

Summaries of Articles

Left Ventricular Hypertrophy, Diagnosis, Prognosis and Regression

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Systemic hypertension is associated with a number of adaptive structural changes in the cardiovascular system, and left ventricular hypertrophy is a common consequence. However, left ventricular hypertrophy in hypertension has been identified as a major risk factor for occurrence of sudden death and other cardiovascular morbidity and mortality. Many clinical and experimental studies have clearly shown that left ventricular hypertrophy may regress with blood pressure lowering. Yet, all anti-hypertensive drugs which are equally effective on blood pressure do not have the same efficacy on the left ventricular regression. It is concluded that regression of myocardial hypertrophy appears to be beneficial and not detrimental to cardiac performance.

Obesity and Its Interrelation with Other Risk Factors in Turkish Adults

A. Onat

Interrelation between six other risk factors and obesity was investigated by the use of data obtained in a cross-sectional population-based study of 3689 subjects 20 years of age or over. Obesity was defined as a body mass index (BMI) of $\geq 30 \text{ kg/m}^2$ in both genders.

Prevailing in 42 % of Turkish women and 16 % of men 40-59 years of age, obesity interacted with a variety of risk factors. The relation between BMI and plasma total cholesterol level was significant in young subjects alone, and that of plasma triglyceride in young and middle-aged participants. Both the systolic and the diastolic blood pressure rose significantly with a rise in BMI in women and young men. As compared to other men, obese men tended less to smoke and more to quit when they smoked, whereas obese Turkish women appeared to keep their smoking habit to a more advanced age. The prevalence of diabetes among obese women was almost threefold of that of nonobese women. Except for men in age

group 50-59 years, the relative weight did not seem to be affected by physical activity.

Though obesity did not represent a coronary risk factor in Turkish men, it constituted in women a significant risk factor valid for all adult ages and having an etiologic fraction on the community level equivalent to that of hypertension.

Natural History in Isolated Ventricular Septal Defect

T. Onat, G. Batmaz

Three-hundred-fifty-five children with isolated ventricular septal defect (VSD) from the Cerrahpaşa Pediatric Clinic were followed up for 1701 patient years in order to determine the natural course of specific hemodynamic classes. The results were compared with 288 patients who could not be followed up. The natural course was represented well, because the patient material disclosed a wide spectrum of the disease, and also losses due to operation (2.8 %) or to mortality (1.7 %) were very low. According to the distribution of the hemodynamic classes in relation to age, the high rate of pulmonary hypertension (PH) (75-80 %) observed under 6 months of age decreased to 5 %, and the rate of those with small defects increased from 5 % to 67 % with the increase of age. There was a decrease of left to right shunt and an increase of spontaneous closure with increasing age.

PH patients were divided into two left to right shunt groups: (a) those with mild and (b) those with moderate to severe shunts. In both groups while the rate of PH decreased, the rate of those with either small shunts or with spontaneous closure increased with age. In the group with mild shunt (II a), the persistence of PH decreased to 0 % in those who could be followed up more than 5 years. The mild degree of left to right shunt persisted in the majority of patients (64 %), and the rate of spontaneous closure was 33 %. In group II b, however, the rate of persistence of PH was 9 %, abundant left to right shunt continued in another 20 %. The shunt decreased significantly in 70 %: II b's

were transformed to I a in 51 %, and defects closed spontaneously in 18 %.

In the group of 81 patients with abundant shunt but no PH (I b), 63 were followed up since age \leq 2 years, and 48 since age \leq 1 year. The following results were obtained: 1) PH did not develop in any of them; 2) The incidence of those remaining in the same group varied between 12 to 20 % according to the follow-up period. The shunt decreased significantly in 65 %, and spontaneous closure of the defects was observed in 20 %. In the group with small left to right shunt and no PH (I a): 1) defect closed spontaneously in the majority (50-62.5 %); 2) the VSD persisted with a small shunt in 30-35 %; none developed PH.

