

Summaries of Articles

Estimated Relative Cardiovascular Event Risk Reduction by 38%: Interim Results of the Multicenter Riskload Study, Implementing the Coronary Prevention Guidelines

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A multicenter study comprising 26 medical units was initiated in Turkey with the purpose of assessing the feasibility and extent of risk reduction in cardiovascular events upon implementation of the Turkish Guidelines on Prevention of Coronary Heart Disease, based on those of NCEP and the European Society of Cardiology (ESC), in patients with coronary heart disease (CHD) or those at high risk for it in the setting of clinical practice. This interim report concerns results obtained in 889 individuals followed up for 3 months and 437 subjects for 6 months out of the total enrolled 1930 volunteers. Inclusion criteria postulated a minimum of 20-40% cardiovascular event risk in the subsequent 10 years as estimated from the risk table of the ESC Guidelines. Allowance was made for the presence of symptomatic CHD, family history of premature coronary disease, diabetes, low HDL-cholesterol (HDL-C) and high triglyceride levels.

As a coincidence, the number of individuals involved in primary and secondary prevention as well as of men and women were virtually identical. Laboratory tests were performed at each center. The estimated CHD risk reduction as evaluated from the risk tables of the ESC Guidelines constituted the primary end-point, and its determinants were analyzed. In the statistical evaluation, Wilcoxon and Mann-Whitney U tests were used to test the significance of the difference in the distribution of risk categories at baseline and at the end of 3 and 6 months, respectively. In addition, Framingham risk scores, computed from the data of each individual, served to assess the mean reduction in coronary risk.

Concerning the primary end-point, mean global risk load, 26% at baseline, diminished in absolute terms by 7% at 3 months and by 10% at six months; the latter represents a relative risk reduction by 38%. This was accompanied by a fall in the level of risk factor persisting in the second 3-month period. Independent variables determining the (enhanced) reduction in risk categories at the end of 6 months were: 1) (high) degree of compliance with the treatment, 2) absence of CHD, 3) female gender, and 4) (high) level of baseline HDL-C. At the end of six

months, women exhibited a higher reduction in cardiovascular risk than men. While the risk reduction at the second and third visits in patients with CHD amounted to 6% and 8%, respectively, a reduction by 8% ($p<0.001$) and 11% ($p<0.001$) was obtained in the setting of primary prevention.

The risk reduction was more prominent in nonsmokers than in smokers. Diabetes did not emerge as a factor limiting the extent of risk reduction. Whereas at the end of 6 months subjects without hypertension, the most prevalent risk factor in this cohort, revealed a decline of coronary risk by merely 5%, those with hypertension showed a decline by 11% ($p<0.001$). In the frame of primary prevention, a 9% risk reduction was elicited in those not requiring lipid lowering treatment, by contrast the risk was reduced by 14% in persons subjected to such a treatment. These risk reductions at 6 months were accompanied by a diminution of mean LDL-C level by 20.6%, a rise in mean HDL-C level by 11.5%, a fall in mean systolic blood pressure by 14 mmHg. Yet, only one out of each six smokers succeeded in discontinuing the habit.

It was concluded that, when the recommendations of standard prevention guidelines are implemented in clinical practice in the Turkish population, among each 1000 individuals comprising equal numbers of high-risk men and women and patients with CHD, cardiovascular events could be prevented in 100 persons in the following ten years.

Key words: Cardiovascular event risk, coronary risk reduction, guidelines, implementation of prevention guidelines, optimal treatment, preventive cardiology

Intracoronary Stent Implantation: Six Months Results, Predictors of Stent Restenosis

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Coronary artery stents are known to reduce the rate of restenosis after coronary angioplasty and various types of stents have been used widely in the treatment of coronary artery disease.

