

Summaries of Articles

Clinical Investigations

A Proposed Scoring Scheme for Assessing Coronary Risk in Turkish Adults

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Since Turkish adults possess distinctive features in risk profile, the need for a suitable scoring system to assess the individual coronary risk is apparent. With this purpose, a scoring scheme was designed which was inspired by the PROCAM and the Framingham scores and was tested on the cohort of the Turkish Adult Risk Factor Study. The baseline data of the cohort of the 1997/98 survey, aged 30-74 years, comprising 1129 men and 1139 women were utilized as was the number of coronary events in the subsequent 3 years. Our scheme included 9 risk variables: age, systolic blood pressure, cigarette smoking, presence of diabetes, levels of LDL-cholesterol, HDL-cholesterol, triglycerides, waist circumference and physical activity grade. Each participant in the database was scored for principal risk factors according to PROCAM in men, and to the Framingham risk score in women. Individuals of both genders were also scored by the newly designed system.

Correlation between individual point counts among the two scoring systems was as high as $r = 0.98$ in men and 0.95 among women. When the cohort was divided into quintiles according to risk scores, the percent development of coronary heart disease (CHD) events and that by the devised scheme were very close in both genders. This disclosed that the new score was a valid scheme for CHD risk. Mean risk points among apparently healthy men was 15.2 ± 6.5 , in men with CHD 22.8 ± 5.6 . Respective points in apparently healthy women was 15.6 ± 9.7 (Framingham score 4.4 ± 5.8), in women with CHD 26.4 ± 5.4 (Framingham points 10.7 ± 2.7). Scores were finally selected in the database which reflected a $\geq 20\%$ coronary event risk in the subsequent 10-year period. These turned out to be ≥ 23 points in men, and ≥ 26 points in women. It was thereby estimated that 20.5% of Turkey's population aged

30-74 years (roughly 4.5 million persons) was comprised in the coronary high-risk category.

This single scoring scheme is found suitable to rank the individual CHD risk both in Turkish men and women with a high reliability. The score ranges suited to estimate the high and intermediate risk may be used as of now. With the aid of future data, these ranges may slightly be modified and further refined.

Key words: Coronary heart disease risk, risk assessment, risk factors, Turkish adults

Effect of Acute Blood Pressure Reduction on Oxygen Kinetic Values in Hypertensive Cases

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Exercise tests performed at the submaximal level are valuable in the evaluation of complaints during daily activities. Fatigue and shortness of breath are among the common complaints of most hypertensive patients during daily activities. We aimed to evaluate the effects of blood pressure control on oxygen kinetic values.

Twenty-eight patients with uncontrolled blood pressure were included. Patients performed exercise tests with modified Bruce protocol for 6 minutes upon which blood pressures rose to 183 ± 13 mmHg systolic and 94 ± 9 mmHg diastolic levels. Oral captopril administration reduced these readings to 133 ± 8 mmHg and 84 ± 5 mmHg, respectively. Variability in oxygen kinetic values (oxygen deficit and mean response time) between both tests was investigated.

Oxygen deficit values and the mean response time measured during the exercise tests, which the patients performed at a constant velocity and when their blood pressures were high, were found to be 511 ± 138 milliliters (ml) and 44 ± 12 seconds (sec), respectively. During the second exercise tests performed after blood pressure reduction with captopril, oxygen deficit and mean response time to

exercise were 397 ± 126 ml and 36 ± 9 sec respectively. The difference was statistically significant ($p=0.0001$, $p=0.001$).

Hence, there is a significant improvement in oxygen kinetic values in the early period with normalization of blood pressure. This is in support of the concept that the heart adapts to exercise more easily and performs the same amount of work with less energy and this underlines the importance of blood pressure control.

Key words: Hypertension, oxygen kinetic values

Hyperacute Myocardial Infarction and One Minute Heart Rate Variability Test

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We evaluated the use of a simple, bedside test of 1-minute heart rate variability (HRV) during deep breathing as a prognostic index after hyperacute myocardial infarction (MI).

