

Summaries of Articles

Investigation

Physical Activity and its Effect on Other Risk Factors in Turkish Adults

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The distribution of intensity of physical activity and its relationship to major coronary risk factors were studied in a representative sample of the Turkish adult population comprising 3660 persons aged 20 years and over. Participants were interviewed by a questionnaire to categorize them into four grades of physical activity in a combined assessment of both work and leisure activity. Grade 3 or 4 activity was exhibited by 53 % of Turkish men as compared to 36 % of women. Based on a point-score system men were evaluated to show 11 % higher physical activity than women (2.57 v.s. 2.30 points).

In assessing the effect of physical activity on other risk factors, age-adjustment was performed by utilizing identical weights of the five age groups (20-69 years) in each category of activity, with separate weighting for men and women. It was thus noted that the serum total cholesterol concentration was inversely related to physical activity: as activity grade increased from 1 to 4, mean cholesterol levels declined in men from 185 to 161 mg/dl (by a mean of 7.9 mg/dl per grade) and in women from 184 to 164 mg/dl (by an average 6.5 mg/dl for each activity grade).

Physical activity did not appear to affect the percentage of cigarette smokers, nor the body mass index (BMI) in women. However, BMI in men exhibited a mean decline of 0.4 kg/m² for each rising grade of activity. Between individuals of lowest and highest grades of activity, age-adjusted mean systolic blood pressure diminished marginally by 3.4 mmHg in men and 2.3 mmHg in women. Thus the major favorable effect of physical activity in the Turkish sample population was on the serum cholesterol levels.

Determination of Mitral Flow Velocity by Pulsed Doppler Echocardiography During Exercise: Comparison with ECG Exercise testing

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Exercise-induced myocardial ischemia results in both diastolic and systolic left ventricular (LV) dysfunction. To determine the utility of Doppler assessment of LV diastolic function during exercise, 12 normal subjects and 47 patients (one-vessel disease (VD), n=14; 2 VD, n=16; 3 VD, n=17) underwent exercise pulsed Doppler echocardiography, including measurement of mitral flow velocity by pulsed Doppler and simultaneous electrocardiography (ECG) exercise testing. The mean mitral flow velocity was measured as the integrated area under the LV diastolic inflow Doppler spectral display. The change in mean mitral flow velocity from resting to immediate postexercise was compared among 2 patient groups. The percent increase in mean mitral flow velocity was 101 % (± 19) for controls and 38 % (± 13) for patients with coronary artery disease ($p < 0.005$). An increase in mean mitral flow velocity with exercise of > 50 % occurred in 11 of 12 nonischemic control patients. On the other hand, an increase in mean velocity of < 50 % occurred in 42 of 47 patients with coronary artery disease (1VD 11/16, 79 %; 2 VD 14/16, 88 %, 3VD 17/16, 94 %). An increase in mean mitral flow velocity of < 50 % showed a sensitivity of 89 %, and a specificity of 92 % in detecting patients with coronary artery disease. On the contrary, ECG exercise testing showed a sensitivity of 81 % and a specificity of 75 % in this study group.

Thus, the results of this study indicate that Doppler assessment of percent change in the mean velocity of mitral flow during exercise is a useful indicator of exercise-induced myocardial ischemia.

Anomalies of Left Internal Mammalian Arteries

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Left internal mammalian artery (IMA), is frequently used in coronary artery bypass graft surgery. Anomalies of this artery are important in the technique

and results of the surgery. We performed angiograms to 52 left IMA and found anomalies in 11 of them (% 21). Four of these were related to a common origin (% 7.8), 3 consisted of tortuosity (% 5.8). Large side branches existed in 2 arteries (% 3.8), atypical course in 1 (% 1.9) and distal anastomosis with right IMA was noted in one (% 1.9). There were no complications during angiography. Because anomalies of left IMA are relatively common, left IMA angiography, an easy and safe method to perform, needs to be done for all candidates of coronary artery bypass surgery.

Effect of Propafenone on Chronic Ventricular Arrhythmias

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We examined the efficacy of oral propafenone in patients with chronic ventricular arrhythmia by 24-hour Holter monitoring. Nine of the subjects were male and 10 female, with a mean age of 51 (ranging from 30 to 70). 13 of the cases had nonsustained ventricular tachycardia (VT), 6 had only ventricular premature beats (VPB).

Propafenone therapy was started 450 mg/day. In non-responders, the dosage was increased stepwise up to 900 mg/day, after ECG evaluation. Holter monitoring was repeated on the 15th day of treatment.

The percentage of cases who responded to therapy well was 74, 75, 92 and 79 in simple VPB, couplet, VT and total VPB groups, respectively. As a result, the mean reduction in simple VPBs, couplets, VTs and total VPBs were 73 %, 52 %, 99.9 % and 75 %, respectively ($p < 0.01$). There were significant prolongations in P-R and QRS intervals during therapy ($p < 0.01$).

Cardiac complications (ventricular fibrillation, severe sinus arrest and nonsustained VT) were detected in 3 (16 %) and noncardiac complication (dizziness) in 2 (11 %) patients.

