Summaries of Articles

Investigations

Survey on Prevalence of Cardiac Disease and its Risk Factors in Adults in Turkey: 5. Hypertension and Smoking

A. Onat, M. Şenocak, E. Örnek, Y. Gözükara, G. Şurdum-Avcı, Y. Karaaslan, U. Özışık, M. İşler, T. Taşkın, F. Tabak, Ö. Öz, R. Özcan

In a survey conducted on a representative random sample of the Turkish adult population comprising 3689 persons 20 years of age or older residing in 59 communities, the blood pressure was twice measured at an interval of 3 minutes, and the mean value was taken into account. Following mean values were obtained when standardized for age range 35-64 with WHO criteria: 125/80 mmHg in men, 133/82 in women. Hypertension was defined as a mean reading of ≥160 mmHg systolic and/or ≥90 mmHg diastolic or a pressure controlled by drug treatment. Eleven % of adult men and 16.5 % of women were hypertensive, this prevalence rose to 26 % and 40 %, respectively, in men and women aged 50 or older.

In international comparison, whereas the risk arising from blood pressure appeared limited in Turkish men, it was moderately high in Turkish women, the latter being mainly due to a high prevalence of obesity. No significant difference was noted in the mean blood pressure between urban and rural residents. Half of adult Turkish men smoked daily more than 10 cigarettes, and one-tenth smoked up to 10 cigarettes. Seven % of women smoked over 10 cigarettes and 12 % up to 10 cigarettes daily. Though significantly less rural women consumed tobacco than their urban counterparts, one of every three urban women aged 20-49 was a habitual smoker. The overall risk of Turkish men arising from smoking was considered high.

Survey on Prevalence of Cardiac Disease and its Risk Factors in Adults in Turkey: 6. Diabetes and Obesity

A. Onat, E. Örnek, M. Şenocak, Y. Gözükara, G. Şurdum-Avcı, Y. Karaaslan, V. Taşkın, F. Tabak, M. İşler, U. Özışık, Ö. Öz, R. Özcan

The prevalences of diabetes and obesity were studied in a random sample of 3687 persons aged 20 years and over who resided in 59 communities and represented the Turkish adult population. Subjects who reported to be diabetic, who revealed a fasting blood-glucose value of ≥ 130 mg/dl or a 2-hour-postprandial value exceeding 170 mg/dl were classified as diabetic. Among all adults 2.3 % reported diabetes in history (83 participants), and in the remainder diabetes was discovered in 1.6 %. When age standardization was performed for subjects having 35-64 years, the prevalence of diabetes was 6.3 % in women and 4.6 % in men. These rates are intermediate for men but fairly high for women in international comparison. Though no significant difference existed in the prevalences between overall urban and rural residents, diabetes was encountered more frequently among urban men ($p<0.03$).

The median body mass index (BMI) among age-standardized population 35 to 64 years of age was 25.4 kg/m^2 in men and 27.7 kg/m^2 in women which reflects an appropriate relative weight in men, but one to be concerned in women. Obesity (defined as 30 kg/m^2 BMI in men, 29 kg/m^2 in women) was observed in 16 % of men and 47 % of women between the ages 40 and 59 years. This survey confirmed that obesity raised the prevalence of both diabetes and hypertension, in addition to its similar effects on serum cholesterol and triglycerides dealt with in a previous paper.

Atrial Arrhythmias in Cases With Mitral Stenosis and Sinus Rhythm

İ. Nalbantgil, R. Önder, B. Kılıççıoğlu, C. Türkoğlu, H. Kültürsay, M. Akın

To determine the type and frequency of atrial arrhythmias in patients with mitral stenosis and sinus rhythm we studied 60 such patients by 48-hour ambulatory ECG monitoring. Thirty-six patients (60 %) showed arrhythmia. Twenty-eight patients (47 %) had paroxysmal atrial tachycardia, 15 (25 %) atrial fibrillation, 6 (10 %) multifocal atrial tachycardia and 4 (7 %) atrial flutter. Ninety-one per cent of episodes were asymptomatic.

It is concluded that atrial arrhythmias occur frequently in patients with mitral stenosis and sinus rhythm and that most are asymptomatic. In these cases, the role of such arrhythmias in the mechanism of embolic process is open to discussion.

