

Summaries of Articles

Rates of Death and of Coronary Events in the Turkish Adult Survey: 5-year Follow-up of the Cohort

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Two-thirds of the original cohort residing in various geographic regions of Turkey who had been studied 5 years previously was followed up by physical examination and an ECG recording at rest. Rates of death, coronary heart disease (CHD) death, and new coronary events were studied in these 1644 adults (comprising 844 women) initially aged 20 years or over. New coronary events were defined to include fatal and nonfatal myocardial infarction, acute myocardial ischemia and newly developed stable angina with or without associated myocardial ischemia.

Overall annual death rate was 8.9 per 1000 adults reflecting the observed 96 deaths which was in agreement with other estimates. CHD deaths numbered 41 (of which 19 in women) representing 3.8 per 1000 adults per annum and were found high in women. Nonfatal coronary events were registered in 53 adults (including 19 in women) and, when added to fatal events, resulted in 28 overall new coronary events in women and 49 in men (corresponding annual rates per 1000 adults being 5.2 and 9, respectively). Rates in women appeared high. Coronary deaths observed in the Aegean, Mediterranean and Southeast Anatolian regions were low whereas those in the East Anatolia and Black Sea regions were high. Among subjects dying from CHD and having had new coronary events, hypertension was the major associated risk factor. Smoking was the most commonly accompanying risk factor in men, obesity in women, each exhibiting a reverse trend in the other gender.

Based on this study and on the data obtained from the Marmara region surveyed a year ago, it may be concluded that 160.000 adult men and 120.000 women die each year in Turkey. These comprise 66.000 coronary deaths in men and 61.000 in women annually. Among these deaths 70.000 were considered to be fatal coronary events which, when included to

160.000 nonfatal ones, lead to an estimated annual 230.000 new coronary events among Turks.

Congenital Isolated Apical Ventricular Septal Defects

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The diagnosis of apical ventricular septal defects is difficult and the ratio of spontaneous closure is not well known. At the Ankara University Pediatric Cardiology Department, between the years 1992-1995, 20 patients were identified by colour-flow Doppler imaging as having a small defect at the apical portion of the ventricular septum. The age range was 1 day to 13 years. All patients were asymptomatic with normal telecardiograms and electrocardiograms. There was a grade 2-3 / 6, short or pansystolic murmur at the apex or closer to the apex of the heart, distal to the moderator band. These defects were difficult to image and required specific angulation of the transducer. Of the 15 patients who had follow-up examinations, 3 months to 3,5 years, there was spontaneous closure in five (33 %).

To our knowledge, this report is the largest series of isolated apical VSD. In our experience, color-flow imaging is more sensitive in detecting a small apical VSD. Although the closure of apical VSD is not the rule, the prognosis is excellent.

Open Heart Surgery in Patients Older Than 70 Years: A Two-Years' Experience

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Open heart surgery in elderly patients is carrying a higher risk related to decreased vital organ reserves. Between May 1993 and May 1995, 41 patients older than 70 years (mean age 73.4 years) underwent open heart surgery. There were 33 men and 9 women. Twenty-six (62%) were patients urgently or emergently operated on. Coronary artery bypass grafting was the most commonly performed operation with 38 cases, including nine combined procedures. 87% of the coronary patients received an internal mam-

mary artery graft. The overall operative mortality rate was 14.3% (6/42), 6.9% in isolated coronary artery bypass grafting. In 20 patients (48%) complications were seen, mostly cardiac arrhythmias. There were no late deaths. After a mean follow-up period of ten months (ranging from 1 to 25) the operative survivors performed very well, with 89% (32/36) in New York Heart Association class I or II, and the remaining in class III. Despite its increased early mortality and morbidity rates, open heart surgery in the elderly patient strongly deserves consideration with its favorable late results.

Transvenous Selective Coronary Angiography via Ventricular Septal Defect in Tetralogy of Fallot

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In order to determine the applicability of a new technique, we performed transvenous selective coronary angiography via ventricular septal defect in 62 patients with tetralogy of Fallot between April 1994 and July 1995. The patients' age ranged from 1 to 13 years (mean 3.16 ± 2.17), and weight ranged from 6.7 to 32 kg (mean 12 ± 4.44). 5.2 or 6F 4 cm angled "soft type" right Judkins catheter (JR4) and hydrophilic guide-wire were used for entering the aorta from the right ventricle via a sheath placed in the femoral vein. Right coronary artery was catheterized with 5.2-7F JR4 catheters and left coronary artery with 5.2-7F JR4 or 5.2-7F internal mammary artery (LIMA) catheters. The right coronary arteriography was successfully performed in all, and left coronary arteriography was successful in (56.95 %) cases. Total catheterization time (for diagnosis of tetralogy of Fallot + selective coronary arteriography) ranged from 15 to 65 (mean 34.4 ± 14.8) and fluoroscopy time varied from 3 to 29.2 (mean 11.8 ± 6.2) minutes. For the catheterization of the right coronary artery 6F JR4, and for the catheterization of the left coronary artery 7F LIMA catheter has proved more successful. During entrance from the right ventricle to the aorta transient right bundle branch block was observed in 2 patients and during coronary angiography, ST changes occurred in 7 patients and transient bradycardia occurred in 3 patients. We conclude that transvenous selective coro-

nary angiography via ventricular septal defect is a safe and easily applicable method for infants and children with tetralogy of Fallot.

