

Summaries of Articles

Clinical Investigations

Determinants of HDL-cholesterol and its Prediction of Coronary Disease Among Turks

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The distribution of serum concentrations of HDL-cholesterol (HDL-C), its correlation with other risk factors, its determinants and its association with coronary heart disease (CHD) likelihood was studied cross-sectionally in 2350 persons constituting the 2001/02 cohort of the Turkish Adult Risk Factor Study. Moreover, the prediction of future fatal and nonfatal CHD was investigated in the 1997/98 cohort comprising 2362 men and women free of CHD. HDL-C was generally measured with dry chemistry method using a Reflotron apparatus, but utilizing the direct method without precipitation in year 2001 and was validated in over 6% of the cohort in a reference laboratory. Mean HDL-C was 38.0 ± 10.0 and 45.3 ± 11.3 mg/dl in men and women, respectively, whose mean age was 52 ± 12 years in the cross-sectional analysis. HDL-C levels were under 40 mg/dl in 64% of men and in 35.5% of women.

The inverse relationship between HDL-C and triglyceride concentrations was demonstrated in increasing deciles. In linear regression models comprising 11 variables, smoking habit, waist circumference and physical inactivity suppressed HDL-C, whereas alcohol use was associated with elevation of this level. The slope of the linear regression allowed following estimated independent changes ($p < 0.01$) in HDL-C corresponding to an increment of 1 standard deviation: 80 mg/dl triglycerides 1.6 mg/dl decline in HDL-C, 12 cm waist circumference 1.33 mg/dl decline in HDL-C, smoking more than 10 cigarettes daily 3.16 mg/dl decline in HDL-C, apo B 40 mg/dl 2.76 mg/dl decline in HDL-C, 40 mg/dl total cholesterol 3.3 mg/dl rise in HDL-C. Alcohol use once a week or more frequently was associated with a rise of 3.5 mg/dl of HDL-C ($p = 0.064$).

Over a 4-year prospective study, logistic regression analysis comprising 10 variables including systolic blood pressure, smoking habit, total cholesterol and diabetes, revealed HDL-C to be an independent predictor of CHD with a relative risk of 0.971 in men ($p < 0.02$) and of 0.980 in women ($p = 0.08$). Among men and women combined, RR was 0.975 ($p < 0.002$), which implied that a reduction of HDL-C by 12 mg/dl (≈ 1 hazard ratio), would be associated with 36% increase of fatal and nonfatal events.

The relative roles of main biochemical and lifestyle determinants of HDL-C levels in Turkish adults were thus established. The major dimensions of effects of obesity with associated hypertriglyceridemia, excessive smoking and abstinence of alcohol on HDL-C levels are apparent. HDL-C concentrations represent a significant independent predictor of future coronary events; however, its magnitude does not appear to be very strong.

Key words: Epidemiology, HDL-cholesterol, coronary heart disease, risk factors, smoking, Turkish adults

Severe Hypotension at the Initiation of Cardiopulmonary Bypass: Is it Avoidable?

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Hemodilution, hypothermia, and non-physiological circulation mechanics resulting from extracorporeal circulation (ECC) cause transient decrease in mean arterial pressure (MAP) which is also called phenomenon A. We investigated the effects of the amount and ingredient of the priming solution on phenomenon A.

Twenty-four patients were equally allocated into three groups with respect to ECC priming solution amount and ingredient. Priming solution consisted, of 25 ml/kg lactated Ringer (crystalloid) in group 1, of 15 ml/kg lactated Ringer in group 2, and of 15 ml/kg HES %6 (colloid) in group 3. Phenomenon A

was defined as a decrease of the mean arterial pressure below 40 mmHg for at least 4 minutes after the initiation of ECC in spite of a blood flow of 2.5 l/m². Measurements were obtained at T1 (completion of cannulation), T2 (first minute of ECC) and at T3 (fifth minute of ECC). There were five patients with phenomenon A in group 1 (62.5%), two in group 2 (25%), and one in group 3 (12.5%).

We did not observe any correlation between MAP, blood cell count, epinephrine and norepinephrine levels in the three groups. We think hemodilution (as the cause of phenomenon A) must have other causes.

We conclude that hemodilution is one of the main causes of phenomenon A, but the exact mechanism is not known yet. We think that using less priming solution and choosing colloidal fluids may well decrease the incidence of phenomenon A.