We concluded that propafenone at a dose of 450-900 mg/day is an effective and tolerated antiarrhythmic drug in chronic ventricular arrhythmia cases. However, due to its potential risk of serious cardiac side effects, until results of more comprehensive investigations are available should be reserved for use in life-threatening arrhythmias.

Detection of Coronary Artery Disease in Women by Exercise Thallium-201 Myocardial Scintigraphy

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To determine the diagnostic value of planar exercise thallium scintigraphy (ExTS) for detecting coronary artery disease (CAD) in women, ExTS results were compared with the findings of coronary arteriography in 63 cases.

The study was carried out retrospectively in 63 women ranging in age from 23 to 64 (mean 51 ± 10). Among these, coronary arteries were found to be normal in 38 and CAD was diagnosed in 25. The ExTS showed exercise-induced or fixed defects in 5 cases with normal coronary arteries and in 24 cases with CAD. Thus the sensitivity of ExTS was found to be 96 %, specificity 87 %, positive predictive value 83 % and negative predictive value 97 %.

It is concluded that ExTS has a clinically useful level of sensitivity and specificity for the detection of CAD in women.

Effects of Transient Myocardial Ischemia on the Signal-averaged Electrocardiogram

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The relation between myocardial ischemia and signal-averaged electrocardiogram (SAECG) was investigated in 59 patients with documented coronary artery disease. Transient myocardial ischemic attacks (TMIA, $ST > 1$ mm for > 3 minute) were observed during 3-channel Holter recordings. TMIA's mean duration and degree of ST changes were 15 ± 7 min and 2.4 ± 0.9 mm. SAECGs were obtained from Holter tapes at baseline and during TMIA's and analyzed at 25 to 250 Hz and 40 to 250 Hz for late potential detection, and also analysed at spectrocardiography, a new technique for spectral turbulence analysis. All patients had SAECG with noise level ≤ 1.0 μ V at 25 Hz and ≤ 0.8 μ V at 40 Hz and with the difference in noise level between baseline SAECGs and SAECGs at TMIA ≤ 0.2 to 0.3 μ V.

Comparison between SAECGs at baseline and at the peak of TMIA's revealed no significant differences in the incidence of late potentials [20 % (12/59)-19 % (11/59)] and spectral turbulences [24 % (14/59)-27 % (16/59)].

These data suggest that electrophysiologic changes induced by transient myocardial ischemia may not provide the anatomic electrophysiologic substrate for reentrant ventricular tachycardia, as reflected by late potentials and spectral turbulence of the SAECG.

Comparison Between Spectral Turbulence Analysis and Late Potential Analysis of Signal-Averaged ECG in Anterior and Inferior Myocardial Infarction

O. Sancaktar, S. Aksöyek, Ö. Kozan, A.R. Kazazoğlu, T. Okay, M. Özdemir

Patients with inferior (I) myocardial infarction (MI) more frequently have late potentials (LP) than those with anterior (A) MI, since LP in the signal-averaged (SA) ECG may not be detected if abnormal ventricular regions are activated early during the QRS as in AMI. It was postulated that abnormal ventricular regions that are substrate for reentrant ventricular tachycardia cause transient changes in the velocity of the depolarization wave front resulting in increased spectral turbulence within the QRS. We compared spectral turbulence analysis (spectral turbulence ≥ 10 in any of the three X,Y,Z leads) with LP analysis (RMS <25 uV at 25 Hz+RMS <16 uV at 40 Hz) of the SAECG recorded in 84 pts with AMI and 86 pts with IMI. The incidence of LP was 17 % in AMI and 30 % in IMI while abnormal STA occurred in 42 % of AMI and 21 % of IMI. The two techniques were concordant in 86 % of IMI but in only 68 % of AMI ($p<0.?$).

This study showed that AMI results in a high incidence of spectral turbulence reflecting abnormal myocardial conduction that is not usually detected as LP in the SAECG.

Results of Mitral Valve Reconstruction

S. Dağsalı, A. Kanca, T. Tezel, E. Demiray, H. Tezel, C. Alhan, M. Demirtaş

Between March 1986, and July 1990, a total of 17 patients underwent repair of the mitral valve. Mitral valve replacement was performed in 2 cases in which significant residual regurgitation was apparent on testing the valve after repair. Anterior leaflet resection was performed in one patient, anteroposterior resection in two. Ten patients received a ring annuloplasty, 3 a Carpentier annuloplasty ring, 6 patients a Duran ring, and 1 a Puig-Massana ring. Three patients died in the hospital (17.6 %): two after conservative operations and one after mitral valve replace-

ment. Follow-up was 3 to 36 months (mean 17 months). Doppler echocardiographic studies were performed in 13 patients. Ten of them had no signs of mitral regurgitation or stenosis, two had moderate mitral regurgitation and one mitral stenosis. Clinical and echocardiographic assessment indicate that mitral valve repair produces good symptomatic improvement and a normal or nearly normal pattern of left ventricular function.

