

Summaries of Articles

Clinical Investigations

Metabolic Syndrome, Major Culprit of Coronary Disease Among Turks: Its Prevalence and Impact on Coronary Risk

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The database of the survey 2000 of the Turkish Adult Risk Factor Study was analyzed cross-sectionally with the purpose of studying the prevalence, composition of the components of the metabolic syndrome (MS) and its relationship with the likelihood of coronary risk among Turkish adults. The population sample, measurements and definitions had previously been published. In this paper, MS was defined in conformity with that proposed in the new NCEP guidelines, namely in the presence of 3 out of 5 relevant components. MS was identified in a huge proportion of Turkish adults, namely in 28% of men and 45% of women aged (30 years).

Among components of the MS, low HDL-cholesterol levels and hypertension in both genders as well as abdominal obesity (waist circumference >88 cm) in women each emerged in about 90% of instances, whereas hypertriglyceridemia (>150 mg/dl) existed in the majority and glucose intolerance in 1 out of each 5 individuals with MS. Fasting plasma insulin levels were elevated in MS by about 40-50% even in nondiabetic individuals. Hyperinsulinemia (≥ 10 mIU/L) was associated in each 2 out of 5 subjects with MS. Coronary heart disease (CHD) had been diagnosed in 15.1% of men and 11.3% of women overall in MS. This meant that 53% of all CHD cases in Turkey was estimated to originate from MS. The CHD likelihood of MS was 2-fold that of the remaining adults; and even when controlled for age, an independent excess coronary risk of 60% was imposed by MS. Two criteria, namely total cholesterol/HDL-cholesterol ratio >5 and age ≥ 50 in men, (55 in women were adequate to serve to identify subjects with MS at high risk (>20% likelihood of prevalent CHD).

It was concluded that low HDL-cholesterol and hypertension, and in women abdominal obesity are the rule in MS among Turkish adults. MS, being associated with the majority of CHD cases in Turkey, poses the major attributable excess coronary risk. Findings were in agreement with the hypothesis that insulin resistance underlies MS even in nondiabetic persons. The cholesterol ratio and age may justifiably be used to predict individuals with MS at high risk of CHD.

Key words: Abdominal obesity, coronary heart disease, low HDL, metabolic syndrome

Effects of Ticlopidine to In-vitro Platelet Aggregation Response Induced by Agonists in Coronary Stenting Patients

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Coronary artery stenting (CAS) is used in patients with localized coronary stenosis, and for suboptimal results after PTCA as an alternative treatment to bypass surgery. Ischemic complications after PTCA and CAS may be caused by activation of the hemostatic system by the maneuver. Conventional therapies with antiplatelet and anticoagulant agents cannot completely prevent platelet aggregation and thrombosis. Ticlopidine has been shown to inhibit ADP-induced ex-vivo platelet aggregation in healthy subjects. In this study, effects of ticlopidine on in vitro platelet aggregation seen after CAS were investigated.

Study population consisted of 38 patients (mean age: 57 ± 9 , number of vessels: 39, number of stents: 42, pre-procedural luminal stenosis: $93 \pm 7\%$, post-procedural luminal stenosis: $4 \pm 2\%$) who had successful coronary stenting and homogenous medical therapy (aspirin and oral nitrate). Ticlopidine 500 mg was given to all patients just before stent application and continued for one month

at the same dose. Platelet rich plasma before, immediately after, and 8 days after the procedure were obtained, incubated with ADP, collagen and epinephrine separately. Turbidimetric method of Born was used for amplitude and duration of aggregation value measurements. All data were compared by repeated test ANOVA

Only collagen-induced aggregation duration was increased significantly ($p<0.001$) immediately after coronary stenting measurements, and approached to normal ($p>0.05$) at the 8th day after stenting. Aggregation amplitude immediately after stenting was increased and decreased insignificantly ($p>0.05$) by collagen-epinephrine and ADP, respectively. Aggregation amplitude was found significantly decreased ($p<0.05$ - <0.001) at the 8th day after intervention.

In conclusion, standard antiaggregant therapy inhibits in-vitro platelet aggregation sufficiently in elective coronary stenting patients; moreover, ticlopidine combination to this procedure may lead to additive effect.