Key word: extracorporeal circulation, phenomenon A, hypotension

Effect of Myocardial Damage Sustained During Coronary Artery Bypass and Detected by Qualitative Troponin T on Functional Recovery of Hibernating Myocardium

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Despite modern intraoperative myocardial protection and improvements in surgical techniques, some degree of myocardial damage occurs during coronary artery bypass graft surgery (CABG). Recently, cardiac troponin T (TnT) is used widely to detect myocardial damage in our country. The aim of this study is to determine the effect of myocardial damage detected by qualitative cardiac TnT during CABG, on functional recovery of the hibernating myocardium. Forty-one cases with coronary artery disease, left ventricular dysfunction and hibernating myocardium detected by dobutamine stress echocardiography (DSE) were included in this study. Qualitative TnT and serial CK-MB measurements were made after CABG. Repeat echocardiography was performed at the third month after CABG and left ventricular function and functional recovery was

evaluated. The functional recovery of the 19 TnT (+) and 22 TnT (-) cases were compared.

Results: The parameters of TnT (+) and TnT (-) groups were listed below. The mean number of preoperative DSE (+) segment was 4,16 ± 1,43 and 3,68 ± 1,25 (NS) in TnT (+) and TnT(-) groups, respectively. The mean preoperative ejection fraction (EF) was 43 ± 11 % and 44 ± 9 % (NS), the mean number of impaired segment was 3,37 ± 1,07 and 3,13 ± 1,25 (NS), rate of impaired segments 83 ± 14 % and 85 ± 16 % (NS), peak postoperative CK-MB value 67 ± 39 U and 44 ± 23 U (p<0.05), and the mean postoperative EF was 49 ± 8 % and 51 ± 11 % (NS) in TnT (+) and TnT (-) groups respectively. There were no statistically significant differences between two groups except the CK-MB value. In the TnT (+) 3 cases, CK-MB values elevated more three times than normal value. There was also no change in preoperative and postoperative EF values in these cases. CK-MB values of TnT (+) group were found to be significantly elevated. There was no statistically significant difference between 2 groups in baseline preoperative values, postoperative improvement of hibernating segments, and global left ventricular function. Recovery of left ventricular function and hibernating segments were significantly depressed in 3 cases whom CK-MB values elevated obviously. Conclusions: Minor myocardial damage detected by qualitative TnT did not effect significantly recovery of hibernating myocardium in this study. Serious myocardial damage probably did not occur in the qualitative TnT (+) cases. Significantly increased quantitative TnT or CK-MB levels are related to extensive myocardial damage. Comparing quantitative studies to qualitative TnT evaluation will prove more information in this area.

Key words: Troponin T, myocardial damage, coronary artery bypass graft surgery

Relationship Between Silent Myocardial Ischemia and Aortic Valve Sclerosis in Patients with Essential Hypertension

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Objectives: Silent myocardial ischemia has been observed in hypertensive patients with a prevalence of 35-45%. Recently, aortic valve sclerosis has been identified as a manifestation of atherosclerotic process. The aim of our study was to investigate the association between silent ischemia, aortic valve sclerosis, and some other echocardiographic and laboratory parameters in a group of asymptomatic hypertensive individuals.

Methods: The study group consisted of 131 consecutive hypertensive patients without any complaint of angina pectoris or congestive heart failure. Presence of silent ischemia was detected with Tl 201 myocardial perfusion scintigraphy. In echocardiographic examination left ventricular geometry, systolic and diastolic function and valvular involvement were assessed. Severity of aortic valve sclerosis was graded between 0 to 3 degrees.

Results: Silent ischemia was detected in 46 patients (35%). They were significantly older, had a higher frequency of male gender and higher lipoprotein (a) levels than patients without ischemia (age: 61 ± 9 years vs. 56 ± 9 years; male gender: 57% vs. 35%, $p=0.02$; lipoprotein (a): 53 ± 43 mg/dl vs. 36 ± 32 mg/dl, $p=0.01$). Left ventricular mass, systolic and diastolic function did not differ between both groups. Silent ischemia was significantly correlated with the presence of aortic valve sclerosis ($r=0.27$, $p<0.001$). In multivariate analysis, aortic valve sclerosis and age were found independently associated with silent ischemia ($p<0.001$ and $p=0.03$ respectively).