In this study we evaluated six months clinical and angiographic follow up results of a patient group in whom various types of stents were implanted in all indications in the Institute of Cardiology, University of Istanbul. Angiographic restenosis rate and predictors of stent restenosis were investigated in

180 consecutive patients. 199 stents were implanted in 190 lesions of 180 patients. Types of stents were as follows: 61 Multilink stents, 66 Microstents, 17 Palmaz-Schatz stents, 38 Wiktor stents, 11 Cordis stents, 4 NIR stents and 2 Wallstents. Primary success rate was 97,7%. One patient had Q and another one had non-Q wave myocardial infarction, and three other patients underwent emergency bypass surgery. Acute, subacute stent thrombosis and death did not occur. Patients were clinically and angiographically followed up at their sixth month of stent implantation. One hundred and fifty seven patients (89%) had coronary angiography at six month after stent implantation. Stent restenosis was documented in 47 patients and restenosis rates per patient and per stent were calculated as 29,9% and 27,9%, respectively. Two patients had non-Q wave myocardial infarction, 25 patients required repeat coronary angioplasty, one patient died and event free survival rate was found as 82,9%. In multivariate analysis, predictors of stent restenosis were the type of the lesion and the diameter of the stent.

In conclusion in a group of patient, which have heterogen clinical and angiographic characteristics, and in whom various stent types were used for all indications, primary success and six months event free survival rates were found to be high, angiographic restenosis rate were comparable to the single vessel elective stent implantation studies. Predictors of angiographic restenosis were the type of the lesion and the diameter of the stent.

Key words: angioplasty, coronary stent, restenosis.

Endothelial Injury During the Preparation of the Saphenous Vein for Use as Coronary Bypass Graft: A Light and Electron Microscopic Study

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In order to determine and discuss the optimal preparation technique to use the human saphenous vein as a graft, the effects of solution and pressure variables on vein morphology was compared by scanning electron and light microscopy.

Saphenous vein specimens obtained from 10 patients who will undergo coronary artery bypass graft operation were divided into 7 segments, each one 3-4 cms long and 7 groups are formed. Group 1 was taken as control. In groups 2 and 3 saline-heparin solution, in groups 4 and 5 blood-heparin solution and in groups 6 and 7 blood-salineheparin

solution were applied at 28°C, under 100 mmHg and 300 mmHg pressure producing a distention in the veins and the segments were kept in the related solutions for one hour. Then, each segment was divided into two pieces. First pieces were examined under a routine light microscope in % 10 buffered formalin solution and the second examination was performed after staining with Hematoxylin-Eosin and Elastic Van Gieson (Verhoeff). The second pieces were perfused with cold buffered (pH 7.2) % 3 glutaraldehyde under 100 mmHg which is equivalent to in vivo arterial pressure. Following routine electron microscopic examination and evaluation with scanning electron microscope (SEM) was made.

In the examination performed with light microscopy and SEM, pathological damage was evaluated as endothelial cell separation, endothelial cell loss, exposure of the basement membrane; intimal and medial edema. These pathological damages were scored between 0 and 4. Median scores were calculated for each group. The median scores were as follows: 0.6 ± 0.5 in Group 1 (control), 6.6 ± 0.5 in Group 2 (saline-heparin-100 mmHg-28°C), 17 ± 0.7 in Group 3 (saline-heparin-300 mmHg-28°C), 5.6 ± 0.5 in Group 4 (blood-heparin-100 mmHg-28°C), 12 ± 0.7 in Group 5 (blood-heparin 300 mmHg-28°C), $7.6 \pm$ in Group 6 (blood-saline-heparin-100 mmHg-28°C), 17.5 ± 1.3 in Group 7 (blood-saline-heparin-300 mmHg-28°C). The scores in Group 4 was interpreted as the closest ones to the control group compared to the scores of other groups. Although local endothelial loss and separation was observed in Group 4, the score of this group was found to be statistically significant compared to Group 5 ($p<0.02$), Group 3 ($p<0.0001$), Group 6 ($p<0.0004$) and Group 7 ($p<0.00011$).

In conclusion, the preparation of saphenous veins in blood-heparin solution under 100 mmHg of pressure was found to be the optimal preparation technique for the prevention of endothelial surfaces.