Ventricular Ectopy Following Conversion of Supraventricular Tachycardia to Sinus Rhythm

M. Öztürk, İ. Fıratlı, F. Değirmencioğlu, S. Aytekin, C. Türkoğlu, V. Aytekin, C. Demiroğlu

Conversion of episodes of supraventricular tachycardia (SVT) into sinus rhythm by intravenous (IV) verapamil, IV acebutolol or carotid sinus pressure (CSP) were studied under continuous ECG monitoring. Seventy-four of 131 SVT episodes (% 56) in 89 cases given IV verapamil, in which CSP was applied demonstrated ventricular arrhythmias during reversion, ranging from a single ventricular premature contraction (VPC) to a short run of ventricular tachycardia. These arrhythmias occurred occasionally after the administration of the drug just before the termination of the SVT, and frequently at and/or following its cessation. The time interval between the last SVT beat and the first VPC was frequently shorter than the following sinus cycle thus excluding a possible escape ventricular beat. These arrhythmias were frequently seen in the 15 seconds following termination (with a maximum of 150 seconds). On the other hand, patients who demonstrated VPCs with verapamil, acebutolol or CSP showed no VPCs with the same drugs or CSP during sinus rhythm. This observation suggests that these ventricular arrhythmias are closely related to the cessation mechanism of the SVT episodes.

The Value of the Combination of Two Different Calcium Antagonists in the Treatment of Hypertension

İ. Nalbantgil, R. Önder, B. Kılıççıoğlu, C. Türkoğlu

40 patients with moderate hypertension were divided into two groups. 20 patients (A group) used 240 mg Verapamil and another 20 patients (B group) used 20 mg Nitrendipine during the first six weeks. Then 10 mg Nitrendipine plus 120 mg Verapamil were given to these 40 patients during the second six weeks. After the combination therapy 240 mg Verapamil to B group and 20 mg Nitrendipine to A group were given during the third six weeks.

When Verapamil and Nitrendipine were used alone, blood pressure decreased significantly in each group. However, blood pressure decreased more when the combination therapy was used and increased when the treatment was changed to single drug therapy from two drugs' combination. On the other hand side effects were three times less during the combination therapy. It is concluded that the combination of two different calcium antagonists in the treatment of hypertension will be a new dimension in the therapy.

Diagnostic Value of Exercise Testing in Women Suspected of Coronary Heart Disease

V. Sansoy, A. Berkyürek, M. Platin, İ. Eren, M. Özcan, D. Güzelsoy, C. Demiroğlu

To determine the diagnostic value of exercise testing (ET) for detecting coronary artery disease (CAD) in women, exercise variables were compared with the findings of coronary arteriography in 62 cases.

The study was carried out retrospectively in 62 women ranging in age from 35 to 73 (mean: 51±8). Of these, coronary arteries were found to be normal in 41 and CAD was diagnosed in 21. Chest pain during exercise testing, 1 mm ST segment depression, "adjusted ST" (ΔST/ΔHR) and an increase or no change in R wave with exercise were the analysed variables. Of the 41 cases with normal coronary arteries, 20 had chest pain, 10 had 1 mm ST depression, ΔST/ΔHR was found to be ischemic in 7 and abnormal R wave response was observed in 19. Of the patients with CAD, 15 had chest pain, 15 had 1 mm ST depression, ΔST/ΔHR was ischemic in 15 and R wave response was abnormal in 15. Thus, the sensitivity of all variables was found to be 71 % and their specificities were 53 %, 76 %, 85 % and 54 % respectively.

These results suggest that the use of ΔST/ΔHR increases the diagnostic yield of the ET for CAD in women.

Prevalence and Prognostic Significance of Late Potentials in Coronary Artery Disease

İ. Sabah, M.Ö. Uğurlu, M. Suher, H. Taşdemir, M. Bali, M. Sökmen, S. Uysal

Ventricular late potantials (LP) occurring after the QRS complex were detected on the body surface using high-resolution ECG and signal-averaging techniques in 14 normal subjects and 62 patients with coronary artery disease (CAD). All patients had a previous myocardial infarction and were not taking antiarrhythmic drugs. In the control subjects no LP were recorded. The prevalence of LP was 34 % in patients with CAD. Among 43 patients without documented ventricular tachycardia and/or fibrillation (VT/VF), LP were present in 9 (21 %), of 19 patients with documented VT/VF 12 (63 %) had LP.

The prevalence of LP increased to 77 % (17 of 22) in the presence of ventricular aneurysm or akinesia. During the follow-up period (mean 6.1 months) 7 patients with LP (33 %) presented an episode of sustained VT/VF and 4 of them (19 %) died from documented VT/VF. An episode of VT/VF appeared in only 2 patients (5 %) without LP.