Conclusion: In patients with essential hypertension, silent myocardial ischemia is significantly associated with aortic valve sclerosis. This finding suggests that echocardiographic determination of aortic valve sclerosis may be used as a preliminary diagnostic marker for coronary atherosclerosis in these patients.

Key words: Echocardiography, hypertension, aortic valve, atherosclerosis

Reviews

The Determination of the Authors in Articles

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Authorship is key to science and careers. It provides scientists with recognition and respect. In recent years, as a result of researches getting more complicated, the proliferation of authors was inevitable and thus the concept of author and authorship criteria has become the subject of great debate. The general rule concerning authorship in a science is that a person should be listed as an author if she makes a significant contribution to research and publication. However, since the definition of significant contribution varies across different scientific fields there are no uniform standards for authorship criteria. In order to answer the question when should a person be listed as an author various ideas were suggested by scientific authorities and guidelines were prepared. Even though author and authorship criteria considering medical articles differ from discipline to discipline, important international medical journals use the statements on authorship issued by the International Committee of Medical Journal Editors. In this article, author, authorship criteria and the principles of listing authors in a publication of will be reviewed.

Key words: Author, authorship, ethics

Role of Echocardiographic Findings in Patients with Infective Endocarditis

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Infective endocarditis (IE) carries a high risk of morbidity and mortality. Rapid diagnosis, effective treatment, and early diagnosis of complications are necessary for good patient outcome.

The variability in the clinical presentation of IE requires diagnostic criteria which are both sensitive for disease detection and specific for its exclusion. With the Duke criteria it has been realised that echocardiographic findings carries high importance in the diagnosis of IE. Four typical echocardiographic findings which are vegetation, abscess dehiscence of prosthetic valve, new valvular regurgitation, should be looked for in patients having suspicion of IE. In association with clinical symptoms these echocardiographic findings are the most powerful predictors of IE. Different studies

have demonstrated that echocardiographic examination is not only useful in prompt and definite diagnosis but also it is necessary to determine effective treatment and to detect possible complications. The characteristic features of echocardiographic findings are closely related to the prognosis. During the assessment of echocardiographic predictors, detection of abscesses, fistulae, prosthetic valve dehiscence, obstructive vegetations, flail leaflets and heart failure are of high importance. Most of these complications cannot resolve with medical therapy alone, and surgical intervention can be needed.

In brief, echocardiographic findings are of high importance in the diagnosis of IE, in determining the therapy which should be chosen, as well as in predicting morbidity and mortality.

Key words: Infective endocarditis, echocardiography

Case Reports

A Case of Persistent Left Superior Vena Cava without Coexistence of Right Superior Vena Cava

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Congenital abnormalities of superior vena cava are rare and usually seen in association with other congenital heart diseases. In the absence of any congenital cardiac abnormality the persistent left superior vena cava with noexisting absence of right superior vena cava is quite rare. In this report we present an asymptomatic case of persistent left superior vena cava having atrial fibrillation with no associated congenital heart disease.

Key words: Persistent left superior vena cava, absent right superior vena cava, atrial fibrillation

Radiofrequency Catheter Ablation of Two Cases with Atriofascicular Accessory Pathway and Review of The Literature

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Radiofrequency (RF) catheter ablation of atriofascicular accessory pathways (AP) characterized by decremental antegrade conduction property and result in antidromic tachycardia with left bundle branch morphology is a current preferred therapeutic approach. Two patients, who were twenty-two and thirty-six years old, with atriofascicular AP and drug-resistant antidromic tachycardia were hospitalized for RF catheter ablation. In the first case, cardiac mapping was performed during antidromic tachycardia. While mapping using a long sheath through posterolateral tricuspid annulus, AP conduction was seen to cease temporarily during catheter manipulations. AP was successfully ablated by RF currents delivered at the same location. In the second case, mapping was done during atrial pacing. AP was ablated through the posterolateral tricuspid annulus where the conduction was terminated during the manipulation of catheter. In both cases, as the RF current was delivered, irregular Mahaim automatic tachycardia occurred with a similar QRS morphology to antidromic tachycardia. They were free of symptoms for about 3 months in the first case and 2 months in the second case.

Key words: Atriofascicular pathways, Mahaim automatic tachycardia, ablation