

Summaries of Articles

Risk Factor Trends in the Inhabitants of the Marmara Region: Smoking, obesity, physical activity and diabetes mellitus

A. Onat, M. A. Büyükbeşe, D. Ural, İ. Keleş, E. Ural, V. Sansoy

A cohort of the Marmara region which constitutes 1/4 of the population of Turkey was surveyed for the third time in June 1997. A total of 760 adults (comprising 518 subjects of the original cohort and 212 persons newly enrolled) were examined. This report describes the data pertaining to cigarette smoking, relative weight, physical activity and prevalence of glucose intolerance and analyzes relevant changes incurred over the past 7 years. Adjustment for aging by 7 years was carried out for each parameter and gender by taking into account the weighted differences of mean values in various age groups in the initial survey.

In the Marmara region during 1990 and 1997, the proportion of smokers rose by one-quarter in women, while in men a minimal decline was noted. Body mass index rose in men by 0.86 kg/m² - corresponding to about 2.5 kg - as contrasted to women who had no significant change, yet were previously known to be obese in general. In the assessment of physical activity, much harder to approach objectively, men and women appeared to have increased their activity by 20% and 14% though the reliability of this finding may be low. Utilized criteria for identifying diabetes were: persons known to be diabetic, a fasting glucose concentration in venous plasma of >140, or a postprandial value > 200 mg/dl. The prevalence of diabetes in the entire cohort was 5% and 6.3% in men and women, that of glucose intolerance 1.2% and 3.3%, respectively. These rates imply the continuation of a rising trend.

Key words: Diabetes, obesity, risk factors, smoking

The Role of Intraoperative Transesophageal Echocardiography Guidance in Closed Mitral Commissurotomy

M. Değertekin, Y. Başaran, E. Akıncı, M. Gençbay, H. Yılmaz, İ. Duran, F. Turan, C. Yakut

In patients with mitral stenosis, transesophageal echocardiography (TEE) can be used to preoperative evaluation of mitral valve morphology and left atrial thrombosis. In addition to preoperative applications, TEE can be utilized intraoperatively during percutaneous balloon mitral valvuloplasty (PBMV), open mitral commissurotomy and mitral valve replacement surgery. Percutaneous balloon mitral valvuloplasty is an effective but rather expensive method for the treatment of rheumatic mitral stenosis. Closed mitral commissurotomy (CMC) was a blind procedure before transesophageal echocardiography (TEE) era. We assessed the utility of TEE guidance during closed mitral commissurotomy to enhance the efficacy and reduce the complications of surgery. 27 patients (19F, 8 M), 16 of them pure mitral stenosis, 9 patients with mild aortic insufficiency were included in the study. Mean age of study group was 36.2±7.4 years. 17 patients were in normal sinus rhythm and 10 were in atrial fibrillation.

Mitral valve areas were (MVA) measured by pressure half time (PHT) and planimetric (PLN) methods before, during and after the CMC procedure by using transthoracic and transesophageal echocardiography. During surgery, instant information was obtained by using Vingmed CFM 800 multiplane probe. The success of the procedure was determined by following parameters: mitral valve excursion, mitral commissural leakage, MVA disappearance of spontaneous echocontrast and decrease of mitral valvular gradient, mitral regurgitation and rupture of the chordae.

The MVAs detected by PHT and PLN methods using TEE probe were significantly increased from 1.06±0.17 cm² to 2.4±0.3 cm² and from 1.01±0.09 cm² to 2.21±0.19 cm², respectively after the CMC procedure (p<0.05 and p<0.05). Intraoperative TEE contributes to the surgeon's performance allowing to monitor the valve area and detect the potential complications, earlier.

Key words: Transesophageal echocardiography, closed mitral commissurotomy, mitral stenosis.

Identification of Multivessel Disease by a New Exercise Testing Index: Stress-Recovery Index

M. Aksoy, M. Gürsürer, A.E. Pınarlı, K. Gürkan, K. Yeşilçimen, T. Ulusoy, B. Ersek

We examined the value of a new index (Stress-recovery Index (SRI)) combining information on the amount and kinetics of ST depression in the heart rate domain during exercise and recovery in identifying multivessel disease (MVD). 168 cases without previous myocardial infarction underwent symptom-limited treadmill exercise testing and coronary angiography. At the end of each test, the lead exhibiting the greatest ST depression was selected for further analysis to calculate the SRI. The heart rate and corresponding ST segment values were plotted on a coordinate system, against x- and y-axes, respectively. The intersection points of the lines transversing each value at the axes were combined to form a line and the area subtended to baseline and limited by the ST trend against heart rate during both exercise (A1) and recovery (A2) was calculated. The difference between A1 and A2 was defined as the SRI. Patients were divided into two groups according to the angiographic results: patients with MVD (group I, n=79) and patients without MVD (group II, n=89). The mean SRI of group I was significantly lower than that of group II (-21.1 ± 24 , 11.0 ± 28 mm. beats.min⁻¹; $p<0.0001$). The cut-off point for defining an increased risk of MVD was found as -4 mm.beats.min⁻¹ by means of the receiver operating characteristics curve. Accordingly, the sensitivity and specificity of $SRI \leq -4$ mm.beats.min⁻¹ for predicting MVD were 80% and 79%, respectively. The sensitivity of SRI was significantly higher than obtained by other conventional exercise testing parameters for a similar level of specificity. In particular, SRI had higher sensitivity for 3-vessel (95%) compared to other criteria. In conclusion, SRI may be used as a new index for the identification of MVD in patients, in whom the accuracy of standard electrocardiographic criteria is unsatisfactory.