Key words: Coronary bypass surgery, endothelial damage, saphenous vein

Prevalence of Combined Hyperlipidemia in Turkish Adults: A Population-based Study Indicating Different Risk Factor Associations in the Two Genders

A. Onat

The cohort of the Marmara region in 1997 and of the rest of Turkey in 1995 were analyzed to identify in-

dividuals with combined hyperlipidemia (CH) as defined by the presence of hypertriglyceridemia >200 mg/dl associated with high levels of LDL-cholesterol (>130 mg/dl) and/or total cholesterol (>200 mg/dl). Furthermore, it was attempted to provide information on the risk factors accompanying the CH in these men and women. A total of 78 individuals with CH were identified which suggested a prevalence among Turkish adults of 6.6% in men and 5.2% in women, thus indicating that an estimated 2 million Turks, comprising 1.1m men and 0.9m women, harbor this metabolic abnormality.

Differences in the mean values between groups were evaluated for statistical significance. CH emerged in women at a more advanced age by about 10 years than the general population whereas it did so at a similar (marginally younger) age in men, and its prevalence in women was less common by one-fifth. CH appeared to manifest clinically with different patterns in the two genders in regard to the associated risk factors. While the association of central obesity was shared in both genders, low levels of HDL-cholesterol were the only accompaniment among women. By contrast, men with CH exhibited significantly, and at times markedly, elevated levels of systolic and diastolic blood pressure, blood fibrinogen and a tendency to diabetes, while their levels of HDL-cholesterol remained normal. The observation of the emergence with different clinical patterns in the genders in Turkish adults merits to be confirmed and the possible underlying reasons to be investigated in the future.

Key words: Combined hyperlipidemia, coronary risk, risk factors

Evaluation of the Transit Time of Doppler Derived Transmitral A Wave to Left Ventricular Outflow Tract (A-Ar Interval) by Dobutamine Stress Test in Patients with Coronary Artery Disease

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Contraction of the left atrium in diastole generates a pressure wave (A) that is initially directed toward the left ventricular apex and is then reflect to the left ventricular outflow tract (Ar). The transit time of the atrial contraction wave to the left ventricular outflow tract (A-Ar interval) is correlated with left ventricular stiffness. We studied the probable

relation of the A-Ar interval with coronary artery disease (CAD).

To investigate this, 20 patients with CAD and 10 patients with low likelihood of CAD underwent dobutamine Stress Doppler echocardiography. 2D-M mode and Doppler images of all subjects were acquired during peak dobutamine infusion and baseline. Transmitral A wave reflection (Ar) to LVOT was recorded by placing sample volume of 2.5MHz pulsed Doppler imaging transducer between anterior mitral leaflet and LVOT approximately 1-1.5cm below the aortic cusps in apical five chamber view. The A-Ar interval was determined from the time axis of the spectral profile by measuring the peak-to-peak separation of the A and Ar velocity waves.

Results: There was no significant difference between the baseline Doppler parameters of two groups except A-Ar interval, isovolumetric relaxation time (IVRT) and E wave deceleration rate (E-Dec). A-Ar interval was shorter (49 ± 12 msec. - 61 ± 9 msec., $p < 0.01$), IVRT was longer (107 ± 25 msec.- 86 ± 10 msec., $p < 0.01$) and E-Dec was slower (37.2 ± 3 - 33.2 ± 5 $p < 0.05$) in patients with CAD than control group. Although there was no significant change in control subjects, the difference between of the two groups A-Ar interval was augmented by dobutamine infusion (39 ± 10 msec.- 61 ± 12 msec., $p = 0.009$).

The transit time of the atrial contraction wave to the left ventricular outflow tract (A-Ar interval) was shorter in patients with CAD compared to normal subjects. Ischemia induced by high dose dobutamine infusion shortened the A-Ar interval additionally. The A-Ar interval is an easily measured new diastolic parameter that can increase the sensitivity of dobutamine stress echocardiography the diagnosis of CAD.

