

Summaries of Articles

Clinical Investigations

Prevalence Trend in Diabetes in Turkish Adults: a Cohort 5-Year Follow-up Study

A. Onat, B. Ökçün, D. Dursunoğlu, K. Dönmez, G. Kahraman, İ. Keleş, V. Sansoy

Of the cohort of the nationwide cardiac survey conducted in 1990 on a random sample of Turkish adult population, excluding 118 instances of death, 1094 surviving women and 1046 men were followed up with respect to presence of diabetes mellitus. The latter was defined to comprise known diabetics, those having a fasting blood glucose ≥ 130 mg/dl or a 2-hour postprandial glucose level exceeding 170 mg/dl. Glucose intolerance was recorded in 55 men and 78 women among whom this had newly developed in the preceding 5 years in 28 men and 29 women. The prevalence in the age group of 25-44 years of 1.5%, reached 8.6% and 13.1%, respectively, in men and women 45 years of age or older.

When two methods, namely adjustment for aging by 5 years and one that considered the age distribution of the cohort followed up, were applied the prevalence was found to have risen by 25% in men and by 15% in women as compared to the anticipated prevalence. This suggests that the number of diabetics in Turkey rose by 40.000 annually. - Among 82 persons noted as diabetics in 1990 and followed up, 6 died and 7 sustained a nonfatal coronary event subsequently. A relationship reaching statistical significance was not found between presence of diabetes and fatal and nonfatal coronary events, most likely due to the limited number of diabetics involved.

Angioplasty of the Proximal Left Anterior Descending Coronary Artery: Initial Success and Long-term Follow-up

S. Öztürk, M. Gülbaran, T. Gürmen, M. Öztürk

From October 1984 to December 1994, 95 patients (mean age 54 years; range 34-78; 82 men) underwent angioplasty for left anterior descending (LAD) coronary artery disease. The procedure was successful in 93,7 %. The clinical success was 89,7 %. Follow-up was obtained for a mean duration of 27,4 months (range 12 to 60 months). 68 patients could

be reviewed with a control angiography. The overall restenosis amounted to 39,7 % representing 27 cases; 16 of them had a redilatation and 7 a coronary artery bypass graft (CABG) operation. Four were treated medically. The survival rate was 95,7 %, freedom from cardiac death, myocardial infarction, CABG or repeat LAD artery angioplasty was 64,8 %.

Since one third of our cases were performed in the learning period of the clinic, we reached a lower success rate than some other institutions. We conclude that balloon coronary angioplasty alone presents a high rate of restenosis, and the need for revascularization is not seldom.

Acute Effect of Cigarette Smoking on Left Ventricular Functions in Healthy Nonsmoker Men

A. Altun, A. Gürçağan, B. Özkan, G. Özbay

The acute effects of cigarette smoking on left ventricular functions and hemodynamic parameters were assessed in 23 nonsmoker young healthy volunteers, aged 21-31 years. We recorded blood pressure, M-mode echocardiography of mitral and aortic valves, and pulsed-Doppler echocardiography of transmitral and transaortic blood flows before and immediately after smoking.

Heart rate significantly increased after smoking ($p=0.017$). Systolic and diastolic blood pressure remained unchanged. E time, E velocity-time integral, total mitral flow time, total mitral flow velocity-time integral and peak E/A ratio decreased 7 ms ($p=0.043$), 0.64 cm ($p=0.011$), 46.44 ms ($p=0.001$), 2.11 cm ($p=0.001$) and 0.04 ($p=0.035$), respectively. Atrial filling fraction increased by 0.03 ($p=0.041$). No significant difference existed between other variables. These findings showed that left ventricular systolic function remained unchanged and left ventricular diastolic function was impaired after smoking.

Cigarette smoking causes constriction of epicardial arteries and a decrease in coronary blood flow in subjects, despite an increase in myocardial oxygen demand. For this reason acute cigarette smoking significantly impairs the energy-consuming process of diastolic relaxation.

