demirturk F.<sup>1</sup>, Karakaya I.C.<sup>1</sup>, Ucar H.L.<sup>2</sup>, Oc M.<sup>2</sup>, Karabay C.<sup>2</sup>, Akbulut B.<sup>2</sup>, Furat C.<sup>2</sup>, Onuk B.E.<sup>2</sup>, Akbayrak T.<sup>1</sup>, Guvener M.<sup>2</sup>, Demircin M.<sup>2</sup>, Boke E.<sup>2</sup>

<sup>1</sup>School of Physical Therapy and Rehabilitation, Hacettepe University, Ankara, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey

**OBJECTIVES:** This study presents preliminary results of reflexotherapy technique on edema, pain and activities of daily living in patients having venous insufficiency in the lower extremities.

**METHODS:** Ten cases having edema and pain in their lower extremities due to venous insufficiency were included in this study. The cases were the ones who did not achieve any physical therapy within the last six months. Information about physical properties (age, body weight and height) and duration of the complaints were recorded. Leg circumference measurements were made in order to estimate the limb volumes by conical frustum model. Pain intensity and impact of the problem on activities of daily living (ADL) were assessed by 100 mm length visual analogue scales. The reflexotherapy was applied by using the Skintonic device to the whole extremity at the affected side. The treatment program lasted for a total of 12 sessions, three sessions a week. The duration of each session was 45 minutes. Assessments were performed before and after the treatment program. Wilcoxon signed rank test was used to analyze the differences of pre and post treatment values. Level of significance was set at p<0.05.

**RESULTS:** Mean duration of the complaints due to venous insufficiency was 4.17±2.14 years. Body weight and body mass index values remained unchanged throughout the study (p>0.05). Pain intensity and limb volume decreased after application of reflexotherapy technique (p<0.05). Also the impact of the problem on (ADL) improved significantly (p<0.05).

**CONCLUSIONS:** The results of this preliminary report indicate that the application of reflexotherapy by the Skintonic device led to improvement in pain intensity, edema and activities of daily living in cases with venous insufficiency in the lower limbs. The massage and lymphatic drainage effect maintained by this technique are thought to be responsible for the results. These findings need to be supported by further controlled studies, investigating also the follow-up results in a larger population. REF149

**D139-RELATION OF ACTIVE UVEITIS WITH LOWER EXTREMITY ARTERIAL LESIONS OF BEHCET DISEASE**

Yetkin U.<sup>1</sup>, Yavas F.G.<sup>2</sup>, Acar M.<sup>3</sup>, Ozturk F.<sup>2</sup>, Kusbeci T.<sup>2</sup>, Ayva E.<sup>1</sup>, Yetkin E.<sup>4</sup>, Sasirtan T.<sup>1</sup>, Eren N.<sup>1</sup>, Cekirdekci A.<sup>1</sup>

<sup>1</sup>Kocatepe University Medical Faculty, Department of Cardiovascular Surgery, Afyon, Turkey

<sup>2</sup>Kocatepe University Medical Faculty, Department of Ophthalmology, Afyon, Turkey

<sup>3</sup>Kocatepe University Medical Faculty, Department of Radiology, Afyon, Turkey

<sup>4</sup>Kocatepe University Medical Faculty, Department of Internal Medicine, Afyon, Turkey

AIM Arterial involvement is less frequent (12%) than venous involvement (88%) in Behcet disease. It can affect all arters irrespective of diameter. Eye symptoms are recurrent uveitis attacks of anterior and/or posterior segments and retinal vasculitis.

**MATERIAL AND METHOD:** We studied with 18 patients, between May 2004 and May 2005. Routine and periodical controls of them for uveitis were performed at Ophthalmology outpatient clinic. Of them 8 were women (44.4%) and average age was 34.2 years (between 18 and 61 years). To investigate the lower extremity arterial involvement, we used colored doppler ultrasonography (CDUS) in all patients.

**RESULTS:** CDUS showed lower extremity arterial involvement in two patients (11.1%). Male patient had 50 to 80% stenosis at right femoral superficial artery and occlusion at its middle part and showed collateral filling at distal main arteries. Same patient showed 50 to 80% stenosis at left tibialis anterior artery and in addition 20 to 50% stenosis at left femoral superficial artery. He said that walking 100 to 200 meters induced claudication at left lower extremity. We didn't find an active uveitis. Female patient had 60 to 95% stenosis at right external iliac artery and at common femoral artery, which was shown with CDUS. She was a Behcet patient for 20 years and ocular examination showed phthysis bulbi secondary to bilateral uveitis. She didn't have anamnestic symptoms relating with vasculary system. Bilateral lower extremity venous CDUS results were normal in both patients.

**CONCLUSION:** Arterial involvement is rare in Behcet disease. Frequently pseudoaneurysm and occasionally, as in our patients, arterial occlusion can be seen. We suggest a careful clinical examination at first and if suspicion arises, CDUS for lower extremity arteries. We think that revascularization procedures for lesions can increase the quality of life and prevent the progression of vasculary pathological events. REF111

**D140-RELATION BETWEEN ACTIVE UVEITIS AND LOWER EXTREMITY VENOUS INVOLVEMENT IN BEHCET DISEASE**

Yavas F.G.<sup>1</sup>, Yetkin U.<sup>2</sup>, Acar M.<sup>3</sup>, Ozturk F.<sup>1</sup>, Kusbeci T.<sup>1</sup>, Ayva E.<sup>2</sup>, Yetkin E.<sup>4</sup>, Sasirtan T.<sup>2</sup>, Eren N.<sup>2</sup>, Cekirdekci A.<sup>2</sup>

<sup>1</sup>Kocatepe University Medical Faculty, Department of Ophthalmology, Afyon, Turkey

<sup>2</sup>Kocatepe University Medical Faculty, Department of Cardiovascular Surgery, Afyon, Turkey

<sup>3</sup>Kocatepe University Medical Faculty, Department of Radiology, Afyon, Turkey

<sup>4</sup>Kocatepe University Medical Faculty, Department of Internal Medicine, Afyon, Turkey

AIM Behcet disease is a chronic, multisystemic and autoimmune disease which is characterized with oral-genital ulcers and uveitis. Vascular involvement rate is between 7.7 and 38% and venous involvement is more frequent. Peripheral or deep vein thrombosis is found in 6 to 25% of the patients. Venous thrombosis prefers lower extremity veins.

**MATERIAL AND METHOD:** Totally 18 patients, whose routine and periodical uveitis control were made at Ophthalmology outpatient clinic between May 2004 and May 2005, were included. 8 of them were women (44.4%) and average age was 34.2 years (between 18 and 61 years). For the detection of lower extremity venous involvement, CDUS was used in all patients. Ocular examination showed that 4 patients still had active uveitis.

**RESULTS:** Three patients had lower extremity venous involvement inspite of asymptomatic doppler and no venous pathology history. Two were men; one with superficial and deep venous insufficiency at right leg and the other with chronic thrombophlebitis at left femoral vein. The last one was a woman and CDUS showed a chronic thrombophlebitis at right leg veins and subacute thrombus at left leg veins. CDUS examination was resulted normal in all 3 patients for bilateral leg arterial system. There wasn't active uveitis signs at ocular examination.