Cardiothoracic Ratio as an Index of Natural course of Isolated Ventricular Septal Defect

T. Onat, G. Batmaz

The cardiothoracic ratio (CTR) in patients with isolated ventricular septal defect (VSD) decreases with increasing age. This relationship with age is of a second degree polynomial and goes best with logarithm of age, and is statistically very significant. Thirty-three % of the total variation of CTR in VSD is explained only by the age factor. The decrease of CTR before age 2 is 2.4 % per year, while it decreases to 0.39 % per year after age 2. This significant decrease in CTR is an index showing the decrease in left to right shunt, and was observed in all hemodynamic classes. The presented regressions of CTR with age give insight to the expected decrease of CTR as well as to the degree of left to right shunt, thereby serving as a practical method in the indication for surgical closure.

Spontaneous Closure of Isolated Ventricular Septal Defect

T. Onat, G. Batmaz

The defect closed spontaneously in 64 of 355 (18 %) patients' 1701 years. This rate varied in relation to the age of onset and duration of the follow-up, as well as with hemodynamic class. The rate of spontaneous closure in those who were followed up since age $<$ 2 years was 50 % in the group with small de-

fects (I a) without pulmonary hypertension (PH) in contrast to 29.6 % of those with small defect with PH (II a). On the other hand, in those with abundant left to right shunt, the rate was 15.9 % in those without (I b) and 7.1 % in those with PH (II b). Not considering the pulmonary arterial pressure, the rate of closure was 37.7 % in those with small shunt, in contrast to 10.5 % of those with abundant left to right shunt.

The age at spontaneous closure of the defect varied between 0.5 to 16.7 years with a median value of 4 years. The range of age at which the defect was still open varied between one month and 13.6 years whose median value was 2.3 years. In order to estimate a more correct incidence of closure according to the hemodynamic classes, the results of only those who could be followed up since age $<$ 1 year were considered. The median age at closure was 0.96 years in group I a, 1.55 years in group II a, 2.17 years in group I b, 5.25 years in group II b. The age at closure was 4.5 years in those with abundant left to right shunt, in contrast to 1.48 years observed in those with small shunts, and this was found to be significant. The rate of closure increased with increasing duration of the follow-up. The difference between those with less and more than 5 years of follow-up was most conspicuous in group II b.

Long-term Results of Lovastatin Therapy in Hypercholesterolemic Patients

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The aim of this study is to evaluate the effects of lovastatin therapy continued for 1 year on hypercholesterolemic patients. 44 patients with total cholesterol (TC) levels over 240 mg/dl and low density lipoprotein cholesterol (LDL-C) levels over 160 mg/dl after 3 months of dietary restriction were studied. Lovastatin was given 20 mg as a single dose in the evening. The dose of the drug was increased up to 40 mg in 22 and to 60 mg in 2 patients. TC, LDL-C, high density lipoprotein cholesterol (HDL-C), triglyceride (TG) values were detected, TC/HDL-C and LDL-C/HDL-C values were determined at first after the diet, then in the 3rd, 6th, 9th and 12th months. The mean values from 3rd to 12th months were compared with the baseline values.

The mean decrease was 29 % in TC, 40 % in LDL-C, 46 % in LDL-C/HDL-C and 44 % in TC/HDL-C values at the end of the 1st year when compared with the baseline values (all significant). The decline in these parameters were striking in the 3rd month and also continued up to 12th month. HDL-C mean level increased 9 % at the end of the 1st year ($p<0.02$). The decrease in TG mean level was 26 % at the end of the 1st year ($P<0.02$). SGOT and SGPT levels rose to 1.5 times the upper limits of normal in 2 (5 %) patients in whom the drug was discontinued.

As a result we concluded that lovastatin decreased the mean values of TC, LDL-C, TC/HDL-C and LDL-C/HDL-C significantly after the 3rd month and it preserved its effect up to 12th month. It also effected TG and HDL-C mean levels, but less than the former values. The drug seems to be safe with respect to side effects.

