Summaries of Articles

Investigations

Physical Activity, Levels Unchanged Past 8 Years in Turkish Adults, Prove to be an Independent Determinant of Diastolic Pressure, Waist-to-hip Ratio, Blood Glucose and Cholesterol

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At an 8-year follow-up of the original cohort of the Turkish Adult Risk Factor Study, physical inactivity was assessed in 1838 subjects (mean age 48.6±14), and trends were studied after stratifying for sex and age groups. In an interview by questionnaire, participants were characterized into 4 grades of physical activity in a combined assessment of both work and leisure activity. From a mean of 2.64 grades in men and 2.38 grades in women, physical declined to 2.46 and 2.17 grades, respectively. In order to assess the overall change at constant age, an allowance was made for 8 years of aging in mean physical activity grade by -0.17 grade both in men and women. Overall net mean activity grade of the sample population remained essentially unchanged over 8 years, since a net diminution by 2% among women was not considered significant.

Among 2566 adults comprising the new as well as the original cohort, physical activity grade was noted in multivariate analysis to be significantly and independently associated with waist-to-hip ratio, diastolic blood pressure, blood glucose in both genders, and with total cholesterol concentrations in men. Physical inactivity did not prove to be a significant independent marker of coronary heart disease, though a trend was apparent among women. In conclusion, physical activity should be useful in combatting diastolic hypertension, central obesity, glucose intolerance and hypercholesterolemia also among Turks.

Key words: Coronary heart disease, epidemiology, physical inactivity, risk factors

Assessment of the Efficacy of Secondary Prevention in Patients with Coronary Artery Disease

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The aim of study was to assess the efficacy of secondary prevention in patients with coronary artery disease in a cardiology center, investigating prevalance of modifiable risk factors a year after hospitalisation.

Two-hundred and seventy-three consecutive patients (age 28-70 years, mean age: 56±10, 80% men) hospitalised in 1996, were identified retrospectively with the following diagnosis: AMI (85 patients), PTCA (96 patients) and CABG (92 patients). Data collection was conducted in two stages: 1) A retrospective review of hospital medical records 2) An interview and examination of the patients one year later. History of cigarette smoking, height, weight, blood pressure and lipid measurements, physical activity status, global cardiac risk and medications at discharge were abstracted from the hospital records, and the same information and measurements were determined at least one year (mean follow-up time: 16±2 months) after the index event or intervention.

At the time of the index event, 55% of patients smoked cigarettes, 40% were overweight (Body mass index ≥ 30kg/m^2), 43% had elevated systolic (≥ 140 mm Hg), 26% had elevated diastolic (≥ 90 mm Hg) blood pressure, 61% had high low density lipoprotein cholesterol (LDL-C) ≥ 130 mg/dL.

At the time of interview, done at least a year after the index event, 19% of the patients smoked, 37% were overweight, 45% had high systolic (≥ 140 mm Hg), 33% had high diastolic (≥ 90 mm Hg) blood pressure, LDL-C was ≥ 130 mg/dl in 38%, 15% of patients were not on lipid lowering drugs although indicated according to national guidelines. In patients on lipid lowering drugs, LDL-C was found

to be > 130 mg/dl in 49%. Fortyseven percent of patients reported that they do not exercise regularly. Secondary prevention efforts in terms of achieving target LDL-C level were found to be most succesful in PTCA patients.

At interview, 93% of all patients were on Aspirin, of patients with previous MI, 14% and 19% were on beta-blockers and ACE-inhibitors, respectively. Global risk was found to be diminished one level in 23% of all patients.

It is concluded that, there is a considerable potential for physicians to further improve the implementation of secondary prevention of coronary artery disease, even in a cardiology clinic, where the education and knowledge of physicians regarding coronary risk reduction are assumed to be highest.

Key words: Preventive cardiology, secondary prevention, coronary risk reduction

Multiplane Transesophageal Echocardiographic Characteristics of Mitral Paraprosthetic Regurgitation and its Association with Hemolysis

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Paravalvular regurgitation (PR) is an uncommon but potentially serious complication of valve replacement operations. This study was designed to determine the relation of PR with the presence and degree of hemolysis and also the effect of flow characteristics on hemolysis. The study group consisted of 45 patients with St. Jude type valve prosthesis in mitral position who were referred to our transesophageal echocardiography (TEE) laboratory with the suspicion of prosthetic valve dysfunction. Patients with systemic illness were excluded from the study. 31 patients had PR (16 female, 15 male, mean age 44±12 years) and 14 patients (8 female, 6 male, mean age 40±.1 years) had only physiological regurgitation. Haematological indices sensitive to hemolysis (total and isoenzymes of LDH, ratio of LDH_1/LDH_2, reticulocyte count and serum haptoglobin levels) were measured. Even though reticulocyte count was similar between the two groups, total LDH levels and the LDH_1/LDH_2 ratio were significantly higher in group with PR ($p<0.004$, $p<0.001$, respectively). Haptoglobin levels were lower in the group with PR ($p<0.05$). When flow characteristics were analysed among patients with PR, in the hemolysis group, six patients had acceleration, two patients fragmentation, three patients collision, two patients deceleration and finally four patients free jet pattern. In patients without hemolysis, one patient had acceleration, two patients fragmentation, two patients deceleration and finally twelve patients free jet pattern. When the relation between the degree of PR and hemolysis among patients with PR were examined, 55% (12/22) of patients with moderate-to-severe PR, and 56% (5/9) of patients with mild-to-moderate PR were found to have hemolysis. These results suggest that PR, particularly of acceleration and collision flow pattern, is associated with a greater incidence of hemolysis, whereas no relation exists between the degree of PR and hemolysis. Keywords: Hemolysis, mitral paraprosthetic regurgitation, TEE.