**CONCLUSION:** Lower extremity thrombophlebitis is the best known vascular complication of Behcet disease with a rate of 24% and so, we recommend a careful clinical examination and lower extremity venous CDUS when necessary for routine controls. Antithrombotic agents must be used for acute thrombophlebitis treatment. **REF112**

**D141-INTRAABDOMINAL OCCULT CANCERS AND LOWER EXTREMITY THROMBOEMBOLISM**

Yetkin U.<sup>1</sup>, Ayva E.<sup>1</sup>, Yetkin E.<sup>2</sup>, Sasirtan T.<sup>1</sup>, Eren N.<sup>1</sup>, Cekirdekci A.<sup>1</sup>

<sup>1</sup>Kocatepe University Medical Faculty, Department of Cardiovascular Surgery, Afyon, Turkey

<sup>2</sup>Kocatepe University Medical Faculty, Department of Internal Medicine, Afyon, Turkey

AIM Bleeding-clotting problems are the second common cause of hospital deaths in cancer patients. Pelvic and lower extremity deep venous thromboembolic events can be the first clinical sign in intraabdominal neoplastic syndromes before the diagnosis of primary cancer.

**MATERIAL AND METHOD:** Between May 2004 and May 2005, totally 18 patients were hospitalized because of lower extremity venous thromboembolism. All diagnoses were confirmed with CDUS. During admission to hospital, it wasn't known that primary etiological factor was a malign disease. All patients went under laboratory tests, chest X-rays, abdomino-pelvic USG and when indicated tumor markers were determined.

**RESULTS:** In 2 of our cases (11.1 %) occult intraabdominal neoplasies were determined. One of them was a 60 years old man and was one of the four recurrent thrombophlebitis cases. Recurrence was seen 3 weeks a part. Abdominal USG and CT showed a pancreas Ca at the head of the gland and liver metastasis. Other case was a 81 years old woman and complained from venous thromboembolism for the first time. Her Ca125 level was high and at left over region, pelvic USG showed a 45x40 mm solid mass. Both patients were treated with optimal dose of low molecular weight heparin. Long-term controls were made at our General Surgery and Gynecology clinics.

**CONCLUSION:** We recommend a careful clinical examination and basic investigations in lower extremity venous thrombosis cases, before expensive diagnostic tests. If there is an occult malignancy suspicion, then detailed and expensive tests are indicated. **REF113**

**D142 SHUNT DECISION WITH REGIONAL CERVICAL BLOCK IN CONTRALATERAL CAROTID ARTERY STENOSIS**

Erdinc I.

Cardiovascular Surgery Department, SSK Izmir Training Hospital, Izmir, Turkey

**OBJECTIVES:** The surgical outcome in patients with contralateral total occlusion may vary greatly. The surgical success is usually reduced in this patient group. Some clinics routinely apply shunts to this type of patients. This study aims to facilitate the decision for shunt requirement during carotid endarterectomy (CEA) with regional cervical block (RCB), and to demonstrate that shunt-related complications are evaded.

**METHODS:** A total of 50 patients (36 male and 16 female patients) underwent CEA between October 2001 and may 2005 in our clinics. The contralateral carotid arteries were normal in 20 patients, less than 45% stenotic in 10 patients, 65-75% stenotic in 10 patients, and totally occluded in 10 patients. The decision for surgery in these patients was rendered by MRI-angiography, or digital subtraction angiography (DSA). 11 patients were asymptomatic while 9 patients were symptomatic. All patients with contralateral total occlusion were symptomatic. All CEA were performed using LRB with systemic heparinization, ECG, and invasive blood pressure monitoring. The arteriotomy was routinely closed primarily with 6/0 polypropylene. Hemovac drains were placed in all patients, postoperatively. During the surgery, the anaesthesiologist asked certain questions and started conversations in order to check the motor and consciousness states of the patients during arterial clamping.

**RESULTS:** Shunt wasn't used in any patients, including the contralateral total occluded patient group. No perioperative neurological deficit developed in any patient. No postoperative mortality was observed. Temporary haematoma developed in one patient, and temporary facial paresis was observed in three patients. Confusion developed in one patient 12 hours postoperatively, but using medical therapy, no irreversible sequels developed in this patient. 14 patients received CABG, postoperatively. The mean arterial clamping time was 12 to 23 minutes (average: 14 minutes).

**CONCLUSIONS:** The decision for carotid shunt during CEA is easier in conscious patients under RCB. RCB can be safely applied in all patients with isolated carotid artery stenosis. Thus, the complications of general anaesthesia may be avoided. **REF5**

**D143-DOES REIMPLANTATION OF INFERIOR MESENTERIC ARTERY HAVE A ROLE IN PREVENTING COLONIC ISCHEMIA DEVELOPING AFTER SURGERY OF ABDOMINAL AORTIC ANEURYSM ?**

Us M.H.<sup>1</sup>, Ozen Y.<sup>1</sup>, Ucak A.<sup>1</sup>, Ozbek C.<sup>2</sup>, Basaran M.<sup>1</sup>, Ogus T.<sup>2</sup>, Yilmaz A.T.<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Surgery, GATA Haydarpaşa Training Hospital, Istanbul, Turkey

<sup>2</sup>Cardiovascular Surgery Service, Medicana Hospital, Istanbul, Turkey

**OBJECTIVES:** Ischemia of sigmoid colon following surgery of abdominal aortic aneurysm (AAA) is a rare and a devastating complication. Either ligation or embolisation of inferior mesenteric artery (IMA) or internal iliac artery can be accounted for this. However abundance of collateral flow to the sigmoid colon usually prevents ischemia.

**METHODS:** 54 patients that had surgery of infrarenal abdominal aneurysm in GATA and Medicana Hospital between years 1991-2005 were followed postoperatively. Group I consists of 21 patients operated and having not IMA reimplantation between 1991 and 1999. Group II consists of 34 patients operated and reimplanted IMA between 1999 and 2005. All cases were approached transperitoneally using laparotomy. The patients having emergency surgery because of ruptured abdominal aortic aneurysm was excluded.

**RESULTS:** Early mortality was seen in group I as one death due to peritonitis developed following bowel perforation at 18th hours. Early mortality was not seen in group II. Late mortality was only a death due to myocardial infarction at 18th month in group II. As a result of comparison, significant improvement in bowel sounds, bowel motility, hospitalization duration and also time to mobilization in group II. However this differences wasn't statistically significant

**CONCLUSIONS:** Sigmoid colon ischemia is seen as %1 following elective AAA surgery. Whereas the ligation of chronically occluded IMA faraway from aneurysm can result in obliteration of collaterals of superior mesenteric arteries, the abundance of collateral flow to the sigmoid colon usually prevents ischemia. In the conclusion we recommend the reimplantation of IMA to prevent ischemia of colon. **REF127**

#### D144-CERVICAL BLOCK VERSUS GENERAL ANESTHESIA IN CAROTID-SUBCLAVIAN BYPASS SURGERY

Karaca P.<sup>1</sup>, Enc Y.<sup>2</sup>, Cinar B.<sup>2</sup>, Ketenci B.<sup>2</sup>, Goksel O.<sup>2</sup>, Eren E.<sup>2</sup>, Aykac Z.<sup>3</sup>

<sup>1</sup>Department of Cardiovascular Anesthesia, Anadolu Health Center, Istanbul, Turkey

<sup>2</sup>Department of Cardiovascular Surgery, Dr Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey

<sup>3</sup>Department of Cardiovascular, Anesthesia, Dr Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey

**OBJECTIVES:** In addition to lower cost and higher patient satisfaction, regional anesthesia is preferred in some cases because of the intrinsic properties of the surgery itself. Carotid-subclavian bypass surgery is such a procedure, due to the risks of neural and/or myocardial injury. Therefore awake, responsive patients are desired, in order to be aware of any injury immediately and to change the strategy of the operation as required.

