

MODERN ASPECTS OF DIAGNOSIS AND PREDICTION OF THE UNFAVORABLE COURSE OF CORONARY ATHEROSCLEROSIS

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Abstract

The article discusses the methodological aspects and diagnostic capabilities of modern radionuclide, tomographic and ultrasound research methods in the verification of coronary atherosclerosis

Keywords: atherosclerosis of the coronary arteries, myocardial perfusion scintigraphy, magnetic resonance and electron beam tomography, tissue Doppler imaging of the myocardium, through esophageal and transthoracic Doppler ultrasound of the coronary arteries.

Introduction

A study of the epidemiology of coronary heart disease over the past 40 years has provided data on the relationship between certain risk factors and the presence of clinical manifestations of coronary heart disease [3,5,8]. Modifiable risk factors include dyslipidemia, systemic hypertension, obesity, diabetes mellitus, high plasma fibrinogen levels and smoking [4,6,9]. Non-modifiable factors: gender (men with a life span of 30 years or more, women during menopause and postmenopause), age (the incidence of coronary heart disease increases in proportion to age), family history (presence of a history of coronary heart disease in parents under the age of 55 years)[1,2,7]. The biological substrate for the possibility of developing IHD is often cardiac remodeling according to the theory of cardiac vascular continuum with arterial hypertension, aortic defects, some forms of cardiopathy, anomalies of the coronary bed, etc.

The main causes of coronary heart disease are still 2 or simultaneously 3 of the following: stenosing atherosclerotic lesions of the coronary arteries, thrombosis or thromboembolism of the arteries, vasospasm of the coronary arteries. Purpose of the study. To determine the relationship between indicators of great vessel stiffness and traditional cardiovascular risk factors and the severity of coronary artery atherosclerosis, as well as their prognostic significance in patients with coronary artery disease. To evaluate the possibilities of drug correction of increased arterial stiffness in an outpatient setting.

Material and Research Method:

The study included 410 patients with coronary artery disease: 287 men and 123 women aged 39 to 78 years. 312 patients made up the long-term observation group. 128 patients were examined under “drug intervention” protocols, only 30 of them (nebivolol protocol) were included in the long-term follow-up group.

Research Results:

Large artery stiffness is associated with the severity of coronary atherosclerosis in men with coronary artery disease. SPV sq. is an independent marker of stenotic lesions of the coronary arteries, and its value above 12.4 m/s increases the patient’s chance of having coronary artery stenosis >75% by 4.6 times (sensitivity - 0.71, specificity - 0.71). Stiffness of the great arteries has been shown to be an independent predictor of prognosis in men with coronary artery disease. SPV sq. 14.0 m/s or more increases the risk of developing CVS by 4.6 times ($p < 0.001$), while maintaining its significance even after adjusting for traditional risk factors. At the same time, the relationship between classical modifiable risk factors and prognosis against the background of regular recommended therapy is not reaches the level of statistical significance (over an observation period of 3.5 years). In women with coronary artery disease, no connection was found between initial indicators of arterial stiffness and prognosis. The likelihood of developing cardiovascular complications in this group was determined by classical risk factors (family history, blood pressure level, total risk calculated using the SMART scale).

A decrease in arterial stiffness is a significant predictor of a favorable prognosis in patients with coronary artery disease of both sexes, regardless of the dynamics of other risk factors. No reduction in TPV pl. after 6 months, it increases the risk of developing cardiovascular disease in the next 3 years by 5.9 times in women and 3.8 times in men with coronary artery disease. Conclusion. The results of the study indicate that an adequate assessment of the risk of developing recurrent CV events in patients with coronary artery disease requires determining the severity of violations of the elastic properties of the main arteries.

During the work, the high information content of volumetric sphygmography, a simple non-invasive method for assessing arterial stiffness, was tested and proven. Reference values of PWV square, developed on the basis of data obtained on the relationship between the stiffness of the main arteries and the severity of atherosclerotic lesions of the coronary arteries, open up new opportunities for non-invasive detection of coronary atherosclerosis during outpatient examinations.

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