

Summaries of Articles

Clinical Investigations

Usefulness of Dipyridamole-Handgrip Radionuclide Ventriculography Test For Detecting Coronary Artery Disease

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To assess the efficacy of IV dipyridamole (DP) combined with isometric handgrip exercise (IHE) in inducing ischemia detectable by radionuclide ventriculography (RVg), we used both tests to study 11 normal subjects and 36 patients with coronary artery disease (CAD). RVg was performed at rest, after IV Dp (0.56 mg/kg) and during IHE.

The mean increases in ejection fraction (EF) in the normal subjects after Dp and during IHE were significantly more than that of patients with CAD (6.6 ± 2.6 % versus 2.6 ± 4.0 %, $p < 0.001$; and 5.6 ± 1.9 % versus -0.4 ± 4.3 %, $p < 0.001$). Considering an increase of less than 5 % in EF an abnormal response, the sensitivity and specificity of Dp alone were found to be 72 % 73 %, respectively. Combining IHE with Dp increased sensitivity to 83 % without a loss in specificity. Five patients (14 %) with CAD showed new wall motion abnormalities after Dp and 12 patients (33 %) after IHE, while no new wall motion abnormality was demonstrated in normal subjects.

It is concluded that IHE during RVg for the detection of CAD can be conveniently combined with Dp, because it increases the sensitivity of the test compared to Dp alone without any loss in specificity.

Atrial Natriuretic Peptide Levels in Patients with Acute Myocardial Infarction

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Plasma atrial natriuretic peptide (ANP) levels were measured in 17 patients with acute myocardial infarction and in 10 healthy subjects with the radioimmunoassay method using standard kit procedure. Plasma was sampled at about the 12th hour of in-

farction. Those with clinical evidence of congestive heart failure at the time of plasma sampling or those with a history of hypertension were excluded.

There were significant increases in the plasma ANP levels in patients with acute myocardial infarction (22.2 ± 187 pg/ml) as compared with the controls (48 ± 2 pg/ml) ($p < 0.01$). ANP levels were significantly higher in patients with inferior myocardial infarction (303 pg/ml) than in the others. Low ANP levels were found in the 7 patients who received thrombolytic therapy (188 pg/ml) (91 vs 317 pg/ml, $p < 0.01$).

Increasing plasma ANP levels in acute myocardial infarction presumably either depend on myocardial necrosis or on myocardial dysfunction caused by myocardial damage or both of them.

Percutaneous Transluminal Coronary Angioplasty: Short-term Results of 505 Cases

Ö. Kozan, O. Ergene, T. Okay, U. Deligönül, N. Çağlar, O. Sancaktar, M. Şenocak, M. Özdemir

Between October 1988-January 1991, PTCA procedure was performed in 505 patients (604 stenoses). The average age was 51 ± 7 years. There were 436 men (% 86) and 69 women (% 14). Angiographically, 304 patients (% 60) had single-vessel disease, 145 patients (% 29) two-vessel disease and 56 patients (% 11) had three-vessel disease. Ejection fraction was higher than % 50 in 485 (% 96) patients. Procedural success was achieved in 444 patients (% 88). 530 stenoses (% 83.7) were dilated successfully.

Stepwise regression analysis determined that modified ACC/AHA classification of the primary target stenosis and the presence of diabetes mellitus were the only variables independently predictive of procedural outcome (target stenosis modified ACC/AHA score $p < 0.0001$ for success, diabetes mellitus $p = 0.004$ for success). Success rates for type A, B1, B2 and C were 90.8 %, 89.6 %, 70.6 % and 55.6 % respectively.

In conclusion, subdivision into types B1 and B2 pro-

vided significantly more information in this clinically important intermediate risk group than did the standard ACC/AHA schema. The stenosis characteristics of bifurcation lesions, high-grade (% 80-99) stenosis, total occlusion and length of the lesions were inversely correlated with procedural success.

Coronary Angioplasty Complications in 505 Cases and Their Predictors

Ö. Kozan, O. Ergene, T. Okay, U. Deligönül, N. Çağlar, O. Sancaktar, M. Şenocak, M. Özdemir

Between October 1988-January 1991, PTCA procedure was performed in 505 patients (604 stenoses). Average age was 51 ± 7 years. There were 436 men (86 %) and 69 women (14 %). Angiographically, 304 patients (60 %) had single-vessel disease, 145 patients (29 %) two-vessel disease and 56 patients (11 %) had three-vessel disease. Ejection fraction was higher than 50 % in 485 (96 %) patients. Minor complication rate was 15.4 %.