**METHODS:** In this retrospective study, the medical records of 66 patients undergoing carotid-subclavian bypass surgery for symptomatic occlusive subclavian artery disease between January 1990 and January 2003 were reviewed to compare combined superficial-deep block (Group I; n=41) and general anesthesia (Group II; n=25) with respect to short-term results. Fifty-four patients with subclavian steal syndrome and 12 patients with coronary steal syndrome underwent surgery.

**RESULTS:** There were no intraoperative mortalities. Only one perioperative cerebrovascular accident and one death due to myocardial ischemia were seen early in the postoperative period. Both patients had been given general anesthesia. There were six (9%) morbidities within this period, as follows: three reoperations due to bleeding, one brachial embolectomy due to embolization of the distal arterial system, and two reoperations due to early graft thrombosis. The length of hospital stay was shorter in patients receiving regional anesthesia as compared to general anesthesia group (2.68 ± 0.64 vs 3.4 ± 0.81 days) (p < 0.01). No patients in cervical block group required conversion to general anesthesia.

**CONCLUSIONS:** Combined superficial-deep cervical plexus block is practical and clinically superior alternative to general anesthesia for carotid-subclavian bypass surgery. **REF61**

#### D145-UNUSUAL SPONTANEOUS INTRAABDOMINAL HAEMORRHAGE FOLLOWING THE OPEN HEART SURGERY

Iriz E.<sup>1</sup>, Ereren E.<sup>1</sup>, Yuksel O.<sup>2</sup>, Kalaycioglu S.<sup>1</sup>

<sup>1</sup>Gazi University School of Medicine, Department of Cardiovascular Surgery, Ankara, Turkey

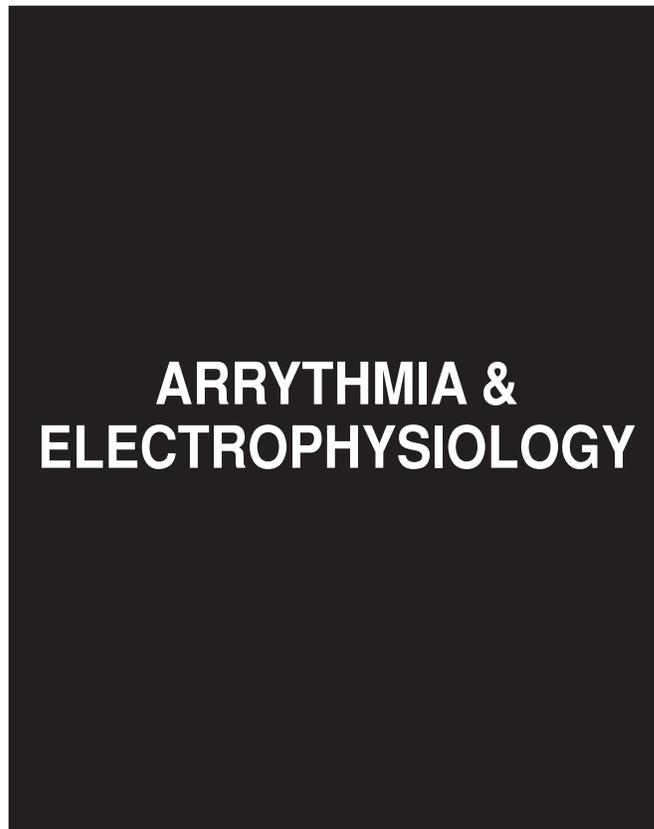
<sup>2</sup>Gazi University School of Medicine, Department of Surgery, Ankara, Turkey

**OBJECTIVES:** Gastrointestinal complications following open heart surgery are rare. Many preoperative, intraoperative and postoperative factors may lead to these complications. As postoperative gastrointestinal haemorrhagic complications, intraabdominal haemorrhage of both liver and spleen; even in large patient series; has not been observed.

**METHODS:** Our case, 64 years-old-female, underwent aortic valve replacement due to aortic stenosis. Spontaneous intraabdominal haemorrhage occurred on the 2nd postoperative day.

**RESULTS:** In laparotomy, it was determined that the haemorrhage was related to a vein near ligamentum falciforme hepatis and laceration of spleen capsule. The complication was surgically repaired.

**CONCLUSIONS:** According to our knowledge there is no report about intraabdominal spontaneous haemorrhage of both liver and spleen after an open heart surgery in the literature. **REF86**



#### D146 - PREVENTION OF POSSIBLE EMBOLUS FOLLOWING INTRA AORTIC BALLOON COUNTERPULSATION INSERTION BY TRANSESOPHAGEAL ECHOCARDIOGRAPHY

Imren Y., Tasoglu I.

Department of Cardiovascular Surgery, Gazi University, Ankara, Turkey

**OBJECTIVES:** Severe atherosclerosis of the descending aorta is directly related to atheroembolic events. Transesophageal echocardiography (TEE) is a sensitive technique for evaluating such atheroma plaques of the thoracic aorta which may predict the risk of emboli.

**CASE PRESENTATION:** A 78 year-old male patient without diabetes was admitted for elective coronary artery bypass. Three vessel by-pass grafting was performed. Since the weaning from cardiopulmonary by-pass despite inotropic support could not be possible, an IABP catheter was advanced via right femoral artery percutaneously. TEE was used to guide the position of the balloon catheter tip just distal to the left subclavian artery. We realised a marked irregular mass and disruption of the intimal surface of the thoracic aorta with overlying shaggy echogenic material on the intimal surface into the aortic lumen (Fig. 1). The balloon catheter was pulled back 3-4 cm from subclavian artery origin to a "healthy" area before operating IABP (Fig 2). The patient was weaned from cardiopulmonary-by-pass and admitted to intensive care unit without any difficulty.

**CONCLUSION:** The application of TEE in the perioperative period helps not only detect IABP complication early but also verify of balloon catheter position quickly. Severe atherosclerosis of the descending aorta was directly related to atheroembolic events and most strongly associated with peripheral vascular disease and advanced age. Patients with atherosclerotic debris in the descending aorta and arch detected using TEE are at particularly high risk of embolus during cardiac surgery, whereas patients with a lesser degree of atherosclerosis are at lower risks. We can recommend TEE in any case which IABP will be used. **Figure 1**



**Figure 2**

**REF7**

**D147 - OCULAR BLEEDING RELATED TO WARFARIN ANTICOAGULATION IN PATIENTS WITH MECHANICAL HEART VALVE AND ATRIAL FIBRILLATION**

Biyik I.<sup>1</sup>, Mercan I.<sup>2</sup>, Unal B.<sup>3</sup>, Ergene O.<sup>4</sup>, Oto O.<sup>5</sup>

<sup>1</sup>Department of Cardiology, Usak State Hospital, Usak, Turkey  
<sup>2</sup>Department of Ophthalmology, Usak State Hospital, Usak, Turkey  
<sup>3</sup>Department of Medical Statistics, 9 Eylul University Hospital, Izmir, Turkey  
<sup>4</sup>Department of 2. Cardiology, Ataturk Educational Hospital, Izmir, Turkey  
<sup>5</sup>Department of Cardiovascular Surgery, 9 Eylul University Hospital, Izmir, Turkey

**OBJECTIVES:** Warfarin is the most effective drug in the prevention of thromboembolic complications in patients having mechanical heart valves and atrial fibrillation. In this study, we aimed to investigate the incidence of ocular bleeding in patients taking warfarin and its association with other related factors.