We conclude that LP are a frequent finding in patients with regional contraction abnormalities, both in patients with or without documented VT/VF, their presence increases the risk of VT/VF and sudden arrhythmic death.

Leukotriene C4 in Stable Angina Pectoris

M. Metin, H. Paydak, A. Aksoy, S. Eren, A. Çengel, S. Ercan, Ö. Dörtlemez, H. Dörtlemez

The product of lipooxygenase pathway of arachidonic acid metabolism, leukotriene C4 (LTC4) levels are measured from peripheral artery and vein blood samples in 26 cases, all diagnosed as coronary artery disease and had chronic stable angina pectoris. 13 cases with normal coronary angiograms consitituted the control group. LTC4 level was found high in coronary artery disease (99.2±20.0 ng/ml) and this was significant comparing with the control group ($p<0.05$). When classified according to the number of diseased vessel, in single vessel disease arterial LTC4 level (72.1±12.9 ng/ml) was not significantly high; in two vessel disease (arterial LTC4 level 102.1±18.3 ng/ml) and in three vessel disease (123.9±21.1 ng/ml) there was significant difference compared with the control group ($p<0.005$ and $p<0.01$, respectively). The venous LTC4 levels of the patient group were not significantly different. We conclude that in chronic stable angina pectoris arterial LTC4 levels increase parallel to the extension of disease whereas venous LTC4 levels remain unchanged.

Doppler Echocardiographic Evaluation of the Correlation Between Left Ventricular Compliance Impairment and Left Atrial Systolic Time Intervals

A. Demir, C. Lüleci, E. Dönder, N. Arslan, H. Çeliker, S. Demir, O. Ayhan

The left atrial (LA) ejection (AET), preejection (APET) and corrected preejection (APETc) time as well as the early (E) peak and late (A) peak diastolic velocity, A to E ratio (A/E), the atrial flow volume to transmitral flow volume ratio (AFV/TFV) values were obtained using continuous Doppler echocardiography in 18 patients with essential hypertension (HT) and a phonocardiographically affirmed fourth heart sound (S4) who were compared to 32 hypertensive and 25 normotensive subjects (NT) without a S4. Left ventricular wall thickness (LVWT) and its ratio to end-diastolic diameter (LVWT/Dd) were determined with M-mode echocardiography.

AET was longer in the S4 (+) group than the S4 (-) group ($p<0.0005$), but APETc was shorter in the S4 (+) group than S4 (-) group ($p<0.0005$). LVWT/Dd correlated with AET (r:0.45, $p<0.001$), APETc (r:-0.45, $p<0.001$), APET/AET (r:-0.40, $p<0.001$) and APETc/AET (r:-0.52, $p<0.001$). In addition, LVWT and A to E ratio correlated with left atrial systolic time intervals (LASTI). There were no statistically significant correlations between age and the variables of LASTI.

LASTI displayed important changes pointing to a reduced LV compliance in patients with essential hypertension, compared to normotensive controls. These changes become even more striking in the presence of a fourth heart sound which can therefore be accepted as an important sign of a decrease in

compliance in a patient with hypertension. Since LASTI were not affected by age and showed significant correlation with the A to E ratio and LV dimensions, they can be regarded as reliable indicators of LV compliance.

Pulmonary Artery Banding and Surgical Results

H. Türkoğlu, T. Paker, A. Akçevin, B. Polat, Y. Yalçınbaş, A. Sarıoğlu, T. Sarıoğlu, R. Olga, A. Aytaç

Between the years 1985-1990, 14 pulmonary artery banding procedures were done on patients with various congenital cardiac malformations at the İstanbul University Institute of Cardiology. Patients' ages varied between 2.5 months and 3 years, and their weight between 3.5-11 kg. Two of them had large VSD and pulmonary hypertension, the remainder had complex postoperative period. Four of 6 patients died whose pulmonary artery pressure was reduced to a level below 30 mmHg, whereas only 1 in eight patients whose pressure was adjusted to over 30 mmHg after banding ($p<0.001$).

Although pulmonary artery banding is a good palliative procedure in patients with congenital cardiac malformations associated with increased pulmoray blood flow, it has a high mortality in some complex cases and in truncus arteriosus, especially when the pulmonary artery pressure is reduced to a level below 30 mmHg.