Key words: A-Ar interval, coronary artery disease, dobutamine stress test

Hemoptysis Due To Thoracic Aortic Pathologies and Aortobronchial Fistulas

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Aortobronchial fistula (ABF) is a communicating tract between the aort and the bronchial tree. ABF is a rare but fatal complication of aortic pathologies. The major symptom is recurrent or massive hemoptysis. Although ABF may occur by opening of the aneurysmal sac into the lung parenchyma, it

can also be encountered in pseudoaneurysms that develop after surgical repair of the aneurysms, coarctation of the aorta and patent ductus arteriosus. The aim of this study is to evaluate the outcome of the patients with ABF.

Method: Between January 1991 and December 1997, ABF was diagnosed in six patients in our center. Our cases consisted of four males and two females with an average age of 39 ± 12 years. Descending aortic aneurysms were found in 4 of the cases. One of the other patients had been operated for coarctation of the aorta and had tube graft interposition in 1975. One patient had Bentall operation for the ascending aortic aneurysm in 1991. ABF was found secondary to pseudoaneurysms developed at the proximal anastomosis of the former, and at the distal anastomosis of the latter. Four of the patients were operated by us. Surgical approach was performed through the left posterolateral thoracotomy. In one patient left atrio-femoral bypass was used. In another patient cardiopulmonary bypass was applied via main pulmonary artery and left femoral artery. Two cases were operated on with simple aortic clamping. We used sutureless aortic tube graft in one patient, woven velour vascular graft patch in one, and a tube graft in one case.

Results: The patient who had Bentall operation died due to multiorgan failure preoperatively. One patient was lost due to sudden rupture of the aneurysm before the operation. One of the four operated cases died during the operation. The other 3 cases were discharged successfully and are doing fine.

Conclusion: ABF is a serious complication of the pathologies of the thoracic aorta and, as soon as diagnosed, surgical treatment must be performed. Differential diagnosis of hemoptysis is vitally important.

Key words: aneurysm, aortobronchial fistula, hemoptysis, thoracic aort

Case Reports

Libman - Sacks Endocarditis and Aneurysmatic Dilatation of the Ascending Aorta in Systemic Lupus Erythematosus of Childhood (Case Report)

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Most specific cardiac involvement in systemic lupus erythematosus (SLE) is Libman-Sacks endocarditis

characterised with noninfective valvular vegetations. Libman-Sacks endocarditis has been reported very rarely in paediatric lupus and as well as we know it has not been reported aneurysmatic dilatation of ascending aorta in SLE of children. 14 year-old girl, whose symptoms and signs had begun at 4 years and she has been followed by the Paediatric Rheumatology unit since 6 years-old, was referred to the Paediatric Cardiology unit for cardiac murmur. Echocardiographic evaluation was revealed valvular thickening and echodense vegetation on anterior leaflet of mitral valve with mild regurgitation, and valvular thickening and vegetation on right coroner cusp of the aortic valve with mild regurgitation. Additionally there was aneurysmatic dilatation of the ascending aorta without aortic stenosis. It is suggested that this vascular complication may be caused by the involvement of connective tissue of the vessel since she had not been hypertensive at the time discovered the aneurism of ascending aorta.

Key words: Systemic Aneurysmatic dilatation of ascending aorta, Libman-Sacks Endocarditis, systemic lupus erythematosus, pediatric Lupus

Heart and Lung Transplantation in Childhood: A Case Report

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A 9-year-old child, who had patent ductus arteriosus that had been ligated in our clinic 17 months ago, d-type transposition of great arteries, double-outlet right ventricle, restrictive ventricular septal defect and irreversible pulmonary vascular disease underwent a heartlung transplantation procedure, firstly done in Turkey. Though the early diagnosis and treatment is generally possible in congenital heart diseases, repairing procedures may delay reasoning from various factors and these patients can lose their chance of correction. Optimal conditions and organisation are being developed in Turkey and in our region, which are required for improving the survival and quality of life of these transplant applicants.

Key words: transplantation, double-outlet right ventricle, pulmonary vascular disease