**METHODS:** A total of 420 cases included in the study. 210 patient taking warfarin were examined to look for ocular bleeding including subconjunctival hemorrhage, gross hyphema, vitreous and retinal hemorrhages. 210 cases presenting our ophthalmology department with different complaints and not taking any anticoagulant or antithrombotic therapy were evaluated as sex and age matched controls. All cases were examined for ocular bleeding via external ocular examination and fundoscopic examination using direct and indirect ophthalmoscopy. Ocular bleeding incidence and its association with other factors were investigated.

**RESULTS:** The incidence of ocular bleeding is 11,4 % (24/210) and 3,8 % (8/210) in patients taking warfarin, and not taking any antithrombotic treatment, respectively (p=0,003). The frequency of ocular bleeding is five fold higher in patients with hypertension (p=0,001). Patients suffering from ocular bleeding is older than other patients (p=0,02). Results did not show any association between ocular bleeding and other factors such as gender, INR level, duration of warfarin therapy, surprisingly concomitant aspirin use and diabetes.

**CONCLUSIONS:** Although, all hemorrhages were visually insignificant. Warfarin therapy increases the frequency of ocular bleeding. Higher incidence of ocular bleeding in patients with hypertension and older age should be kept in mind and this subgroup of patients taking warfarin should be monitored closely.

REF20

**D148 - EFFECT OF OBESITY ON LEFT VENTRICULAR STRUCTURE AND MYOCARDIAL FUNCTION : ASSESSMENT BY TISSUE DOPPLER IMAGING AND STRAIN/STRAIN RATE IMAGING**

Tumuklu M.<sup>1</sup>, Saygi S.<sup>2</sup>, Ocal A.<sup>1</sup>, Ceyhan K.<sup>1</sup>, Cinar C.S.<sup>2</sup>

<sup>1</sup>Department of Cardiology, University of Gaziosmanpasa, Faculty of Medicine, Tokat, Turkey,  
<sup>2</sup>Department of Cardiology, Aegean University, Faculty of Medicine, Izmir, Turkey

**OBJECTIVES:** Obesity is associated with heart failure, cardiovascular morbidity and mortality. A direct effect of weight on Left Ventricle(LV) structure and myocardial function is not well-established. The aim of our study is to determine the effect of obesity by using LV standart Doppler echocardiographic indices, myocardial Doppler Imaging and Strain/strain rate Imaging indices.

**METHODS:** We studied 33 obese and 34 age,sex -adjusted control subjects with had no other pathological conditions. Standart Doppler echocardiographical measurements, reconstructed spectral pulsed wave tissue Doppler velocities, strain and strain rate imaging of six different myocardial regions were obtained .Peak systolic velocity(SR), peak systolic strain(ε), peak systolic strain rate(SR) for each region and as a global systolic longitudinal LV function, mean of peak systolic strain of six myocardial regions (glscs) were compared.

**RESULTS:** Age, body surface area, blood pressure and heart rate were comparable between 2 groups. Obese subjects had significantly increased LV end-diastolic volume,, septal wall thickness, left atrial diameter and decreased transmitral early to late diastolic velocity ratio . In obese subjects TDI analysis showed significantly decreased basal lateral peak systolic(Sm) velocity (6.68±1.89vs8.08±2.50,p<0.05), mid-lateral Sm(5.01±2.17vs6.78±3.22,p<0.05). Differences in regional SR(mid-septalSR- 1.45±0.23vs1.63±0.18,p<0.05), regionale(basal-septumε- 19.13±3.83vs22.09±4.60,p<0.05, mid-septumε- 18.03±2.91vs20.25±4.77,p<0.05, radial - 27.50±7.32vs35.53±9.48,p<0.05) and global strain(glscs - 19.38±1.34vs21.24±2.82,p<0.05) were identified between obese and the referent subjects.

**CONCLUSIONS:** Obesity is associated with morphological alterations in left ventricle and left atrium and subclinical changes in left ventricle systolic function which can be detected by TDI, Strain and strain rate imaging even without overt heart disease

REF56

**D149 - ALTERATIONS IN LEFT VENTRICULAR STRUCTURE AND DIASTOLIC FUNCTION IN PROFESSIONAL FOOTBALL PLAYERS: ASSESSMENT BY TISSUE DOPPLER IMAGING AND LEFT VENTRICULAR FLOW PROPAGATION VELOCITY**

Tumuklu M.<sup>1</sup>, Saygi S.<sup>2</sup>, Cinar C.S.<sup>2</sup>, Ceyhan K.<sup>1</sup>

<sup>1</sup>Department of Cardiology, University of Gaziosmanpasa, Faculty of Medicine, Tokat, Turkey,

<sup>2</sup>Department of Cardiology, Ege University, Faculty of Medicine, Izmir Turkey

**OBJECTIVES:** Long-term regular exercise is associated with physiologic/morphologic cardiac alterations. Tissue Doppler Imaging(TDI) and Ventricular early flow propagation velocity(Vp) are new tools in the evaluation of myocardial function. We sought to compare TDI/Vp findings in Professional football players and sedentary controls to assess the effect of regular athletic training on myocardial function.

**METHODS:** Twenty-four professional football players and age, sex and weight adjusted 20 control subjects underwent standard Doppler echocardiography pulsed TDI, performed apical four chamber views. Vp values were obtained by using apical four chamber color M-mode Doppler images.

**RESULTS:** Age, body surface area, blood pressure and heart rate were comparable between 2 groups. Football players had significantly increased LV mass, mass index(due to both higher wall thickness and end-diastolic diameter), end-systolic/end-diastolic volume, left atrial diameter and decreased transmitral diastolic late velocity . In athletes TDI analysis showed significantly increased mitral annulus septal DTI peak early diastolic(e) velocity(0.22±0.04vs0.19±0.04, p<0.05), lateral DTI peak e velocity(0.19±0.03vs0.16±0.02, p<0.05) and lateral e/a ratio (1.96±0.41vs1.66±0.23, p<0.05). The ratio of transmitral peak early diastolic velocity (E) to e in both lateral(4.72±1.20vs5.95±1.38, p=0.007) and septal (3.90±0.80vs5.25±1.50, p=0.002) side of mitral annulus were significantly lower in athletes. In Vp evaluation we found higher Vp values (60.52±6.95vs56.56±4.24, p=0.03) in football players.

**CONCLUSIONS:** Professional football playing is associated with morphological alterations in left ventricle and left atrium and improvement in left ventricle diastolic function which can be detected by TDI and Vp. These techniques may be new tools to define and quantitate the degree of LV diastolic adaptations to endurance exercise.