Intraaortic Balloon Pumping in Open Heart Surgery

M.S. Çiçek, U. Demirkılıç, H. Tatar, Ö. Öztürk, H. Işıklar

Between March 1988 and October 1990, intraaortic balloon pumping (IABP) was attempted in 52 cardiac surgical patients. The indications for IABP consisted of unsuccessful discontinuation of cardiopulmonary bypass (27 %), postoperative low cardiac output or hemodynamic instability (71 %), preoperative unstable angina pectoris unresponsive to pharmacological treatment (2 %). Immediate mortality was 28 %. The overall survival was 63 %. Complications related to IABP occurred in 12 patients (28 %).

Though originally developed to assist in the nonoperative management of complications of ischemic heart disease, IABP assistance is a valuable technique in the salvage of critically ill patients with severe pump failure after an open heart operation.

Partial Atrioventricular Canal Defect and Surgical Treatment

H. Türkoğlu, T. Paker, A. Akçevin, S. Erentürk, A. Sarıoğlu

At the Department of Cardiac Surgery of İstanbul University Cardiology Institute, twenty-eight patients with atrioventricular canal defect underwent open heart surgery for repair of partial atrioventricular canal defect. Twenty-five patients had either moderate or severe mitral insufficiency prior to operation. The mitral cleft in the anterior leaflet was repaired in each patient in whom the valve had insufficiency. The atrial septal defect was closed with pericardial patch and the coronary sinus was left in the left atrium in twenty-five patients and in the right atrium in three patients.

Postoperatively, only three cases with rhythm disturbance were noted among 28 patients and a permanent pacemaker had to be implanted in one patient due to complete A-V block.

All the other patients were found to be in class I according to New York Heart Association classification. Five patients had mild mitral insufficiency and the remaining twenty-three had competent mitral valve. These data demonstrate that excellent results from repair of partial atrioventricular canal can be obtained.

Atrial Septal Aneurysms

G. Tayyareci, T. Tezel, A. Narin, H. Tezel, K. Yeşilçimen

We have detected atrial septal aneurysms in 9 patients examined by two-dimensional echocardiography for various reasons. The lesion was an isolated finding in four cases while atrial septal defect, ventricular septal defect, mitral valve prolapse and tricuspid prolapse were associated findings in 6 cases. The whole septum was aneurysmatic in three of the cases while aneurysms were localized to fossa ovalis in six of them. In two instances right-left atrial movements were noted related to the cardiac cycle.

ASA's have to be differentiated from atrial tumors which may lead to similar complications.

Reviews

Planar Thallium-201 Scintigraphy

V. Sansoy, D. Güzelsoy

The last ten years have seen a revolution in methods of cardiac noninvasive imaging techniques. Scintigraphic methods have been applied widely, impacting on the diagnosis and evaluation of all forms of cardiac illness and integrated into the cardiac practice. Since 1975 thallium-201 has been widely employed as a radionuclide agent for the assessment of regional myocardial perfusion. Quantitative analysis of planar thallium scintigraphy provides a high sensitivity and specificity for the detection of CAD. In addition planar thallium-201 imaging provides very important prognostic information in different clinical situations. Although single photon emission computerized tomography (SPECT) has some theoretical advantages over planar imaging, the suboptimal specificity of SPECT thallium-201 imaging is a major practical problem. High quality planar thallium-201 imaging still has an important role in clinical cardiology today.

Cardiac Amyloidosis

Ç. Gökçe, Ö. Gökçe, E.S. Arısoy, A.E Arısoy, A. Demir, E. Dönder, İ.N. Arslan

Cardiac amyloidosis is a disease subjected to extensive investigation in recent years, with important progress being made, particularly with respect to its diagnosis. In this review, advances concerning cardiac amyloidosis, which is possibly not infrequent in Turkey, are summarized and various diagnostic approaches are discussed in the light of observations realized at Fırat University Hospital, Elazığ, with the hope of increasing the interest in this serious disease.

Case Reports

Modified Fontan Operation for Univentricular Hearts With Left Atrioventricular Valve Atresia: An alternative technique of resection of the atria

T. Paker, T. Sarıoğlu, H. Türkoğlu, A. Akçevin, M.S. Bilal, A. Sarıoğlu, A. Aytaç

Between June 1988 and December 1990, four patients underwent atrial resection and the modified Fontan-Kreutzer operation for univentricular atrioventricular connection with left-sided atrioventricular connection with left-sided atrioventricular valve atresia. Also anomalous systemic venous connections were encountered in combination in 3 of them. Pulmonary stenosis was infundibular in one and both valvular and infection and sepsis on the 12th postoperative day. The other 3 are in NYHA class I during the follow-up periods of 24, 20 and 1 months, respectively.

Relief of Acute Mitral Regurgitation due to Unstable Angina by Coronary Angioplasty

O. Ergene, S. Aksöyek, T. Okay, M. Özdemir

A 63-year-old woman was admitted with unstable angina pectoris and acute mitral regurgitation accompanying the ischemic attack. Despite intensive medical treatment chest pain could not be relieved. Urgent PTCA was done to the culprit lesion in the left circumflex artery. Immediately after PTCA chest pain and acoustic, echocardiographic and angiographic evidence of mitral regurgitation disappeared. PTCA to the culprit lesion in ischemic mitral regurgitation may be life saving because long-lasting ischemia to the papillary muscle may cause rupture.