Bedside HRV was assessed in 50 patients who were hospitalized due to hyperacute MI (Group I) and 50 age and sex matched control subjects without ischemic heart disease (Group II). Patients and control subjects were instructed to take 6 deep respirations in 1-minute while changes in RR intervals were measured and calculated by an electrocardiographic recorder (50 mm/sec velocity). The shortest and longest RR interval was calculated manually; HRV was defined as the difference between the longest and shortest RR interval.

HRV in group I was significantly less than group II (144 ± 101 msec vs 278 ± 152 msec, $p < 0.0001$). In group I, there was a strong linear correlation of HRV with left ventricular ejection fraction ($p < 0.05$, $r = 0.876$); HRV in patients with acute pulmonary edema was significantly less than in patients without acute pulmonary edema (24 ± 25 msec, 178 ± 86 msec, $p < 0.0001$). HRV in patients with anterior MI was significantly less than in patients with inferior MI (94 ± 78 msec, 195 ± 96 msec, $p = 0.001$).

Decreased one minute HRV test is associated with presence of acute pulmonary edema, anterior MI and depressed ejection fraction.

Key words: Hyperacute Myocardial Infarction, Heart Rate Variability, Prognosis

Efficacy and Safety of Low Molecular Weight Heparins in Preventing Thromboembolic Events After Cardioversion of Atrial Fibrillation

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Aim: Transesophageal echocardiography (TEE) guided early cardioversion (CV) in conjunction with short-term anticoagulation has been shown to be safe, and an alternative to prolonged conventional anticoagulation therapy. Recently, low molecular weight heparins (LMWHs) have been used successfully as an alternative to standart heparin therapy obviating the need for hospitalization and APTT monitoring. The aim of this study was to determine the efficacy and safety of TEE guided early cardioversion in conjunction with short-term LMWH use in patients with nonvalvular atrial fibrillation (NVAF).

Methods and results: The study group consisted of 172 consecutive patients with NVAF. Before TEE, 90 patients received LMWH (Dalteparin 2×5.000 u SC) and 82 patients received standart heparin (UFH) (5.000 u IV bolus followed by IV infusion to raise APTT to 1.5 times control). TEE was performed and left atrium and left atrial appendix was searched thoroughly for the presence of thrombus. One patients from each group was excluded due to detection of left atrial thrombus by TEE. Immediately after TEE, CV was attempted and warfarin was initiated. All patients received warfarin for one month after CV. In the LMWH group, 89 of 88 patients (98.9%) was successfully cardioverted. CV was successful in patients 97.5% in the UFH group. None of the patients experienced thromboembolic events during the four weeks after CV.

Conclusion: TEE guided early CV in conjunction with short-term LMWH treatment is as safe as UFH for the prevention of the thromboembolic events after CV.

Key words: Atrial fibrillation, low molecular weight heparin, transesophageal echocardiography, cardioversion

Our Results of Surgical Repair of Postinfarction Ventricular Septal Rupture: Analysis of Variables Affecting Mortality and Morbidity

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Postinfarction ventricular septal defect (VSR) developing in 1-2% of patients is a serious complication with high mortality rates. In this study, VSRs repaired surgically were evaluated retrospectively with clinical and echocardiographic findings to analyse variables affecting mortality and morbidity as well as surgical technique.

The preoperative, perioperative, and postoperative early and mid-term follow-up data of 21 patients with VSR who underwent surgical repair from 1996 through 2001, were evaluated. Preoperative coronary angiography, cardiac catheterization were performed in all patients. Preoperative and postoperative control echocardiography were also performed in all patients but two patients who died perioperatively. Follow-up data after the discharge of these patients were obtained via monthly periodical examinations in the first 6 months, and thereafter via telephone interviews.