Radiofrequency Catheter Ablation of Ventricular Tachycardia in a Case of Arrhythmogenic Right Ventricular Dysplasia

C. Türkoğlu, K. Adalet, İ. Fıratlı, N. İncesoy, M. Öztürk

A 39-year old man was admitted to the hospital with sustained ventricular tachycardia. He had a history of syncope before admission and was diagnosed to have an arrhythmogenic right ventricular dysplasia. His ventricular tachycardia (VT) was refractory to six antiarrhythmic drugs alone or in combination. Radiofrequency (RF) current was used to ablate the VT. Sustained monomorphic ventricular tachycardia was induced with single ventricular extrastimuli during electrophysiologic study. Earliest endocardial activation was mapped to the anterolateral region of the right ventricular outflow tract. A RF energy was delivered at 50 W for a 60 second period. At the fifth second, a sinus rhythm was restored. A control electrophysiologic study demonstrated inability to induce a VT with 1 to 4 extrastimuli, burst and decremental pacing. During a follow-up of 2.5 months period without medical therapy intermittent Holter monitoring failed to reveal neither sustained nor nonsustained VT attack. VT was apparently eliminated successfully with RF ablation.

Ventricular Tachycardia Ablation

U. K. Tezcan, E. Diker, M. Özdemir, G. Heper, S. Çehreli, A. Şaşmaz, Ş. Korkmaz, S. Göksel

In this study are presented, six patients with ventricular tachycardia (VT) of different etiologies in who have been radiofrequency (RF) ablation in the attempted was electrophysiology (EP) laboratory at the Türkiye Yüksek İhtisas Hospital, Ankara, Turkey.

The mean age of the patients were 35.5 ± 10.2 (22-45) five of whom were male. Three of the six patients had normal echocardiographic and coronary angiographic findings. Two patients had idiopathic dilated cardiomyopathy and the remaining patient had sustained anterior myocardial infarction. Clinically, five patients had VTs of single morphology and one patient had uniform frequent ventricular premature beats (VPB). Sustained VT in five patients and nonsustained VT in one patient was induced in the EP laboratory. The induced VTs were morphologically same with the clinical VTs or VPBs. The patients were hemodynamically stable during VT, which was

a prerequisite for mapping and ablation. In three patients without structural heart disease, the idiopathic VTs were originating from the right ventricular outflow tract in two and from the left ventricle in the remaining one. In all three patients with structural heart disease the VTs were originating from the left ventricle. In idiopathic VTs of right ventricular origin, early endocardial activation and pace-mapping, in idiopathic VTs of left ventricular origin, P-potential mapping and for VTs that accompany organic heart disease, concealed entrainment in addition to early endocardial activation and pace-mapping were used for the purpose of tachycardia mapping. At the end of the mapping procedure RF energy with a frequency of 500 KHz, was applied to the target sites, between the distal electrode of the deflectable ablation catheters and skin electrode (patch). Except one patient with heart disease (prior myocardial infarction), ablation was successful in five of the six patients. The patient in whom RF ablation attempts were unsuccessful had a cardioverter-defibrillator implanted later on.

The patients who had successful RF ablation procedure were asymptomatic during a mean duration of six months follow-up. The patient who had frequent VPBs before ablation, had no VPBs noted in the Holter recordings three months later.

In conclusion, the RF catheter ablation therapy of ventricular tachycardias is effective and safe. This method may be the first choice of treatment especially in patients with idiopathic VTs.

Clinical Efficacy of Trimetazidine in Stable Angina Pectoris: A Double-Blind Placebo - Controlled Study

