

FUNCTIONAL - STRUCTURAL CHANGES IN THE HEART IN PATIENTS WITH CORONARY ARTERY DISEASE AND DIABETES MELLITUS TYPE 2.

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Introduction: Due to the fact that the number of patients with diabetes mellitus type 2 (DM) with coronary artery disease is growing, there is an increase in the frequency of heart failure, which leads to a deterioration in the quality and life expectancy. The study of the structural and functional state of the myocardium is relevant.

Purpose of the study: To assess the effect of diabetes mellitus in patients with coronary artery disease on the structural, morphological and functional indicators of the condition of the myocardium.

Material and methods: The study included 90 patients aged 45-75 years. Of these, 45 patients with coronary artery disease with clinical manifestations of type 2 diabetes (group 1) and 45 patients with coronary artery disease without diabetes (group 2). Patients in both groups were comparable in terms of the degree of arterial hypertension, clinical manifestations of coronary artery disease and diabetes. All patients underwent laboratory and instrumental research methods. To assess the state of left ventricular (LV) myocardial function, echocardiography (ECHO CG) was performed. The mass of the LV myocardium was calculated using the RB Devereux formula. The presence of diabetes was diagnosed by hyperglycemia and glycosuria.

Indicators	Group 1	Group 2	P
PWTD, sm	1,18 ± 0,03	1,03 ± 0,02	p < 0,001
PWTS, sm	1,54±0,03	1,42±0,02	p=0,0021
IVST-S, sm	1,56±0,04	1,47±0,02	p=0,0040
EDV, sm	5,68±0,07	5,36±0,09	p=0,294
EDS, sm	3,51±0,08	3,81±0,09	p=0,994
EF,%	56,82±0,76	61,32±1,25	p=0,722
Average myocardial mass	309,14±11,9 8	276,42±9,3 6	p=0,001

Results of the study: Structural and morphological indicators, respectively, for the groups were: PWT-D, sm 1,18 ± 0,03 and 1,03 ± 0,02 (p < 0,001); PWTS, sm 1,54±0,03 and 1,42±0,02 (p=0,0021); PWT-D, sm 1,19±0,04 and 1,08±0,03 (p=0,0026); IVST-S, sm 1,56±0,04 and 1,47±0,02 (p=0,0040). In patients with coronary artery disease and diabetes and coronary artery disease without diabetes, statistically significant differences were revealed in the thickness of the posterior wall in systole and diastole of the left ventricle (PWT-S and PWT-D) and in the thickness of the interventricular septum in systole and diastole (PWT-S and PWT-D). Thus, in patients with coronary artery disease and diabetes, these indicators were significantly higher than in patients of group 2. The average myocardial mass in patients with manifestations of diabetes was 309,14±11,98 and was also significantly higher in patients without diabetes – 276,42±9,36 (p=0,001). Functional indicators were as follows: EDV, sm 5,68±0,07 and 5,36±0,09 (p=0,294); EDS, sm 3,51±0,08 and 3,81±0,09 (p=0,994); EF,% 56,82±0,76 and 61,32±1,25 (p=0,722). In patients with coronary artery disease and diabetes, there was a decrease in all functional indicators.

Conclusions: Type 2 Diabetes mellitus influenced both changes in the structural, morphological and functional parameters of the LV, manifested by an increase in the linear dimensions of the LV and myocardial mass and a decrease in functional indicators. Detection and timely treatment of diabetes can prevent the worsening of LV remodeling processes and the development of CHF.