Reviews

Selenium and its Relation with Heart Disease

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Selenium is one of the essential trace elements. Its possible etiopathogenetic role in human disease, when deficient, was first recognized with endemic cardiomyopathy (Keshan disease) seen in the Keshan region of China. Being the basic element of glutathion peroxidase, selenium's possible protective effect against injurious properties of free radicals has been brought into view. For this reason, its possible effects in diseases like atherosclerotic heart disease, in which free radicals may play etiopathogenetic role, have been subject material of many investigations. In this review, selenium's relation with heart diseases has been examined under the

light of the literature. Selenium deficiency has negative effects on mortality and morbidity in regurd to cardiomyopathy and coronary artery diseases. There is no clear data about the direct role of selenium status in the etiopathogenesis of cardiovascular disease, rather it is believed to be dominantly by an indirect way. Even though it can be said that, because of the positive effects, selenium co-administration with standard therapy could before beneficial in selected cases, larger scale prospective studies are needed. The selenium intake in Turkey in general is within normal limits. Hence, no problems attributable to selenium deficiency are present.

Key words: Selenium, free radicals, cardiomyopathy, coronary artery disease

Cardiac Effects of Passive Smoking

E. Başar

Smoking is the most important, preventable cause of coronary heart disease. Epidemiologic studies show that passive smoking is also an important risk factor for coronary heart disease. The effects of passive smoking on the cardiovascular system are not caused by any single component of tobacco smoke but rather by the effects of many elements including carbon monoxide, nicotine, polycyclic aromatic hydrocarbons, and other not fully specified element in the smoke. Harmful effects of passive smoking are important also for children. Children with long-term exposure to passive smoke may be at elevated risk for the development of premature coronary heart disease. Cardiac effects of passive smoking are reviewed in this paper.

Key words: Coronary heart disease, passive smoking

Recommendations for Physical Activity in Children with Heart Disease and Dysrhythmias

A. G. Eroğlu

Physical activity is important for the normal development of a child. Exercise increases functional capacity and decreases myocardial oxygen demand in children with heart disease. There are relatively few heart disease that have been associated with sudden death during exercise. The exercise status of children with heart disease needs careful consideration. Children with heart disease need an individualized exercise recommendation based on factors such as severity of heart disease; type, intensity and duration of physical activity the patient wants to participate in. The effect of exercise on the heart and recommendations regarding exercise in patients with congenital heart diseases, acquired valvular diseases, systemic hypertension and cardiac dysrhythmias were reviewed in this article.

Key words: Physical activity, sport, sudden death, dysrhythmia

Echocardiography in Evaluation of Pulmonary Thromboembolism

B. Görenek, Y. Çavuşoğlu, N. Ata

Pulmonary thromboembolism (PT) is a common disease that is frequently missed in clinical diagnosis. In patients who fail to have the right diagnosis and treatment on time, the mortality of this illness is high. Ventilation-perfusion scan and pulmonary angiography are the definitive diagnostic tests for PT. Unfortunately, these methods have some limitations. Due to its being a safe, non-invasive and easily applicable technique, echocardiography is an alternative method in the evaluation of patients with PT. This review, is a summary on the use of echocardiography in PT and its limitations.

Case Report

Severe Mechanic Hemolysis After Complete Coil Occlusion of Patent Ductus Arteriosus Due to Streptokinase Treatment

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Streptokinase was used for femoral artery thrombosis in a child after the implantation of a Jackson coil for her moderate sized patent ductus arteriosus. Severe hemoglobinuria developed after the observation of patency in femoral artery although complete occlusion of the patent ductus arteriosus had been achieved angiographically. Left-to-right shunt did not stop even 35 hours after the cessation of streptokinase and severe anemia developed due to mechanical hemolysis. In order to get rid of this complication, a second Jackson coil was implanted in another procedure. This experience shows that if anticoagulant/fibrinolytic therapy is necessary in completely occluded patent ductus arteriosus patients, preparedness for recanalization of the arterial duct and related complications is mandatory.

Key words: Patent ductus arteriosus, transcatheter occlusion, coil, streptokinase, mechanic hemolysis, hemoglobinuria