Major ischemic complications occurred in 31 cases (6.1 %), of which nonfatal myocardial infarction and emergency bypass surgery constituted each 1.6 %. Death rate was 1.2 %. Stepwise regression analysis determined that modified ACC/AHA classification of the primary target stenosis and the presence of diabetes mellitus were the only variables independently predictive of complications (target stenosis modified ACC/AHA score $p=0.0002$, diabetes mellitus $p=0.0001$). Complication rates for type A, B1, B2 and C were 3 %, 7.5 %, 13.8 % and 22 %, respectively.

In conclusion, subdivision into types B1 and B2 provided significantly more information in this clinically important intermediate risk group than did the standard ACC/AHA schema. The stenosis characteristics of bifurcation lesions and high-grade (80-99 %) stenosis were significantly correlated with procedural complications.

Colchicine in the Treatment of Postpericardiotomy and Other Acute Pericarditis

H. Yüksel, G. Göktuna, A. Sert, C. Demiroğlu

Colchicine is an antiinflammatory agent used in the treatment of gouty arthritis. It has been advocated in

disorders associated with inflammation and subsequent fibrosis since it inhibits collagen synthesis and secretion, and enhances collagenase activity. We used colchicine to evaluate the efficacy in 15 patients (9 men and 6 women between the ages of 23 and 60, with a mean age of 44) unresponsive to non-steroidal antiinflammatory therapy. Pericarditis was due to postpericardiotomy syndrome in 10 patients, Dressler syndrome in 2, tuberculosis in 1. The remaining two were termed idiopathic.

The drug was given 3 mg/d in the first day, 2 mg/d in the second day as a loading dose and 1 mg/d subsequently for 8 weeks as maintenance. Favorable results were obtained in all cases except in one patient with tuberculous pericarditis. Because of its potent antiinflammatory effect, colchicine may be used in the treatment of idiopathic or immunologically-mediated pericarditis as a drug of choice. However, this should be confirmed by comparative studies done with colchicine vs nonsteroidal antiinflammatory drugs.

Effects of Cilazapril on Blood Pressure, Cardiac Hypertrophy and Left Ventricular Functions

A. Usal, E. Acartürk

The aim of the present study was to investigate the effects of cilazapril on blood pressure (BP), left ventricular hypertrophy (LVH) and LV systolic and diastolic functions in patients with mild to moderate hypertension and echocardiographically confirmed LVH. Previously untreated 10 male and 16 female patients, aged between 42-64 years (mean 56 ± 4) were given cilazapril 2.5-5 mg once daily for 6 months. BP and heart rate were evaluated monthly, while ECG, chest x-ray, blood chemistry and M-mode, 2D, color-coded Doppler echocardiograms were evaluated before treatment and on the 1,2,3 rd and 6th months of therapy.

Seventeen patients (64 %) needed 5 mg/day cilazapril for BP control. Cilazapril treatment reduced resting systolic and diastolic BP ($p<0.05$). LV mass index also decreased significantly (173 ± 24 vs 136 ± 18 , $p<0.01$).

The deceleration time of mitral peak early velocity, isovolumic relaxation time and E:A ratio reduced

significantly after cilazapril treatment ($p<0.05$). Side effects such as palpitation (2), cough (3) and facial edema (2) were observed in 7 (27 %) patients and cessation of therapy was necessary in 2 (7 %).

In conclusion, long-term antihypertensive therapy with cilazapril controls blood pressure, concomitantly brings about LVH regression and improvement in diastolic function in patients with mild to moderate hypertension.

Age-related Prevalence of Valve Regurgitations by Pulsed Doppler Echocardiography and Color-flow Imaging Among Normal Subjects

Ö. Kozan, M. Özkan, A.R. Kazazoğlu, A. Dirican, O. Pektaş

Our study group included 171 normal subjects with a mean age 41 ± 13 years (range: 15-71) in 68 women and 103 men. There were 45 subjects in age group 15-29 years, 42 in age group 30-39 years, 36 and 24 in the subsequent age groups, 24 subjects 60 years of age or over. Physiological mitral regurgitation was detected in 40.9 % of patients with pulsed Doppler, compared to 43.3 % patients with color-flow imaging ($p>0.05$). Tricuspid regurgitation was detected in 53.2 % subjects with pulsed Doppler and in 54.9 % of subjects with color-flow ($p>0.05$).

Pulmonary regurgitation was detected in 12.3 % of subjects with pulsed Doppler and in 14 % of subjects with color-flow ($p>0.05$). Aortic regurgitation was detected in 4.7 % patients both with pulsed Doppler and color-flow imaging. Physiologic valve regurgitation was observed in 35.1 %, 29.3 %, 7 % and 0.5 % of subjects with respect to 1, 2, 3 and 4 valves, respectively. The number of affected valves increased with age.