Angiographic Morphology in Patients with Unstable Angina Pectoris

O. Sancaktar, A.R. Kazazoğlu, T. Okay, N. Çağlar, M. Özdemir

Complex morphology and intracoronary thrombus occur frequently in patients with unstable angina pectoris, but their relation to the time of symptomatic presentation, timing of angiography and in-hospital cardiac events has not been investigated. Acoordingly, in 112 consecutive patients with unstable angina pectoris, we performed coronary angiography either in the first day of hospital admission (16±6 hours, n=44) or later in the post-admission days (4.6±1.8 days, n=68). Significant coronary artery disease was defined as any ≥% 50 stenosis, and complex morphology as any stenosis with irregularity or overhang. Coronary thrombi were present in 57% (25/44) of early angiography patients ($p<0.001$). Complex coronary morphology occurred in 55% (22/44) of early angiography patients and 47% (32/68) of late angiography patients 47% ($p<0.001$). Cardiac events (death, myocardial infarction, and urgent revascularization) occurred in 78 % (36/46) of patients with coronary thrombus, in 53 % (29/55) of the patients with complex morphology, and in 48% (42/87) of the patients with multiple - vessel disease. On the other hand, the occurrence rates of cardiac events in the patients without these angiographic features were 17% (9/66) ($p<0.001$), 26% (15/57) ($p<0.01$), 12% (3/25) ($p<0.001$), respectively.

This study showed that the presence of intracoronary thrombus was associated with a higher incidence of in-hospital cardiac events. Also angiographic detection of intracoronary thrombi varies according to the temporal relation between angiography and chest pain at rest.

Reviews

A Review of Current Dilatation Systems in Percutaneous Transluminal Coronary Angioplasty

T. Okay

PTCA has gained worldwide acceptance as primary therapy in selected patients. Because of repid advances in technology, new devices are produced on the regular basis. This article summarises currently available angioplasty technology and attempts to provide guidelines for selection of catheters and guidewires, and this information may be useful especially for the beginner in the selection of appropriate equipment for PTCA procedures.

Syndrome X

N. Özcan, A. Özet

This label has been applied since 1981 to a group of patients (often middle-aged women) who have typical angina pectoris, positive exercise tests, no evidence of coronary spasm and angiographically normal coronary arteries. These patients probably represent a het-

erogeneous group and the cause of their angina is unknown. Their angina may be ischemic and related to abnormal perfusion reserve due to inappropriate dilatation of small resistive vessels.

Symptomatic benefit can usually be achieved from sublingual glyceryl trinitrate and from therapeutic trials of calcium antagonists and nitrovasodilators. Reassurance that the condition seems largely benign and carries no risk of acute infarction is obviously appropriate but symptoms can remain disturbing.

Case Report

"Unroofed" Coronary Sinus Associated with Double Inlet Left Ventricle

H. Türkoğlu, T. Paker, B. Polat, A. Sarıoğlu, T. Sarıoğlu, A. Aytaç

In our Institute, one of 14 patients who underwent modified Fontan procedure due to various complex congenital anomalies between October 1985 and May 1990 was noted to have unroofed coronary sinus associated with left persistent superior vena cava (LPSVC) at surgery. This patient's pathology was double inlet left ventricle, transposition of great arteries, pulmonary stenosis and left persistent superior vena cava. LPSVC was known to drain into the CS. After the modified Fontan procedure, severe arterial hypoxia was noted. Cardiopulmonary bypass immediately recommenced. Unroofed CS was identified by retrograde probing through the CS orifice. Leaving the CS orifice in the left atrium and ligation of the LPSVC resulted in resolution of cyanosis. Postoperative period was uneventful. Unroofed CS may permit significant persistent right to left interatrial shunting after a modified Fontan procedure.

Interrupted Arcus Aorta: Report of 4 Cases

F. Öztunç, S. Özer, M. Saraçlar, S. Özkutlu, A. Bilgiç, Ş. Özme

Four cases with interrupted aortic arch diagnosed at the Hacettepe University, Department of Pediatric Cardiology have been presented. Two cases were classified as type A, one type B, and the last one as type C with respect to localisation of the interrupted portion. In all cases patent ductus aorteriosus was present as an associated lesion. In addition following anomalies were detected: ventricular septal defect in three, mitral valve abnormality in one, hypoplasia of the left ventricle in one, and double aortic arch in one patient.

Two patients died in the neonatal period prior to surgical intervention. The remaining two cases were evaluated as inoperable because of severe pulmonary hypertension and pulmonary vascular obstructive changes on admission.