Key words: Coronary stenting, in-vitro platelet aggregation, ticlopidine, agonist

Effects of Glycoprotein IIb/IIIa Receptor Inhibition on Early and Long-Term Prognosis in High-risk Patients with Non-ST Elevation Acute Coronary Syndromes Without Early Invasive Intervention

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The aim of the study was to evaluate the effects of tirofiban on in-hospital, first month, and long-term major cardiac events in high-risk patients presenting with non-ST elevation acute coronary syndromes who were treated without early revascularisation. Twenty-nine male, 13 female total 42 patients (mean age 55 ± 14 , range 34-77) treated with aspirin, heparin, IV nitrate, beta-blocker or calcium channel blocker constituted the standard therapy (heparin) group, and (33 male, 8 female) a total of 41 patients

(mean age 57 ± 12 , range 43-78) who additionally received tirofiban therapy constituted the tirofiban group. While the incidence of in-hospital total major cardiac events (27% vs. 54%, $p: 0.01$), recurrent refractory angina (27% vs. 50%, $p: 0.04$), and acute myocardial infarction (2.4% vs. 19%, $p: 0.03$) was significantly lower in the tirofiban group, the incidence of death and urgent revascularisation was not different between the two groups. During the first 30 days of follow-up hospitalisation with unstable angina, acute myocardial infarction, revascularisation, death, heart failure, and stroke rates were not statistically different. Similarly the incidence of hospitalisation with unstable angina, acute myocardial infarction, revascularisation, death, and stroke was not statistically different during the long-term follow-up (11.8 ± 2.4 months for tirofiban group, 9.5 ± 2.7 months for the heparin group, $p: NS$), only the incidence of heart failure was more frequent with a borderline significance ($p: 0.048$) in the heparin group.

Conclusion: Tirofiban plus heparin therapy causes a decrease in in-hospital major cardiac events, but does not affect the 30-day, and long-term major cardiac events in high-risk patients presenting with non-ST elevation acute coronary syndrome who were treated without early revascularisation.

Key words: Glycoprotein IIb/IIIa receptor inhibition, tirofiban, heparin, acute coronary syndrome

Detection of Arg403Gln, Arg453Cys, Arg719Trp and Arg719Gln Mutations in the β -Myosin Heavy Chain Gene (β -Mhc) Causing to Hypertrophic Cardiomyopathy

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Hypertrophic cardiomyopathy (HCM), usually an autosomal dominant inherited heart disorder, has a 0.2% prevalence in general population. Genetic

mutations in β -myosin heavy chain, troponin T and I, α -tropomyosin, essential and regulatory light chains, cardiac myosin binding protein C, actin and titin like sarcomeric proteins can cause HCM. HCM is anatomically characterized by asymmetrical hypertrophy in left ventricular septum and free wall. The disease has various degrees clinical in severity, up to sudden death. In this study, Arg403Gln, Arg453Cys, Arg719Trp and Arg719Gln mutations that have poor prognosis and high rates of sudden death incidence were investigated in β -myosin heavy chain genes. Eighteen patients (male:9, female:9, mean age:39) diagnosed as HCM by clinical and echocardiographic data were included in the study. DNAs from blood samples of patients were obtained by phenol chloroform extraction and ethanol precipitation methods. PCR and restriction enzyme digestion + mini horizontal agarose electrophoresis techniques were used in screening the mutations. Arg403Gln, Arg453Cys, Arg719Trp and Arg719Gln mutations were found in none of 18 patients. We concluded that risk assessment of sudden cardiac deaths and preclinical diagnosis of the disease could be made by forming a country database including genetic mutations responsible from HCM of more patients.

Key words: Hypertrophic cardiomyopathy, β -myosin heavy chain, mutation

Evaluation of Enalapril+Losartan Treatment with Cardiopulmonary Exercise Test in Patients with Left Ventricular Systolic Dysfunction

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Objective: The aim of this study was to evaluate enalapril+losartan treatment with cardiopulmonary exercise test (CPET) in patients with left ventricular systolic dysfunction.