It was concluded that the prevalence of physiologic valve regurgitation in normal subjects in a selected Turkish population was not significantly different from other populations and that the use of color-flow Doppler echocardiography was more detailed and less time-consuming.

Correlates of Risk Factors in Arteriosclerosis Obliterans Confirmed by Angiographic and Operative Examination

B. Çetinarslan, B. Komsuoğlu, Z. Uzun, K. Kulan, F. Özcan

Lipid and lipoprotein levels as well as certain other risk factors were studied in 35 patients with arteriosclerosis obliterans (confirmed by angiographic and operative examination). Seventy-two asymptomatic normal subjects served as controls.

The mean serum total cholesterol and triglyceride levels in control subjects were 168 ± 31 mg/dl and 144 ± 81 mg/dl respectively. In patients with arteriosclerosis obliterans, these values were 191 ± 44 mg/dl, and 183 ± 76 mg/dl. Significant differences existed in the mean serum total cholesterol and triglyceride levels between two groups.

The mean LDL-cholesterol, Apo-B levels were significantly higher in patients than in controls. HDL-cholesterol and Apo-A1 levels were significantly lower in patients than in controls. Patients with arteriosclerosis obliterans were characterized as follows: 77 % were smokers, 37 % were hypertensive, 14 % were obese, and 5.7 % had diabetes.

The HDL-C levels were significantly lower in controls who smoked than in non-smoking control subjects; this may indirectly explain the reduced HDL ratio in patients with obstructive peripheral vascular disease, most of whom were smokers.

The Effect of Age and Sex on White-coat Hypertension

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The incidence of "white-coat hypertension" was investigated by ambulatory blood pressure monitoring in 300 hypertensive patients whose systolic blood pressure were between 140-160 mmHg and diastolic blood pressure were between 90-105 mmHg during the first office examination.

The average incidence was 18 per cent, significantly higher in women (23.4 %) than men (12.5 %) in the same age groups. Though the incidence was similar in men of all ages, it was 26.4 % in women below 40 years of age and 20.9 % in women older than 40 years ($p<0.05$). Physicians should keep in mind the

diagnosis of white-coat hypertension when hypertension is diagnosed during the first office examination.

Review

Advances in the Methods of Nuclear Cardiology Assessing Myocardial Perfusion and Function

V. Sansoy, D. Güzelsoy

Some of the recent advances in the field of nuclear cardiology is reviewed, with particular emphasis placed on clinical applicability for patient management in current practice. Major advances in perfusion and function imaging of the heart have occurred during the past five years. Developments in technology, particularly in single photon emission computed tomography have permitted improved detection and localization of coronary artery disease. New Tc-99m-labeled perfusion agents with ideal energy for gamma camera imaging and simultaneous function and perfusion imaging capabilities show promise for enhancing the quality and diagnostic accuracy of myocardial perfusion imaging.

Tl-201 continues to have widespread use, and recent studies have extended its value in the assessment of viability. In addition to dipyridamole, the new pharmacologic agents adenosine and dobutamine have also been shown to be safe and efficacious. Positron emission tomography, with the ability to perform precise quantitation, has emerged as a new facility for myocardial perfusion and metabolism imaging.

Myocardial nuclear imaging has established along with electrocardiography, echocardiography and car-

diac catheterization, as a basic tool for the cardiologist. Unfortunately, in Turkey, the number of nuclear cardiology facilities is limited, some of them have not adequately achieved satisfactory quality control or experience. Poor specificity of the myocardial perfusion imaging is a major problem.

Case Report

Early Detected Rupture of Left Ventricular Aneurysm

O. Yeşildağ, M. Yüksel, F. Kolbakır, E. Örneç, B. Kandemir, O. Sağkan

A 52-year-old man was admitted to the hospital emergency room with cardiogenic shock. The electrocardiogram showed ST elevation and T inversion in leads I and AVL, but no Q waves. Left ventricular aneurysm rupture at the posterolateral wall and hemopericardium was diagnosed with two-dimensional and color Doppler echocardiography.

The patient was directly sent to the operating room and the defect was closed. He made a good recovery. Four months later coronary angiography and left ventriculography were performed. The coronary vessels were patent and there was 50 % stenosis at the proximal 1/3 portion of left anterior descending artery. Left ventriculography showed anterolateral and posterolateral hypokinesis. The patient was symptomfree and leading an active life 4 months later. This patient is the first published case of left ventricular aneurysm rupture salvaged surgically in Turkey.