REF55

**D150 - DNA DAMAGE IN METABOLIC SYNDROME AND ITS CLOSE RELATIONSHIP WITH COMPONENTS OF THE METABOLIC SYNDROME**

Demirbag R.<sup>1</sup>, Yilmaz R.<sup>1</sup>, Gur M.<sup>1</sup>, Celik H.<sup>2</sup>, Guzel S.<sup>2</sup>, Selek S.<sup>2</sup>, Kocycigit A.<sup>2</sup>

<sup>1</sup>Harran University, Faculty of Medicine, Department of Cardiology, Sanliurfa, Turkey

<sup>2</sup>Harran University, Faculty of Medicine, Department of Clinical Biochemistry, Sanliurfa, Turkey

**OBJECTIVES:** There has been no report of DNA damage for individuals with the metabolic syndrome (MS). The purpose of this study was to asses DNA damage levels for subjects with MS.

**METHODS:** Sixty-five subjects with MS and 65 controls were enrolled in this study. DNA damage was assessed by alkaline comed. Plasma levels of total antioxidant capacity (TAC), total peroxide and oxidative stress index (OSI) were also measured.

**RESULTS:** We found that DNA damage levels are significantly increased and TAC levels significantly decreased in metabolic syndrome (p<0.001, respectively). A significant decreasing trend in TAC levels and a significant increasing trend in DNA damage values with the increase in the number of metabolic disturbances (ANOVA p<0,001 for both). Total peroxide and OSI levels were significantly higher in the subjects with MS than in controls (p<0.001, for both). We found a significant negative correlations between DNA damage and TAC levels in MS (r=-0.656, p<0.001). In multiple linear regression analysis, TAC, total peroxide and OSI were independent predictors of DNA damage.

**CONCLUSIONS:** The DNA damage is associated with number of metabolic syndrome components and increase in DNA damage levels may indicate increased the number of metabolic abnormalities in metabolic syndrome

REF8

**D151 - THE EFFICIENCY OF BETA-BLOCKER THERAPY IN PATIENTS WITH VASOVAGAL SYNCOPE**

Duygu H., Zoghi M., Turk U., Akyuz S., Kirilmaz B., Saygi S., Turkoglu A., Akilli A., Akin M.

Department of Cardiology, Ege University Medical Faculty, Izmir, Turkey

**OBJECTIVES:** We aimed in this study to compare treatment with a beta-blocker and conventional (non-pharmacological) treatment in the patients with positive head-up tilt test.

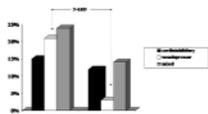
**METHODS:** 86 patients (pts, 44% males, mean age: 49±8 years) with positive head-up tilt were included in this study. The patients were divided to 2 groups based on the treatment they received. The pts in group I (n=53, 45% males, mean ages: 48±7 years) received only non-pharmacological treatment (advices on reducing the predisposing factors, daily "tilt training" exercises) and 33 pts in the group II (42% males, mean age: 50±8 years) received beta-blocker in addition to non-pharmacological treatment. The 82% of the pts in the group I received metoprolol whereas 18% of them received atenolol. The patients in both groups were followed for the frequency of their syncope attacks for averagely 8±2 weeks. Both treatment groups were also compared in sub-groups of vasovagal syncope.

**RESULTS:** The age and sex characteristics were not significantly different in two groups (p>0.05). The frequency of the syncope attacks prior to beginning of the treatment was similar between two groups (p=0.45). In regard to the results of head-up tilt test, 26 patients (30%) had cardioinhibitory syncope, 39 (45%) had vasodepressor syncope and 21 (25%) had syncope of mixed type. During the follow-up period, the rate of syncope was 28% (15 patients) in the group I and 21% (7 patients) in the group II (p=0.63). In the sub-groups analyzed we found that the treatment with beta-blocking agents was more effective in the pts with vasodepressor type syncope (p=0.04) (Figure).

**CONCLUSIONS:** Adding beta-blocker to non-pharmacological approaches in treatment of the patients with vasovagal syncope doesn't provide any additional benefit. Treatment with beta-blocker agents appear to be partially more effective in terms of frequency of the syncope attacks in vasodepressor type.

**Figure**

The comparing of syncope attack frequency before and after treatment in subgroups.



REF15

**D152 - THE COMPARISON OF THE PREOPERATIVE AND EARLY POSTOPERATIVE HEART RATE TURBULANCE VALUES OF THE CABG PATIENTS**

Yavuz S.<sup>1</sup>, Akbas H.<sup>1</sup>, Agacdiken A.<sup>2</sup>, Kanko M.<sup>1</sup>, Kilic T.<sup>2</sup>, Ozker E.<sup>1</sup>, Berki T.

<sup>1</sup>Department of Cardiovascular Surgery, Kocaeli University, Faculty Of Medicine, Kocaeli, Turkey

<sup>2</sup>Department of Cardiology, Kocaeli University, Faculty of Medicine, Kocaeli, Turkey

**OBJECTIVES:** To detect the patients with high risk and determine the early postoperative mortality of these patients who will undergo open heart surgery for coronary artery by pass grafting (CABG) by using HRT measurements

**METHODS:** 35 patients aged between 43 and 75 (mean age 63±8 years) were included in the study. Preoperatively 24 hours of Holter recording and echocardiographic examinations were done. 1 week after the operation 24 hours of Holter monitoring of the patients were recorded. One month after the operation, the patients were called back for routine examination, 24 hours of Holter recording and echocardiographic measurements. The turbulence onset (TO) and the turbulence slope (TS) which are the parameters of HRT were calculated. Values less than 0% for TO and values greater than 2.5 msn/RR for TS were accepted as normal.

**RESULTS:** The TO values in the first week postoperatively (0,002±0,02%) were seen to deteriorate where as an improvement in the first month values (-0,006±0,02%) was observed when compared to the preoperative values (-0,005±0,02%). On the other hand the TO parameters were found statistically insignificant and TS values in the first week postoperatively (2,3±3 msn/RR) were found to worsen when compared to the preoperative values (6,6±8,6). The first month TS values (4,4±4,3) were better than postoperative the first week values but were worse than the preoperative values. This difference in the results were statistically insignificant for the TO parameters but were significant for the TS parameters. The use of beta-blocking agents was seen to lessen the TS values. No significant correlation between the HRT parameters and the left ventricle ejection fraction and the perfusion time was detected. The relation between the cross clamp time and the postoperative first week TO values was statistically significant (r:0,383 p:0,031).

**CONCLUSIONS:** CABG blunts the HRT values in the early postoperative period. The deterioration of a noninvasive prognostic determinant, the HRT value, in the early postoperative period might be related to the increased risk of postoperative arrhythmic mortality after CABG or may be due to the damage of the baroreceptors caused by the cross clamp. The statistically significant relationship between the cross clamp time and the HRT results approve this observation. The examinations of the late term results may enhance the use of HRT in the prediction of the prognosis in CABG patients.