Methods: The patients with left ventricular systolic dysfunction (ejection fraction: $\leq 40\%$) were included in this study. A total of 30 subjects were studied; 20 patients (18 male, 2 female; mean age: 62 ± 6) as the

study group and 10 patients (8 male, 2 female; mean age: 59 ± 11) as control group. All study patients were using enalapril 20 mg/day initially. Fifty mg losartan was added to the study group. CPET was performed to the study group before and 6-8 weeks after beginning of the losartan therapy. To the control group CPET was performed twice; at the beginning and 6-8 weeks later without any change in the treatment protocol.

Results: In the study group the average exercise times were 361 ± 192 sec. and 454 ± 205 sec., before and after the study, respectively ($p=0,001$); peak VO_2 values were 1209 ± 366 ml/min. and 1284 ± 398 ml/min.; anaerobic threshold VO_2 values were 788 ± 187 ml/min. and 855 ± 217 ml/min before and after study respectively ($p=0,01$). Peak heart rates were 141 ± 28 /min and 143 ± 22 /min ($p=0,35$); peak VO_2/HR values were $9,02 \pm 3,1$ ml/min and $9,3 \pm 3,0$ ml/min ($p=0,4$) before and after study, respectively. On the other hand, in the control group average exercise times were 556 ± 250 sec and 528 ± 251 sec ($p=0,8$), peak VO_2 values were 1502 ± 537 ml/min and 1450 ± 501 ml/min ($p=0,2$); and anaerobic threshold VO_2 values were 1005 ± 338 ml/min and 975 ± 319 ml/min ($p=0,7$) before and after study, respectively. At the highest comparable exercise stage for both tests in the study group VE/ VO_2 ratio declined from $35,13 \pm 6,2$ to $32,44 \pm 5,6$ ($p=0,07$). VE values from $37,5 \pm 10,9$ lt to $33,99 \pm 10,14$ lt ($p=0,02$); and heart rate from 140 ± 27 /min to 132 ± 21 /min ($p=0,02$). There was no statistical difference in these parameters in the control group.

Conclusion: Addition of losartan to the standart therapy in patients with left ventricular systolic dysfunction; improves exercise capacity and causes lower heart rate and ventilation requirements for the same exercise stage.

Key words: Enalapril, losartan, left ventricular systolic dysfunction, exercise test.

Review

Factors Which May Affect Tilt-testing Results

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Tilt table testing is the most important part of the evaluation of patients with vasovagal syncope. When analysing the data obtained from tilt testing, some difficulties may occur related to patient characteristics and study protocol. Not only for diagnosis, but also for choosing the most appropriate treatment strategy, the careful evaluation of the test results is important. In this article, we summarized the findings of several studies on the assessment of the results of tilt testing in neurocardiogenic syncope.

Key words: Tilt-testing, vasovagal syncope

Case Reports

Congenital Long QT Syndrome in Relation to a Case Report

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Long QT syndrome (LQTS) is a disorder of cardiac ion channels that affect repolarization and is characterized by QT interval prolongation on the ECG and torsade de pointes arrhythmias leading to recurrent syncope or sudden death. It may be congenital or acquired. In congenital LQTS mutations in the genes, encoding ion channels at the myocardial cell membrane, cause this channel malfunction. In acquired LQTS ion channel malfunction is caused by metabolic abnormalities or drugs. In this article, we present a case with congenital LQTS, which was diagnosed and treated

as epilepsy for two years. It was shown that syncopal episodes were due to ventricular tachycardia attacks. Because of cardiac arrest development cardioverter defibrillator (ICD) was implanted. During one year of follow up, two ventricular fibrillation attacks were terminated by ICD. Due to this case that resembles epilepsy, the clinical features of congenital LQTS and its treatment were reviewed.

Key words: Epilepsy, long QT syndrome, sudden death, syncope

Spontaneous Coronary Artery Dissection: Case Report and Review of the Literature

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Primary or spontaneous coronary artery dissection is a very rare condition. These cases have no significant risk factors for coronary artery disease. A 38-year-old female patient applied to hospital with angina pectoris. Cardiac enzyme studies were normal. There was no substantial change in the ECG. Next day typical angina pectoris resumed and newly onset T wave negativity was noted in the ECG. She had no risk factors except for smoking. In the coronary angiograms dissection in the midportion of left anterior descending coronary artery was recognised. She was bypassed with left internal thoracic artery in situ graft. Therapeutical options were reviewed.

Key words: Coronary artery, spontaneous dissection, bypass surgery