The mean follow-up time of surviving 13 patients was 27.62 ± 22.60 (2-67) months. Overall mortality and early mortality rates were 42.9% and 38.1%, respectively. Postoperative complications were observed in 13 (68.4%) patients. The most frequently encountered complication was congestive heart failure developed in 8 patients. Advanced age and cardiogenic shock were significant risk factors for postoperative renal failure and congestive heart failure. Overall morbidity was significantly high in patients with preoperative QP/QS>2. Advanced age, anterior MI, ejection fraction (LVEF)<40%, anterior VSR, and single-patch repair technique used to repair anterior VSR were found to be the determinants of mortality.

Despite the improved surgical techniques, postinfarction ventricular septal defect with

extensive myocardial damage still continues to be a very difficult surgical challenge with high mortality rates.

Key words: Ventricular septal rupture, myocardial infarction, risk factors, cardiac surgery

Reviews

Alcohol Consumption and Heart Disease

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Since coronary artery disease still has high mortality and morbidity rates despite recent advances in therapy, primary prevention became more important. Epidemiological studies suggest that moderate and regular alcohol consumption reduces the risk of coronary artery disease. A consistent coronary protective effect has been observed with the consumption of 1 to 2 drinks per day of an alcohol-containing beverage. This protective effect is attributed to an increase in HDL-C and insulin sensitivity, as well as to reduced serum fibrinogen levels. Although moderate alcohol consumption has a minor effect on blood pressure, more than moderate consumption causes a significant risk for hypertension. Besides the beneficial effects of low dose alcohol on coronary artery disease, high dose with long term alcohol consumption is associated with deterioration of myocardial contractile function and may even cause cardiomyopathy. With this article the effects of alcohol consumption on coronary artery disease were reviewed.

Key words: Alcohol consumption, coronary heart disease

Ischemic Preconditioning and Warm-up Phenomenon

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Prodromal angina pectoris is defined as angina or ischemic episode which is seen before the beginning of acute myocardial infarction and shown to be beneficial in the course of disease after myocardial infarction. Although the exact mechanism of

beneficial effects of prodromal angina is not known. Ischemic preconditioning is the most accepted mechanism. Ischemic preconditioning is defined as preparation of the myocardium against ischemia to limit the infarct size as a result of preinfarction ischemic attacks. Determination of the exact mechanism of ischemic preconditioning and understanding this beneficial protection is important from. The view point of refraining from use of drugs preventing the beneficial effects of ischemic preconditioning (e.g. sulfonyleurea) and of the development of current treatment methods such as "preconditioning mimetics" in the high-risk patient population.

Key words: Prodromal angina, ischemic preconditioning, warm-up phenomenon

Cholesterol Embolization Syndrome: An Increasing But Still Underdiagnosed Disease

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Cholesterol embolization syndrome is a multisystem disease resulting from cholesterol crystal embolization to many organs, including the kidney, skin, brain, eye, gastrointestinal tract and extremities.

Vascular surgery, vascular radiological interventions, thrombolytic therapy and anticoagulation have been detected as triggering factors. Cholesterol atheromatous embolism is a common, but often unrecognized problem due to the difficulties of the diagnosis, absence of effective therapeutic regimen and high mortality rate.

Because of the population at risk for cholesterol embolism is increasing and the disease is frequently iatrogenic in origin, we should expect to detect cholesterol embolism more frequent as a cause of acute renal failure and other clinical manifestations of the disease in future.

In this review we focused on the clinical manifestations, diagnosis and therapeutic options of cholesterol embolization syndrome.

Key words: Cholesterol embolism, coronary angiography, renal failure.

Case Report

Cardiac Complications After Chemotherapy: Report of Two Cases

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The cardiac complications of chemotherapeutic agents are increasing with more common usage of chemotherapy protocols. In this report, we described 2 patients who had chest pain and electrocardiographical changes after chemotherapy. Both patients had normal coronary angiography. The patient who received 5-fluorouracil for a colon cancer was diagnosed as coronary artery vasospasm, and the other patient who received cyclophosphamid and cisplatin for an ovarian cancer was considered to have nonfatal toxic myocarditis.

Key words: Chemotherapy, cardiac complication, myocarditis