REF136

**D153 - ASSESSMENT OF AUTONOMIC NERVOUS SYSTEM FUNCTIONS BY HRV IN PATIENTS WITH IRON DEFICIENCY.**

Tuncer M.<sup>1</sup>, Eryonucu B.<sup>1</sup>, Guler N.<sup>1</sup>, Ekim H.<sup>2</sup>, Guntekin U.<sup>3</sup>, Demir C.<sup>4</sup>, Gunes A.<sup>3</sup>, Dilek I.<sup>4</sup>

<sup>1</sup>Yuzuncu Yil University, Department of Cardiology, Van Turkey,

<sup>2</sup>Yuzuncu Yil University, Department of Cardiovascular Surgery, Van Turkey,

<sup>3</sup>Urfa State Hospital, Urfa, Turkey,

<sup>4</sup>Yuzuncu Yil University, Department of Internal Medicine, Van Turkey

**OBJECTIVES:** Heart rate variability is a method that determines the effects of the autonomic nervous system on heart and the spontaneous changes at heart rate. Decrease in heart rate variability reflects on autonomic dysfunction. HRV decreases after MI, and in diabetic neuropathy and heart failure. Currently, HRV is considered to be a predictor of sudden cardiac arrest and arrhythmias. HRV was evaluated for determination of autonomic dysfunction in patients with anemia due to FE deficiency in this study.

**METHODS:** A total of 33 people, 23 patients with a mean 8.57±2.18 Hb values and 10 healthy people with 13.92±1.19 Hb value were utilized in this study. After 24 h holter monitoring, SDNN, RMSSD, Min-HRV (SD), SD-HRV, SDANN and TV, %10WP, and 50 %WP parameter at R-R interval histogram were examined for determination of HRV

**RESULTS:** Hb was significantly different between two groups. SDNN decreased from 128,32±43,75 to 136,51±37,14, RMSSD decreased from 53,29±49,49 to 47,35±17,31, MinHRVSD decreased from 61,05±35,64 to 61,92±15,96 SD-HRV decreased from 25,57±11,71 to 23,58±4,85, SDANN decreased from 111,56±40,19 to 120,88±36,47, WP50 decreased from 269,73±143,43 to 337,77±102,89, WP 10 decreased from 519,69±194,67 to 548,44±139,68 TV decreased from 795,86±259,51 to 821,22±212,80 These parameters were not statistically significant between two groups

**CONCLUSIONS:** HRV parameters determining autonomic dysfunction were not statistically significant between healthy people and patient with anemia.

REF93

**D154 - EFFECT OF LEVOSIMENDAN ON LEFT VENTRICULAR SYSTOLIC AND DIASTOLIC PARAMETERS IN PATIENTS WITH CHRONIC HEART FAILURE**

Kasikcioglu H.A.<sup>1</sup>, Unal S.<sup>1</sup>, Tartan Z.<sup>1</sup>, Uyarel H.<sup>1</sup>, Okmen E.<sup>1</sup>, Kasikcioglu E.<sup>2</sup>, Ozturk R.<sup>1</sup>, Cam N.<sup>1</sup>

<sup>1</sup>Department of Cardiology, Siyami Ersek Cardiovascular Surgery Center, Istanbul, Turkey,

<sup>2</sup>Istanbul Faculty of Medicine, Istanbul, Turkey

**OBJECTIVES:** Levosimendan is a calcium sensitizer and it shows enhanced contractility with no increase in oxygen demands and also significantly reduces the incidence of worsening clinical progress in patients with decompensated congestive heart failure. There is little information effect of Levosimendan on systolic, especially diastolic function. We prospectively evaluated the effects of 24 hours course of therapy with Levosimendan on left ventricular performance parameters in patients with chronic heart failure.

**METHODS:** Thirteen patients, who were admitted to our hospital for management of decompensated heart failure, were eligible for enrolment. They had New York Heart Association functional class III and had sinus rhythm. All patients underwent echocardiographic test. Measurements for study outcomes were made before of treatment (pre-treatment) and after 1 day (post-treatment). All patients were examined at rest in the left lateral decubitus position. Tissue Doppler parameters also measured and sample volume was placed at the junction of the LV wall with the mitral annulus of lateral myocardial segment from the four chamber view.

**RESULTS:** Although early and late velocities of mitral flow and myocardial segment in pretreatment and post-treatment phase was not any statistically significant systolic myocardial velocity of the mitral annulus (Sm) was enhanced after treatment (3.75 ± 0.60 vs. 4.72 ± 0.74, p=0.001).

**CONCLUSIONS:** Levosimendan might be expected to increase cardiac contractile force, especially Sm velocity, without significantly impairing ventricular relaxation. It is known that the Sm has been shown to be a good measurement of ventricular systolic function.

REF85

**D155 - EFFECT OF LEVOSIMENDAN ON P WAVE DISPERSION IN PATIENTS WITH HEART FAILURE**

Kasikcioglu H.A., Tartan Z., Uyarel H., Unal S., Okmen E., Akyol A., Ozturk R., Cam N.

Department of Cardiology, Siyami Ersek Cardiovascular Surgery Center, Istanbul, Turkey

**OBJECTIVES:** P-wave dispersion (PWD) is a new electrocardiographic marker that has been associated with inhomogeneous and discontinuous propagation of sinus impulses. Levosimendan is a calcium sensitiser that works via a dual mechanism of action that provides enhanced contractility in patients with heart failure. There is no information effect of levosimendan on PWD in patients who have highly cardiac arrhythmias. We evaluated the effects of levosimendan on PWD in patient with decompensated heart failure.

**METHODS:** Twenty patients, who were admitted to our hospital for management of decompensated heart failure, aged 48-70 years, were eligible for enrolment if they had New York Heart Association functional class III. Electrocardiographic examination was performed before and after administration of intravenous levosimendan (bolus dose 12 µg/kg for 10 min, followed by a continuous infusion of 0.1 µg/kg per minute for 24 hours) The P wave durations were measured in all 12 leads of ECG and PWD was defined as the difference between maximum and minimum P wave duration.

**RESULTS:** No significant differences were observed heart rate at baseline and after treatment. Although pre- and after treatment maximal and minimal P durations were statistically different, after treatment PWD and heart rate corrected-PWD were lower than pre-treatment PWD values (35.5±11.5 vs 23.3±7.2, p<0.05; 42.1±14.1 vs. 28.2±9.3, p<0.05; respectively).

**CONCLUSIONS:** As an acute treatment in patients with heart failure, levosimendan therapy seems to decrease on heterogeneity of propagation of atrial impulses. **REF84**

**D156 - EFFECT OF LEVOSIMENDAN ON VENTRICULAR REPOLARISATION IN PATIENTS WITH HEART FAILURE**

Kasikcioglu H.A., Tartan Z., Unal S., Uyarel H., Okmen E., Akyol A., Ozturk R., Cam N.

Department of Cardiology, Siyami Ersek Cardiovascular Surgery Center, Istanbul, Turkey

**OBJECTIVES:** QT dispersion has been proposed that different leads of the standard 12-lead ECG reflect different repolarization signals of different myocardial regions, and hence that increased dispersion is an indication of regional differences in the repolarization duration. Levosimendan is a calcium sensitiser with additional action on adenosine triphosphate-sensitive potassium channels. There is little information effect of levosimendan on QT interval. We sought to the effects of levosimendan on QT dispersion in patients with heart failure after levosimendan therapy.

**METHODS:** Twenty patients, who were admitted to our hospital for management of decompensated heart failure, aged 48-70 years, were eligible for enrolment if they had New York Heart Association functional class III. Electrocardiographic examination was performed before and after administration of intravenous levosimendan (bolus dose 12 µg/kg for 10 min, followed by a continuous infusion of 0.1 µg/kg per minute for 24 hours). QTd was defined as the difference between the maximal minus the minimum QT duration appearing in any of the 12 leads, and the value corrected for heart rate (QTc) was calculated.