Acute Myocardial Infarction in Young Subjects

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Risk factors of atherosclerosis, early complications of acute myocardial infarction (AMI), and coronary angiographic features of 56 patients 35 years old or younger (Group A) were compared with 108 patients older than 35 years (Group B).

Among risk factors, the frequency of cigarette smoking (82.1 % vs 54.6 %) and heredity (46 % vs 20 %) was significantly high in Group A, hypertension (51 % vs 10.7 %) and diabetes (15.7 % vs 1.8 %) in Group B. The number of risk factors per patient was also high in Group A (1.9 ± 0.4 vs 1.6 ± 0.9 , $p<0.05$). The greater proportion AMIs was anterior (59 % vs 44 %) in Group A, and inferior (41 % vs 20 %) in Group B. Total number of conduction disturbances, complete heart block and early mortality (one patient in Group A and 15 patients in Group B) was significantly high in Group B. Coronary angiography was performed in 44 (78 %) patients in Group A, and 35 (32 %) patients in Group B within 6 months. The ratio of normal coronary arteries (18.2 % vs 2.9 %) and one-vessel disease (50 % vs 22.9 %) was significantly greater in Group A, and two-three vessel disease (74.2 % vs 36.4 %) in

Group B. The proportion of patients with local occluded infarct artery was significantly greater in Group B (74 % vs 46 %, $p<0.001$).

We conclude that young patients with AMI have more risk factors, almost similar ratios of complications as older patients, but lower mortality rates, and mostly suffering from one vessel disease.

Effect of Angiotensin Converting Enzym Inhibition on Chronic Congestive Heart Failure Due to Coronary Artery Disease

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Twenty patients with congestive heart failure caused by coronary heart disease (NYHA class III, IV) were studied. Study medication enalapril was administered randomly to twelve of them who had been already given digitalis and diuretics. Estimation of ventricular volumes were done before and five months after treatment. We measured also end-diastolic pressures and effort capacity of the patients before and after treatment.

End systolic index was reduced significantly after treatment (88 ± 25 ml/m² to 81 ± 28 ml/m²; $p<0.05$) for the enalapril group. We found lower end-diastolic pressure values for that group and their effort capacity was significantly higher after administration of enalapril ($p<0.05$).

As with previous studies, this study showed that ACE inhibition can attenuate or even regress progressive dilation of the left ventricle after extensive transmural myocardial infarction and improve effort capacity and life quality. Enalapril was used at least 4 months after myocardial infarction (long after infarct healing) to a patient population with extremely dilated ventricles. We showed that desirable effects of ACE inhibition can be obtainable in such patients.

Effect of Allopurinol on Myocardial Recovery During Reperfusion

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A comparative study on isolated guinea pig hearts was carried out to determine the effect of allopurin-

olol-added reperfusion solution on myocardial recovery after global ischemia. After 20 minutes of normothermic ischemia two groups of solutions (1-Krebbs Solution 2-Krebsbs Solution+Allopurinol 1 mmol/L) were used for reperfusion (10 animals for each group). Postischemic myocardial functions (heart rate, ventricular contractility and heart work) and tissue enzymes (CK-MB, LDH) were compared with their preischemic values.

Addition of allopurinol 1 mmol/L to reperfusion solution improved postischemic myocardial functions and decreased myocardial injury.

Risks and Treatment of Hypertriglyceridemias

B. Komsuoğlu

Increased triglyceride levels are frequently observed in patients with prior myocardial infarction and in those with cerebral or peripheral vascular disease. Current evidence suggests that triglycerides may not be independently associated with cardiovascular death. However, more recent studies carried out in western countries found that hypertriglyceridemia was a primary cardiovascular risk factor, independent of plasma cholesterol level.

The present article reviews some of the current information relating triglyceride to the development of coronary artery disease, its role in lipid metabolism and treatment.