Incidence of Idiopathic Long QT Syndrome in Children With Congenital Deafness

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Long QT syndrome is characterized by a prolongation in the QT interval, associated with a high risk for syncope and sudden death. Jervell and Lange-Nielsen had initially described it in association with congenital deafness. We have investigated the incidence of this syndrome in a school for deaf children; 350 children with an age range of 6-19 were evaluated by ECG. Corrected QT interval was calculated by Bazett's formula. Eight children with a QTc interval greater than 0.44 sec were further studied: Cardiac examination, repeated ECGs (3 times), Holter monitoring, echocardiography and exercise tests were performed for these 8 children. The families were assessed in regard to a history of syncope and deafness, as well as a lengthened QTc interval. Two girls, aged 14 and 15, were diagnosed to have long QT syndrome according to Schwartz criteria (0.57 % among the 350 children). The first case had two major (QTc=483 sec and history of syncopal attack) plus one minor criteria (congenital deafness), the second girl had two major (QTc= 613 sec and family members with LQTS) plus one minor criteria (congenital deafness). Prophylactic beta blocker therapy was started. This syndrome should be sought for in children with syncope or a family history of it, especially in children with loss of hearing.

Echocardiographic Evaluation of Pulmonary Artery and Descending Aorta Dimensions in Healthy Children

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Diameters of the main branches of the pulmonary arteries (PA) and descending aorta were studied echocardiographically in 226 normal healthy newborns, infants and children ranging in weight from 1870 gr - 67 kg (age 4 days to 16 years, mean 5.8). The PA diameter was measured by 2- dimensional echocar-

diography from the suprasternal notch, and the descending aortic diameter from the subcostal view. McGoon ratio was calculated from the echocardiographic measurements. Children were divided in eight groups according to age. Because no difference was noted between the measurements of girls and boys, both were presented together. Regression equations and correlation coefficients of normal values were determined with age, weight and body surface area. Age related nomograms and confidence limits (95 %) were presented. Regression analysis of PA diameter on age and body surface area showed that body surface area correlated best with the diameters of the PA and descending aorta and this disclosed a best fit with logarithmic function. The established nomograms for PA diameters and McGoon ratio will serve as a basis for evaluation in congenital heart disease.

Efficacy and Safety of Intravenous Diltiazem vs. Verapamil in the Acute Treatment of Atrial Fibrillation

H. Tezcan, M. Okucu, A.S. Fak, A. Oktay

This study evaluates the effectiveness and safety of intravenous diltiazem and verapamil for the acute treatment of atrial fibrillation (AF). A double - blind, parallel, randomized and comparative study protocol was used. The study involved 24 patients with AF, a ventricular rate >120 beats/min and systolic blood pressure >90 mmHg. Patients were randomized to receive either intravenous diltiazem (n=12) 0.35 mg/kg (maximum 25 mg) or intravenous verapamil (n=12) 0.15 mg/kg (maximum 10 mg). Therapeutic response was defined as a 20 % decrease in ventricular rate from baseline, a heart rate below 100/min. and conversion to sinus rhythm. Eleven of 12 patients (92 %) in diltiazem group and 12 of 12 (100 %) in verapamil group responded ($p>0.05$). The mean time to achieve response was 2.7 ± 1 minutes for diltiazem and 3.9 ± 5 minutes for verapamil ($p>0.05$). The mean reduction in heart rate from baseline was % 35 with verapamil and % 24 with diltiazem. Verapamil reduced systolic blood pressure from baseline by 24 % and diastolic blood pressure by 20 %, diltiazem by 11 % and 13 %, respectively. Symptomatic hypotension was observed in 4 patients in verapamil group and none in diltiazem group ($p<0.05$). It is

concluded that intravenous diltiazem and verapamil are equally effective in reducing the heart rate and diltiazem seems to be a safer drug to be used for the acute treatment of AF, for symptomatic hypotension is seen more frequently with verapamil.

Elective Percutaneous Transluminal Coronary Angioplasty in Acute Myocardial Infarction

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Percutaneous transluminal coronary angioplasty (PTCA) was performed in 102 patients with a diagnosis of acute myocardial infarction (AMI) in whom myocardial ischemia occurred spontaneously during hospitalization or at the time of predischage submaximal exercise testing and in whom the infarct-related artery (IRA) anatomies were suitable following coronary angiography (CA).