Key words: Exercise testing, stress-recovery index.

Intracardiac Cardioversion for Atrial Fibrillation

B. Dokumacı, S. Atalay, A. Ünalır, N. Ata, B. Timuralp

Cardioversion (CV) is the most effective therapeutic approach for reversion of atrial fibrillation (AF) to sinus rhythm (SR). In addition to its being performed transthoracically, it may be performed via the intracardiac route. In this study we present the results of intracardiac cardioversion (ICC) in 29 patients.

Mean age of the study group was 60 ± 2 years and the mean AF duration was 36.9 ± 7.2 months. We used Hewlett-Packard 43120A external defibrillator as the energy source for the first 15 patients, by means of a technique we developed. For the remainder 14, Ventak ECD cardioverter defibrillator was used. Reversion to SR was achieved in 72% of patients. Comparison of the success (n=21) and failure groups in regard to AF duration, left ventricular dimensions and ejection fraction revealed no statistical difference. Left atrial dimensions were significantly higher in the failure group ($p<0.01$). Antiarrhythmic drug usage before the procedure was 57% in the success group and 12% in the failure group. The success rate was 93% with the Ventak ECD cardioverter defibrillator and 53% with HP external defibrillator. The mean energy used, (10.9 ± 1.7 vs 36.0 ± 3.6 joule, respectively) was significantly lower in the Ventak ECD group, $p<0.001$. We observed hematoma in the femoral region not requiring therapy in 3 patients and ventricular fibrillation due to a defect of synchronization in 1 patient. This patient was immediately defibrillated by transthoracic route.

In conclusion, ICC is an effective method for reversion of AF to the SR.

Key words: Atrial fibrillation, intracardiac cardioversion

Comparing the Effects of Pulsatile and Nonpulsatile Perfusion on the Endocrine System in Open Heart Surgery

E. Silistreli, E. Hazan, H. Çatalyürek, B. Uğurlu, N. Sarıosmanoğlu, Ü. Açikel, Ö. Oto

We investigated the effects of flow characteristics in cardiopulmonary bypass on the endocrine system, and 22 patients were included in two groups according to the flow characteristics applied: pulsatile and

nonpulsatile flow. The hormones studied were TSH, T3, T4, Free T3 free T4, ACTH, cortisol aldosterone, insuline and growth hormone; also glucose measurements were performed in the same periods. The hormone level detections were made in all patients five times as in the preoperative period, after beginning of general anesthesia, at the 30th and 60th minutes of perfusion, and at 24th hour postoperatively. It was ascertained that, in the perfusion period, T3 stayed at higher postoperatively. It was ascertained that, in the perfusion period, T3 stayed at higher levels and FT3 diminished oppositely in the pulsatile group. There was not significant difference between the two groups in terms of T4 and FT4. For ACTH, only in the 24th hour period, the mean level of the pulsatile group was significantly high, and this was also true for cortisol in the same period; however, the difference was not statistically significant. For aldosterone, the mean levels were lower in the pulsatile group while the differences were not statistically significant. Mean level of insulin was significantly lower in the pulsatile group by the 60th minutes of perfusion. The similar finding was also accurate for glucose in the perfusion period. The mean level of growth hormone was significantly higher in the pulsatile group by the 60th minutes of perfusion. The lower level detections of insulin in the perfusion period of the pulsatile group was noticed and this could be related with the lower glucose levels and higher anti-insulinary hormone levels.

Trends in Mortality, Coronary Morbidity and Mortality in the Inhabitants of the Marmara Region

E. Ural, A. Onat, V. Sansoy, D. Ural, M.A. Büyükbeşe, İ. Keleş

In the third survey of a cohort of the Marmara region of Turkey in June 1997, a total of 531 subjects of the original cohort were followed up and 212 newly enrolled persons were subjected to physical examination and an ECG recording at rest. Rates of death, coronary heart disease (CHD) death, and new nonfatal coronary events (NCE) were studied in the original cohort whose median age at time of survey was 46 years both in men and women. NCE were defined to include nonfatal myocardial infarction, acute myocardial ischemia, and newly developed

stable angina with or without associated myocardial ischemia. During a mean of 7 years since the initial survey, the follow-up amounted to 5200 person-years, and a total of 35 deaths, 21 CHD deaths and 26 NCE were registered.