**RESULTS:** Pre- and after treatment maximal and minimal QT durations were not statistically different. Although not statistically significant, after treatment QT dispersion and heart rate corrected-QT dispersion were lower than pre-treatment QT values (61.1±24.2 vs. 52.4±19.6, p=0.09; 72.2±28.5 vs. 63.3±24.9, p=0.11; respectively).

**CONCLUSIONS:** QT dispersion and heart-rate corrected QT dispersion were not changed at therapeutic doses. These results may explain how levosimendan is not increase ventricular arrhythmias **REF83**

**D157 - IS THERE A RELATIONSHIP BETWEEN QT DISPERSION AND RIGHT VENTRICULAR HYPERTROPHY CAUSED, BY HIGH ELEVATION?**

Tuncer M.<sup>1</sup>, Eryonucu B.<sup>1</sup>, Ekim H.<sup>2</sup>, Aslan S.<sup>1</sup>, Guler N.<sup>1</sup>, Gumrukçukoglu H.A.<sup>1</sup>

<sup>1</sup>Yuzuncu Yil University, Department of Cardiology, Van, Turkey

<sup>2</sup>Yuzuncu Yil University, Department of Cardiovascular Surgery, Van, Turkey

**OBJECTIVES:** Left ventricular hypertrophy is an important risk factor of cardiovascular complications during the course of hypertension. Increased QT dispersion is associated with sudden cardiac death in arrhythmia and in other cardiovascular diseases. Relationship between right ventricular hypertrophy (RVH) and QT is not known. The aim of this study was to determine the presence of a relationship between RVH that develops due to high elevation (3000 m) and QT dispersion.

**METHODS:** A total of 55 patients who live at high elevation were utilized. Echo- and electrocardiographies of patients were obtained. Patients with hypertension, left ventricular hypertrophy and valvular disease were excluded. ECG of patients were evaluated. Patients were divided into two groups based on presence of RVH according to Minnesota criteria. QTcmax, QTcmin ve QTc dispersions were calculated.

**RESULTS:** Parameters RVH (+)(n = 33) RVH (-)(n = 22) P QTcmax (m/sn) 0.59 ± 0.09 0.80 ± 0.15 < 0.0001 QTcmin (m/sn) 0.73 ± 0.13 0.78 ± 0.16 > 0.05 QTc dispersion 0.80 ± 0.16 1.02 ± 0.09 < 0.0001

**CONCLUSIONS:** QTcmax and QTc dispersions were significantly different between patients with RVH compared with patients without RVH according to Minnesota criteria. QTmin also decreased but not significant. **REF90**

**D158 - ALTERATIONS OF CARDIAC ELECTROPHYSIOLOGY DURING CARDIAC ANGIOGRAPHY: A STUDY WITH 12 DERIVATION ECG AND SIGNAL AVERAGED ECG**

Tumuklu M.<sup>1</sup>, Onalan O.<sup>1</sup>, Saygi S.<sup>2</sup>, Turkoglu A.<sup>2</sup>

<sup>1</sup>Department of Cardiology, University of Gaziosmanpasa, Faculty of Medicine, Tokat, Turkey.

<sup>2</sup>Department of Cardiology, University of Department of Cardiology, Ege University, Faculty of Medicine, Izmir Turkey

**OBJECTIVES:** Contrast media affect normal cardiac electrophysiology when injected into coronary arteries. The contrast media induced electrophysiological effects involve regional disturbances of depolarization and repolarization, thereby causing disturbance of impulse conduction as well as dispersion of refractoriness. We sought whether coronary artery diseases and left ventricle systolic function were associated with subclinical electrophysiological disturbances.

**METHODS:** The study population consisted of 128 subjects (82 male, 46 female, age 58.9±10.8 years) who underwent standard coronary angiography and left ventriculography with stable angina pectoris. The study population were grouped into group A (normal coronary angiogram), group B (>=70 stenosis at least one major epicardial coronary artery and LV ejection fraction >=50%), group C (>=70 stenosis at least one major epicardial coronary artery and LV ejection fraction <=50%). Pre and post-procedural early 12 derivation ECG and signal averaged ECG patterns were obtained. Early pre and post-procedural QT (ms), corrected QT (QTc, ms), QT dispersion (QTd, ms) and by using signal averaged ECG analysis; filtered QRS duration, root mean square of last 40 ms of total high frequency duration, duration of high frequency components <v in amplitude occurring terminal 40 portion of filtered QRS duration (QRSdur) were compared.

**RESULTS:** In group A; QTd (30.28±7.43 to 32.17±12.32, P=0,0001), QRSdur (100.6±27.6 to 114.73±26.48, P=0,04) in group B; QT (0.40±0.03 to 0.42±0.03, P=0,002), QTc (0.44±0.02 to 0.45±0.03, P=0,002), QTd (37.03±11.26 to 45.74±17.11, P=0,0001) in group C; QT (0.41±0.04 to 0.43±0.04, P=0,004), QTc (0.44 ±0.02 to 0.46±0.03, P=0,016), QTd (43.93±15.19 to 54.84±23.46, P=0,01) were significantly changed.

**CONCLUSIONS:** The electrophysiological alterations induced by contrast agents used in coronary angiography can be determined by QT, QTc and QT dispersion by using standard 12-derivation ECG but not signal averaged ECG parameters. Various clinical profiles of patients with regard to coronary artery disease and left ventricle systolic function didn't impact on electrophysiological effect determined by standard ECG. Clinical results of this electrophysiological alterations need to be evaluated further. **REF57**

**D159 - REPERFUSION ARRHYTHMIAS: ARE THEY ONLY A MARKER OF EPICARDIAL REPERFUSION OR CONTINUING MYOCARDIAL ISCHEMIA AFTER ACUTE MYOCARDIAL INFARCTION?**

Heper G.<sup>1</sup>, Korkmaz M.D.<sup>2</sup>

<sup>1</sup>Cardiology, Ankara Etlik Ihtisas Hospital, Ankara, Turkey  
<sup>2</sup>Cardiology, Guven Hospital, Ankara, Turkey

**OBJECTIVES:** Reperfusion arrhythmias are associated with epicardial reperfusion but may also be a sign of vascular reperfusion injury which can be seen as no-flow phenomenon on coronary angiography and predicts in-hospital complications and recovery of left ventricular (LV) function. No-reflow phenomenon (patients with Thrombolysis and Myocardial Infarction (TIMI) < 2 flow) is frequently observed in patients after mechanical or medical reperfusion procedure for acute myocardial infarction (AMI)

**METHODS:** We hypothesized that reperfusion arrhythmias may be related to continuing myocardial ischemia. We documented all arrhythmia episodes in patients with AMI and compared arrhythmia rates in the different therapy groups. We also compared arrhythmia rates according to TIMI flow achieved or existed after MI.

**RESULTS:** The highest arrhythmia rate was detected in patients to whom thrombolytic therapy was given for AMI (64%). The arrhythmia rate was lower in patients with primary PCI performed for AMI (46.2%) than those receiving thrombolytic therapy. When compared to the arrhythmia rate according to TIMI flow, we showed that the lowest arrhythmia rate was found in patients TIMI 3 flow (17.2 %) achieved with any procedure after AMI. The arrhythmia rate was 84% in patients with TIMI 2 flow and 33.3% with TIMI 0-1 flow (P<0.001). The arrhythmia rate was appreciably lower after 48 hours of MI.

