TO STUDY ECHOCARDIOGRAPHIC INDICATORS OF THE HEART IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Introduction: Heart disease in diabetes mellitus (DM) occurs in approximately 76-92% of patients, but in most cases it occurs with erased clinical symptoms and is detected only during instrumental examination. In diabetes mellitus, heart disease includes ischemic heart disease (IHD), heart failure, atherosclerosis and diabetic cardiomyopathy, which can manifest as painless forms of myocardial infarction, since diabetes damages the nerves of the heart [1,2,4]. Echocardiography (EchoCG) is of great value in diabetes mellitus, since it allows to detect diabetic cardiomyopathy and other heart disorders, even before the appearance of obvious symptoms, such as shortness of breath or chest pain. This is due to the fact that diabetes can cause structural changes and dysfunction of the heart muscle (myocardium), leading to diastolic disorders, heart failure, arrhythmias and an increased risk of heart attack [5,7]. Echocardiographic examination with determination of the type of left ventricular remodeling (concentric hypertrophy) allows to identify a group of patients with type 2 diabetes with a higher cardiovascular risk [3,6].

The aim of the study was to study the features of left ventricular (LV) remodeling and changes in diastolic function of the ventricles of the heart according to echocardiography data in patients with type 2 diabetes mellitus with diabetic nephropathy.

Materials and methods of research: The study involved 50 patients (22 men and 28 women) with type 2 diabetes mellitus who were undergoing inpatient treatment at the Republican Scientific and Practical Center of Nephrology based at the III-clinic of TMA. The average age of the patients was 52.1±1.4 years, the duration of type 2 diabetes mellitus was 14.4±0.7 years, and the duration of DN was 10.1±0.5 years. The patients underwent general clinical and biochemical analyses, echocardiography in M and B modes, and Doppler echocardiography.

Results obtained: According to the results of our study, normal LV geometry was noted in 7 (14%) patients, concentric LV myocardial hypertrophy in 19 (38%) patients, concentric LV myocardial remodeling in 14 (28%) patients, and eccentric LV myocardial hypertrophy was observed in 10 (20%)

individuals. According to Doppler echocardiography data, 28 (56%) patients with type 2 diabetes mellitus with DN were found to have impaired diastolic function of the LV: E was 0.66 ± 0.02 m/s, E/A – 0.82 ± 0.05, DT – 231.7 ± 12.5 ms, IVRT – 101.0 ± 4.6 ms. In 22 patients (44%), there was a violation of the diastolic function of the right ventricle (RV): E - 0.55 ± 0.02 m / s, E / A - 0.97 ± 0.05, DT - 229.8 ± 22.7 ms, IVRT - 91.0 ± 3.8 ms. Violations of the diastolic function of the LV and RV were noted according to the first type.

Conclusion: Thus, in patients with type 2 diabetes mellitus with the presence of DN, changes in intracardiac hemodynamics were observed, consisting of remodeling of the LV myocardium and impairment of diastolic function of the ventricles of the heart.

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