Overall annual death rate was 6.7 per 1000 adults which was slightly higher in women (7.4 vs. 6.1 per 1000). A similar slight preponderance of females (4.5 vs. 3.6 per 1000) was noted in CHD death as well. NCE were observed at a rate of 6.5 per 1000 adults (7.1 in women vs. 6 per 1000 in men). Coronary death and event rates in the Marmara region appeared to be similar to those of the entire Turkish cohort studied in 1995 though female preponderance was confined to this region. Though most (13/17) of new coronary events in women consisted of new angina and/or new myocardial ischemia, most (8/15) of new events in men manifested as myocardial infarction.

The Relationship Between Aortic Dissection and Aneurysm and Coronary Atherosclerosis: Its Effects On Prognosis

L. Can, F. İslamoğlu, Y. Atay, U. Gürcün, E. Kara, S. Payzın, A. Altıntaş, M. Akın, A. Hamulu, A. Alayunt, Ö. Bilkay, S. Büket

Between January 1993 and August 1997, 215 patients had been treated in the Ege University Medical Faculty, Department of Cardiovascular Surgery because of various aortic lesions. Aortic dissection was detected in 70 (32.6%) and aneurysm in 145 (67.4%) patients. Coronary angiography was performed to search for concomitant coronary artery disease in 118 (54.8%) of them. Concomitant coronary artery disease was detected in 10 (14.3%) patients with aortic dissection and in 42 (28.9%) patients with aortic aneurysm. In the group of abdominal aortic aneurysm, concomitant coronary artery disease was detected in 29 (82.8%) among 35 patients to whom coronary angiography was performed. Coronary artery bypass surgery (CABG) was performed in 9 patients who had aortic dissection and in 21 patients who had aortic aneurysm, PTCA was performed in 5 patients also. Eighteen (25.7%) patients who had dissection and 22 (15.2%) patients who had an aneurysm died.

As a conclusion, the concomitant incidence of coronary disease and cardiac mortality are considerable among patients with aortic disease and especially in those with abdominal aortic aneurysm. The preoperative determination of the severity of coronary artery disease and eventual revascularization by CABG or PTCA before or during aortic surgery, is crucial.

Key words: Coronary atherosclerosis, aortic dissection, aortic aneurysm.

Adverse Plasma Apolipoprotein AI and B Levels in Adults of Istanbul, Turkey

A. Onat, V. Sansoy, E. Ural, D. Ural

During the Turkish Risk Factor Survey plasma concentrations of apolipoprotein AI (apoAI) and apo B were included in the monitoring of coronary risk assessment in a cohort of the İstanbul adult population representatively sampled. In 338 adults aged 27 years or over (mean age 48 ± 12) comprising 160 men and 178 women plasma apolipoprotein AI and apo B values were determined by utilizing radial immunodiffusion plates (Behring) containing antisera of immunized sheep, and the remaining lipid and lipoprotein fractions by enzymatic technique utilizing a Reflotron apparatus. Obtained findings were evaluated after stratification for sex and age groups.

Mean values in the population sample for apoAI were 13% lower in men than in women (127 ± 33 and 145.5 ± 38 mg/dl, respectively). By contrast, mean levels of apoB in women (129 ± 46 mg/dl) were as high as in men (127 ± 40 mg/dl). These implied slightly low levels of apoAI and conspicuously high levels of apoB in both genders. A mild (by 13%) and persistent rise of mean apoAI concentrations was displayed in both genders between the age groups

30-39 and 60-69 years. A rise of similar magnitude was noted across the same age groups in the mean apoB levels in men, whereas in women the escalation reached 37%. Mean apoB values closely paralleled levels of LDL-cholesterol in both sexes at middle-age (30-59 years) but started to fall in women one decade later than the latter. It was concluded in this study (which analyzed for the first time levels of apoAI and apoB in Turkish adults after stratifying for sex and age) that adult inhabitants of the megalopolis İstanbul exhibited an adverse constellation of plasma apolipoproteins.

Key words: Apolipoproteins, lipoproteins, plasma lipids

A New Treatment Option for Hypertrophic Obstructive Cardiomyopathy: Alcohol-induced Septal Infarction

T. Okay, M. Moğolkoç, H. Dinçer, S. İnanır, I. Erdoğan, Y. Maşrapacı

The systolic approximation of the anterior leaflet of the mitral valve and hypertrophied, basal portion of the interventricular septum cause obstruction to the left ventricular outflow in hypertrophic obstructive cardiomyopathy. A new strategy for the management of hypertrophic obstructive cardiomyopathy was used in a 37-year-old female patient, resistant to drug treatment with a mean resting gradient of 22 mmHg. The first septal branch of left anterior descending artery was occluded with an injection of absolute alcohol. After induced septal infarction the mean gradient in the left ventricular outflow was reduced to 3 mmHg. The functional class was reduced from III to I, and the basal septal infarction was documented by myocardial perfusion scintigraphy. This is the first published case in Turkey, who showed a very promising functional improvement.