**CONCLUSIONS:** This findings suggest that the continuing myocardial ischemia represented by TIMI flow at the coronary angiography after acute myocardial infarction may have an important role in the pathogenesis of reperfusion arrhythmias. **REF37**

**D160 - P-WAVE DISPERSION IN PATIENTS WITH STABLE CORONARY ARTERY DISEASE AND ITS RELATIONSHIP WITH SEVERITY OF THE DISEASE**

Yilmaz R., Demirbag R.

The Department of Cardiology, Faculty of Medicine, Harran University, Sanliurfa, Turkey.

**OBJECTIVES:** P-wave dispersion (PD) has been reported to be associated with inhomogeneous and discontinuous propagation of sinus impulses. The purpose of this study was to investigate the PD in patients with stable coronary artery disease (CAD), and to determine its relationship with severity of the disease.

**METHODS:** We prospectively analyzed 66 subjects with normal coronary angiogram (Group 1) and 68 patients with significant (≥50%) coronary stenosis; 25 had one-vessel disease (Group 2), 27 had two-vessel disease (Group 3) and 16 had three-vessel disease (Group 4). The maximum- and minimum P-wave duration (Pmax and Pmin) and PD were measured from the 12-lead surface electrocardiogram. Angiographic "vessel score" and "Gensini score" were used to evaluate the severity of CAD.

**RESULTS:** Pmax was longer in Group 3 and Group 4 compared with Group 1 (P=0.001 for both)(Table). PD was greater in Group 2, Group 3 and Group 4 compared with Group 1 (P<0.001 for all), and also in Group 4 compared with Group 2 (P=0.001). However, there was no statistically significant difference among the groups regarding Pmin. In bivariate correlation, PD was correlated with presence of hypertension (r=0.278, P=0.013), left ventricular ejection fraction (r=-0.231, P=0.044), left atrial diameter (r=0.223, P=0.032), presence of moderate to severe mitral regurgitation (r=0.284, P=0.017), vessel score (r=0.465, P<0.001) and Gensini score (r=0.338, P=0.005). Multiple linear regression analysis showed that only vessel score was independently associated with PD (Beta =0.471, P=0.01).

**CONCLUSIONS:** PD was found to be greater in patients with stable CAD than in controls, and to be associated with severity of the disease.

**Table. P-wave measurements of the groups.**

	Group 1 (n=66)	Group 2 (n=25)	Group 3 (n=27)	Group 4 (n=16)
P maximum (ms)	108±11 *	112±10	118±8	119±9
P minimum (ms)	83±9	79±5	80±6	79±7
P dispersion (ms)	25±7 #	33±8 †	37±6	41±3

\*, P<0.001 vs Group 3 and Group 4; #, P<0.001 vs Group 2, Group 3 and Group 4; †, P=0.001 vs Group 4.

**REF1**

**D161 - THE ECHOCARDIOGRAPHIC EVALUATION OF PATIENTS WITH HEMATOLOGIC MALIGNANCY WHO HAS NOT CARDIAC COPMLAINTS PRIOR TO CHEMOTHERAPY**

Unal N.<sup>1</sup>, Ergene U.<sup>2</sup>, Ceylan C.<sup>2</sup>, Ozdemir E.<sup>2</sup>

<sup>1</sup>Department of Internal Medicine, Celal Bayar University Hospital, Manisa, Turkey,

<sup>2</sup>Haematology Division, Department of Internal Medicine, Celal Bayar University Hospital, Manisa, Turkey

**OBJECTIVES:** The aim of this study is to evaluate the results of electrocardiography (EKG) and echocardiography (EKO) before chemotherapy in hematologic malignancy patients who does neither have cardiac history nor cardiac complaint.

**METHODS:** Fourteen patients were included in this study. The blood lipid parameters were controled. Body Mass Index (BMI) was calculated. Patients were evaluated with chest x-Ray, EKG and EKO.

**RESULTS:** 8 of patients are women and 6 of them are men. The percentage under 45 years old patient was 42,8%. Parameters were found as follows; median cholesterol level was 152.5±60.1, median trygliceride level was 151.7±68.9, median low dencity lypoprotein level was 96.1±41.6, median high dencity lypoprotein level was 31.4±14.6 mg/dL and median BMI was 23.7 ± 3.5 kg/m2. EKG results of 11 patients were normal however in 1 patient left bundle branch block, in 2 patients T-wave alternans were determined. According to EKO results, 5 patients were evaluated as normal whereas in 9 patients various cardiac abnormalities were found. In all patients chest x-ray was seen normal.

**CONCLUSIONS:** In 3 patients who does have neither cardiac history nor cardiac complaints and who did not seem having cardiac risk factors pathological EKG signs were found however in 9 patients in the same conditions different cardiac pathological signs with EKO were found. Most frequent mortality and morbidity reasons in population are cardiac diseases. EKG and EKO are non-invasive and easily used examination methods. Therefore EKG and EKO should be applied in patients older than 40 even if they do not have any cardiac complaints. **REF168**

**D162 - A CASE REPORT: CARDIAC SIDE EFFECTS OF MIRTAZEPINE IN AN ACUTE LYMPHOBLASTIC LEUKEMIA PATIENT**

Unal N.<sup>1</sup>, Ergene U.<sup>2</sup>, Ceylan C.<sup>2</sup>, Ozdemir E.<sup>2</sup>

<sup>1</sup>Department of Internal Medicine, Celal Bayar University Hospital, Manisa, Turkey,

<sup>2</sup>Haematology Division, Department of Internal Medicine, Celal Bayar University Hospital, Manisa, Turkey

**OBJECTIVES:** Acute leukemias constitute a heterogeneous group of disorder of pluripotent stem cell that express themselves either as disorders of the hematopoietic system or as lymphoid system. Mirtazepine is an atypical anti-depressant, which has both noradrenergic and specific serotonergic receptor antagonism.

**CASE REPORT:** Our patient is 24 years old, female and was taking chemotherapeutic regimen including corticosteroid, vincristine, doxorubicine, and L- asparaginase with acute lymphocytic leukemia diagnosis. Psychiatry consultation showed that the patient was suffering from depression. Therefore she took mirtazepine (Remeron®-30mg) pill 1x1/2 a day and on the third day chemotherapy was started. Hypotension, serious chest pain and sinus bradycardia were determined at the fifteenth day of the treatment with mirtazepine. Cardiac enzymes and echocardiography were normal. Doxorubicine is a potential cumulative dose related cardiotoxic agent. Because the patient was given low dose of doxorubicine, these cardiac symptoms and complaints were not associated with giving doxorubicine. L-Asparaginase is a very toxic agent but with regard to cardiotoxicity of L-Asparaginase any literature was found. L-Asparaginase was stopped but symptoms and complaints continued. Fluid replacement therapy and usage of analgesic drugs was not helpful for hypotension and chest pain. TA:80/40mmHg and pulse-rate:48/minute, TA:90/60mmHg and pulse-rate:58/minute, TA:90/60mmHg, and pulse-rate:60/minute were determined respectively at the second, third, fourth days from the beginning of cardiac symptoms. At last, all of cardiac symptoms and complaints disappeared after leaving mirtazepine.

**CONCLUSIONS:** As a result, mirtazepine may rarely lead to serious chest pain, bradycardia and hypotension. This cardiac side effects should be taken into account for the treatment with mirtazepine. **REF165**