PROGNOSTIC VALUE OF INTIMA-MEDIA BRACHIOCEPHALIC VESSELS AS CARDIAC MARKER OF CORONARY ATHEROSCLEROSIS

Fedorov V.S., Trusov V.V.
Izhevsk State Medical Akademy,
Izhevsk, Russia

The purpose of this scientific research is to establish the correlation between the threshold values of the intima within the patients with ischemic heart disease(IHD) that have coronarography indexes. The research allows us to evaluate the intensity degree of atherosclerotic process of brachiocephalic vessels and its utility as an early indicator of the atherosclerosis treatment with IHD.

Methods of the research. 239 patients with IHD took part in the research, 117 of them had myocardium infarction of different difficulty. The check group was formed by 35 patients, healthy and similar in sex and age.

Coronary angiography was carried out for all patients in order to evaluate the intensity degree of the coronary arteries atherosclerosis. The thickness evaluation of the intima of brachiocephalic vessels was carried out via American ultrasonic scanner of expert class produced by «Zonar» with usage of the linear sensor in the frequency range of 7mhz. The evaluation of brachiocephalic vessels was carried out on double-ended basis for the front and rear carotid wall. The statistic processing of the material was carried out on the IBM computer in semi-automatic mode with usage of standard program pack «MS Excel 2003».

The results of the research. All patients, regardless of the final diagnosis were divided into 4 groups according to the values of intima thickness.

The first group ($n = 122$) was formed by the patients of younger age ($46,1 \pm 0,8$ years) who had intima thickness showings within 0,8 to 1,1 mm which is typical for healthy patients without any atherosclerosis and IHD signs. The occlusion of coronary vessels was not found by coronagraphy of any patient. The threshold index level of 1,2 mm is usually characterized by the initial thickening of brachiocephalic vessels intima level.

The second group ($n = 50$) was formed by the patients of older age group ($52,2 \pm 1$ year) with the confirmed diagnosis of IHD and stenocardia assaults who had intima thickness indexes within 1,3 to 1,5 mm.

The third group consisted of patients with acute myocardium infarction of various difficulty whose intima thickness levels were within 1,5–1,7 mm. The average age of the patients was practically the same with that of the second group ($51,3 \pm 0,8$ years).

The forth group ($n = 25$) was formed by the patients with the maximum index of intima thickness (1,8 mm and more). All of this group's patients had experienced difficult focal myocard infarctions with expressed affection of one or more coronary arteries.

The check group was formed by the patients within the age of $51,3 \pm 0,8$ years who had the intima thickness index within 0,8 to 1,2 mm.

While the threshold level of intima thickness was 1,3 mm the occlusions of 65% of right interventricular branch of the right coronary artery (RIVB of RCA) were revealed. At the same time right coronary artery (RCA) was affected of 40%. The increase in the percent affection of the coronary arteries occlusion degree took place along with the increase in the intima thickness level.

The maximum index of intima thickness that equaled 2,3 showed the maximum degree of the RIVB occlusion (80%) and the level of RCA that equaled 90%. However, most commonly, the affection of RIVB of RCA and the RCA itself takes place

Table 1

The frequency of the coronary arteries occlusion exposure

Localization of coronary arteries	Number of patients	Frequency of the coronary arteries occlusion(%)
Right interventricular branch of the right coronary artery (RIVB of RCA)	66	85,7±4,0%
Envelope branch of right coronary artery (EA)	33	42,9±5,7%
Right coronary artery (RCA)	34	44,2±5,7%
Left coronary artery (LCA)	7	9,1±3,3%