S. Aksöyek, M. Kabukçu, K. Övünç, G. Kabakcı, K. Aytemir, A. Oto

This study which aims to evaluate the effects of trimetazidine on optimization of medical therapy in patients with coronary artery disease and positive exercise test and effort angina in spite of medical therapy including calcium channel blockers, mononitrates and acetyl salisilic acid for a least two weeks consist of 21 patients. In a randomized fashion, patients received 20 mgr trimetazidine tid or placebo tablets for two weeks. The existence of coronary artery disease was shown with coronary angiography in every patients. In ten patients which received tri-

metazidine (Group I; consists of 9 male, 1 female patients, mean age 51 ± 8 years) occurrence of angina pectoris in a week fell significantly (3.0 ± 2.1 vs 7.2 ± 3.4 , $p<0.05$) with respect to pre-trimetazidine period. But in the placebo group (Group II; consists of 10 male, 1 female patients, mean age 54 ± 7 years) the difference was not significant (5.5 ± 3.5 angina pectoris occurrences in a week vs 7.6 ± 3.1 , $p>0.05$). In the first group, maximum exercise duration, double product at maximum heart rate and time needed for 1 mm ST depression were 7.1 ± 1.8 min vs 9.0 ± 2.5 min ($p>0.05$), 24962 ± 3459 vs 26180 ± 2630 ($p>0.05$) and 4.3 ± 1.5 min vs 7.9 ± 3.3 min ($p<0.01$) pretreatment and posttreatment respectively. In the second group the values were 7.6 ± 3.0 min vs 7.7 ± 2.1 min ($p>0.05$), 24615 ± 4415 vs 25238 ± 3012 ($p>0.05$) and 4.9 ± 1.9 min vs 5.6 ± 2.2 min ($p>0.05$). These results imply that trimetazidine could be an effective additive to other antianginal agents.

Oxidative Stress and Antioxidant Status in Unstable Angina Pectoris

Ö. Çolak, Ö. Alataş, N. Ata, A. Ünalır, M. İnal

This study was performed in order to evaluate, whether an oxidative injury occurred in unstable angina pectoris. The malondialdehyde (MDA) levels, an indicator of oxidative injury and the cellular antioxidant, reduced glutathione levels (GSH) and catalase activity were determined in 32 patients with unstable angina pectoris (UAP). Blood samples were obtained at the beginning and, end of the chest pain and 1 hour after the end of the chest pain. The MDA levels that show the lipid peroxidation due to the cellular oxidative injury, was significantly increased in both the end of the chest pain and 1 hour after the end of the chest pain samples, compared with the beginning of the chest pain ($p>0.05$, $p<0.001$, respectively). The erythrocyte GSH levels were significantly decreased both in the end of the chest pain and 1 hour after the end of the chest pain periods as compared with the beginning of the chest pain ($p<0.01$). There was no significant change in the catalase activities of the end of the chest pain and 1 hour after the end of the chest pain periods than those of the beginning of the chest pain.

In UAP patients, lipid peroxidation, the indicator of cellular injury increased and the antioxidant defence system diminished due to the ischemia, hypoxia and reperfusion of myocardium. These results may be regarded to reflect oxidative injury in UAP patients.

Effects of Left Atrial Plication for Giant Left Atrium on Left Ventricular Function and Postoperative Hemodynamics

B. H. Şirin, A. Baltarlı, A. Akçay, C. Özbek, N. Karahan, M. Şağban

Giant left atrium secondary to mitral valvular disease frequently produces postoperative hemodynamical and respiratory management problems due to compression on the neighboring tissues. In this study we investigated the effects of left atrial plication (LAP) particularly on left ventricular function and postoperative hemodynamics in the patients with mitral valvular disease and giant left atrium.

Twenty-seven patients with mitral valvular disease and left atrial dimension of 60 mm or over were included to the study. In addition to mitral valvular surgery, left atrial plication (LAP) according to Kawazoe's method was performed on 12 patients (LAP group); no surgical intervention to the giant left atrium was performed in the other 15 patients (non-LAP group). Two groups were compared with respect to hemodynamic findings in the early postoperative period: In LAP group, stroke volume index (STRVI) was significantly higher, diuretic requirement was significantly lower and sinus rhythm was more frequent (STRVI: 47 ± 6 and 38 ± 7 ml/m², furosemide requirement 24 ± 19 and 45 ± 28 mg per patient, sinus rhythm: 67% and 27% in LAP and non-LAP groups, respectively, $p<0.05$). Hence, LAP has a beneficial effect on left ventricular function and hemodynamic findings patients with giant left atrium.