In 94 cases (92 %), the procedure was favorable while the results were unsuccessful in 8 of the patients (8 %) in whom the lesion could not be crossed with guide-wire in 3 and effective patency could not be achieved in 1 (4 %); 2 deaths (2 %) occurred during the procedure and 2 cases (2 %) underwent emergency coronary artery bypass grafting surgery (CABG); there was no reinfarction. As minor complications, 7 intimal dissections (7 %) 4 of which were major ones, 1 side-branch occlusion (1 %) were seen. Hematoma occurred at the puncture site in 7 of the cases (7 %). IRA patency was demonstrated in 42 of 62 patients (68 %) in the 6 month control CA. Repeat angioplasty was successful in 15 of 20 cases (75 %) in whom restenosis occurred. A total of 8 patients (13 %), 3 of the repeat cases together with 5 cases in whom sufficient dilatation could not be achieved, underwent elective CABG.

In conclusion, compared with other strategies such as primary, immediate, rescue and delayed PTCA in AMI in the literature, PTCA in elective circumstances results in higher success rate in cases who have spontaneous or exercise-induced ischemia and suitable coronary artery anatomy, when assessed with respect to achieving effective IRA patency or complications that may ensue. IRA patency is maintained

in most of patients in the 6-month-control CA and replasty can be performed again with an important rate of success in cases in whom restenosis occurs.

Cardiac Involvement in Ankylosing Spondylitis: Clinical, Echocardiographic and Signal-averaged ECG Findings

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Heart disease is a well-recognized complication of ankylosing spondylitis (AS). The most characteristic lesions are aortic incompetence and conduction defects. On the other hand diastolic and systolic dysfunction is not widely recognized, and especially the presence of late-potentials detected by signal-averaged ECG has not been studied. This study assesses the prevalence of both systolic and diastolic LV dysfunction, the presence of late-potentials and other cardiac abnormalities in patients with AS who have no clinical cardiac manifestations. Twenty eight patients (25 men, 3 women, mean age 31.2 ± 5) and 30 healthy controls (25 men, 5 women, mean age 34.4 ± 11) underwent clinical examination, electrocardiography, complete echocardiographic examination and signal-averaged electrocardiography. Mean disease duration was 9 ± 2 years.

On echocardiographic examination LV systolic and diastolic volumes were higher and ejection fraction was lower for patients with AS. Ten patients (35.7%) had abnormal relaxation, and 2 (7.1%) had a restrictive filling pattern. Mild aortic regurgitation and minimal mitral and tricuspid regurgitation were seen in 1, 2 and 4 patients, respectively. On signal-averaged ECG 3 (10.7 %) patients had late-potentials. There was no correlation between LV dysfunction, disease duration and severity and late-potentials. It is concluded that ventricular diastolic and systolic dysfunction occurs frequently and the incidence of ventricular late-potentials seems to be higher in patients with AS. However, the clinical implications of these findings need to be clarified.

The Effects of ACE Inhibitor on Glucose

Tolerance and Insulin Sensitivity in Patients with Hypertension

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The probable role of insulin resistance in essential hypertension (EH) and the effects of ACE inhibitors on glucose metabolism (including on the insulin sensitivity) were studied in 15 persons. Nine were hypertensive, 6 were normotensive and nonobese, nondiabetic persons. The two groups exhibited no significant difference regarding age, sex and body mass index. Peripheral insulin sensitivity of both groups was detected by "euglycemic hyperinsulinemic clamp technique" which is generally accepted as first-choice among alternative techniques. In the hypertensive group the mean metabolized glucose amount (M1), an indirect sign of insulin sensitivity, was found significantly low compared to the normotensive control group, indicating resistance to insulin in essential hypertensive patients, (3.7 ± 0.6 vs 6.9 ± 1.5 mg/kg/min) A long-acting ACE inhibitor (ramipril) was used only in the hypertensive group for 12 weeks and "euglycemic hyperinsulinemic clamp technique" was repeated. M value (M2, 5.3 ± 0.9 mg/kg/min) was significantly higher than the pretreatment value.

These findings suggested that insulin resistance has a role in the etiopathogenesis of EH. Furthermore, we concluded that the relationship between EH and insulin resistance is independent of obesity and impaired glucose tolerance and that ACE inhibitors can decrease insulin resistance and improve insulin sensitivity.

Quadricuspid Aortic Valve Diagnosed by Doppler Echocardiography: Report of Two Cases and Review of the Literature

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Quadricuspid aortic valve is a rare congenital anomaly which is usually diagnosed at surgery or, most often, at autopsy. Echocardiography alone is shown to be helpful in diagnosis and follow-up. We report two cases detected non-invasively by Doppler echocardiography.