Pseudoaneurysms Developing as a Complication of Catheterization

Atilla Aral, Bülent Kaya, Levent Yazıcıoğlu, Hakkı Akalın

Pseudoaneurysms which were either of traumatic or mycotic origin in the past, have been observed frequently as iatrogenic origin because of widespread use of catheterizations. They are considered as unstable lesions since they can lead to many different complications.

In the Cardiovascular Surgery Department of Ankara University Medical School, 27 pseudoaneurysms cases as a complication of catheterization underwent surgical intervention between June 1985 to June 1995. Primary repair was performed to all patients and patency of the arterial system was achieved. No

operative mortality was recorded. The most frequent postoperative complications were hematoma and seroma which were seen in 5 patients.

Although different treatment methods have been suggested and spontaneous thrombosis may occur in pseudoaneurysms, we suggest that surgical intervention should be preferred since these are unstable lesion and surgical intervention can be performed with low mortality and morbidity.

Evaluation of Efficacy of the Transtelephonic Electrocardiographic Monitoring in Pediatric Patients

N. K. Tokel, A. Çeliker, M. K. Lenk, S. Özer, Ş. Özme

Evaluation of patients with symptoms such as palpitation, chest pain and syncope are difficult using standard studies, if the episodes are brief and infrequent. Transtelephonic electrocardiographic recorders were provided for 49 patients with suspected arrhythmic episodes and/or pacemaker. Five patients had previously documented arrhythmia such as supraventricular tachycardia. Three of them were being treated by anti-arrhythmic drugs. Over a mean period of 21 days, thirty of 49 patients (61%) provided transmissions during typical symptoms. Although SVT was diagnosed in three, premature atrial contraction in 2 and AV dissociation in one patients on a single 24-hour Holter monitorization, SVT was found in 5 patients, sinus tachycardia in ten, wide-QRS tachycardia and nodal bradycardia in one patient. Transtelephonic monitoring was more effective than a single Holter monitorization in the diagnosis of SVT. Normal ECG transmitted during a typical symptomatic episode excluded cardiac arrhythmias. Both methods were efficient in evaluation of normal pacemaker function.

Detachable Coil Occlusion of Patent Ductus Arteriosus in Children

Ü. Aydoğan, B. Tanmaz, T. Ertuğrul, Y. İ. Ayhan

We report two patients with patent ductus arteriosus in whom transcatheter complete occlusion was achieved with retrievable coils.

Review

An Effective Transmitter: Nitric Oxide

N. Gültekin, M. Ersanlı, E. Küçükateş

The vascular endothelium is an active participant in the regulation of vascular tone and blood flow. Its dysfunction leads to a reduction in the synthesis and release or an excessive degradation of nitric oxide (NO). NO, an endothelium-derived relaxing factor (EDRF) is released by different types of cells of the body. Recently the results of many experiments and clinical studies confirm that NO is a primary physiological transmitter with a wide spectrum of physiological and pathophysiological effects. NO is synthesized in the endothelial cells from the amino L-arginine by nitric oxide synthases with stimulation by acetylcholine, bradykinin, substance P, thrombin, ADP, ATP, calcium, thromboxane A₂ histamine, endothelin and aggregating platelets. Its release can be altered also by mechanical forces such as shear stress, blood pressure and pulsatile stretch. NO, by relaxing vascular smooth muscle by activating guanylate cyclase is responsible for the vasodilator tone that is essential for the regulation of blood pressure. It also contributes to the control of the function of platelets and leukocytes. A deficiency in the activity of NO may be the mechanism of diminished via dilation in patients with atherosclerosis, so ischemic heart disease, hypoxia, heart failure, diabetes mellitus and hypertension. Organic nitrates which are metabolized to NO or S-nitrosothiol at cellular level induce vasodilatation by activating guanylate cyclase, but they have no effect on the very small vessels such as endogenous NO. Future experiments and clinical studies will determine the place and the effectiveness of new NO donors and NO-synthase inhibitors in preventing atherosclerosis, ischemic heart disease, hypertension, platelet dysfunction and other diseases.