

## CHARACTERISATION OF CARDIOVASCULAR LESIONS IN PATIENTS WITH COMORBID CONDITIONS

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**Relevance.** Comorbidity is the presence of an additional clinical picture that already exists or can appear independently, in addition to the current disease, and is always different from it. It is known that comorbidity in modern conditions is considered as one of the conditions for realisation of an unfavourable course of any acute and chronic disease. This position is especially true for cardiovascular pathology, since successes in the treatment of its acute and chronic forms are naturally accompanied by the aging of the patient population and manifested by the growth of comorbid conditions. In this regard, the change in the 'portrait' of a patient with cardiovascular diseases, primarily CHD, that has occurred over the last decades is actively discussed. Recently, not only the fact of comorbidity in CHD, but also the evaluation of comorbidity phenotypes has been discussed. The importance of evaluation of comorbidity indicators and its phenotype in relation to the prognosis of patients with CHD has been shown. A striking example of this is the combination of CHD and carbohydrate metabolism disorders. Current recommendations of expert communities emphasise the need for active diagnosis of carbohydrate metabolism disorders in patients with documented CHD. This approach is important from the position of effective cardiovascular risk management, determination of target values of blood pressure and glycaemia level, selection of effective and safe approaches to the choice of drug therapy. Another example of comorbidity in CHD, requiring active diagnostic and therapeutic interventions, is any manifestation of multifocality of atherosclerosis. Indeed, atherosclerosis is a systemic disease with simultaneous involvement of several vascular basins. Most often in a patient with clinical manifestations of coronary atherosclerosis, active diagnostic tactics reveal lesions of brachiocephalic arteries and arteries of the lower extremities. Type 2 diabetes mellitus (DM2) is a severe progressive chronic disease that is a risk factor for heart failure and cardiovascular complications. By the time DM2 is diagnosed, half of patients already have complications that lead to reduced quality of life, disability and premature death. Cardiovascular disease is the main cause of death in 52% of patients with diabetes. Currently, diseases of the circulatory system occupy the first place in the structure of adult mortality in the world. The high proportion of diseases of the cardiovascular system requires a serious attitude not only to treatment and rehabilitation, but also to prevention, prevention of complications in patients who suffer from this pathology. An important problem of modern medicine is the development of methods for predicting the development of complications of cardiovascular diseases.

**The aim of the study** was to investigate the peculiarities of cardiovascular lesions in patients with DM and comorbid AH.

**Materials and Methods.** The study was carried out on the basis of the Department of Internal Medicine of TMA. Thirty-two patients with DM2 were examined: 17 women and 15 men. All patients had AH. All patients underwent clinical and laboratory examination with careful analysis of medical records, evaluation

of comorbid pathology, echocardiography in standard positions. The main geometric and functional parameters of myocardium were evaluated.

The studies were performed according to the recommendations of the American Society for Echocardiography. Echocardiography (ECHO-CG) parameters were evaluated. End-diastolic (EDR), systolic dimension (SD), end-diastolic (ED) and end-systolic (ES) volumes, LV myocardial mass (LVMW), LV ejection fraction (EF) were measured. We calculated the ratio of the obtained indices to the body surface area (LV myocardial mass index (LVMI), etc.).

**Results.** When assessing the clinical picture of the course of DM2 and comorbid AH, a high degree of concomitant pathology was revealed. When assessing the peculiarities of clinical and laboratory course of DM2 in patients, it was revealed that obesity stage 1 was the most frequent (in 52% of the subjects). Atherosclerotic lesions of peripheral arteries were found among the most frequent comorbid pathologies. Atherosclerosis of the lower extremities was found in 28% of the examined patients, cerebrostenic syndrome - in 34% of patients, IBS - in 46% of patients. Sensomotor neuropathy was detected in every third patient (37%), polyneuropathy - in every fourth patient (26%). Nephropathy was also detected in every fourth patient (in 26% of subjects). The most rare comorbid pathologies not associated with DM2 and AH can also be identified. Stage 3 obesity and morbid obesity were found in 7% of the examined patients. The following pathologies were detected in 4% of patients: cholelithiasis, chronic kidney disease of the 1st degree. Chronic pyelonephritis and anaemia (mild) were diagnosed in 7% of the examined patients.

**Conclusions.** In comorbidity of DM2 and AH, a high prevalence of atherosclerotic and non-atherosclerotic lesions of the cardiovascular system was revealed, which are manifested by cerebro-vascular disease, peripheral atherosclerosis, and coronary heart disease. In addition, a high degree of obesity was detected in patients, which may also be a factor in the progression of cardiovascular pathology. The assessment of left ventricular myocardial remodelling in patients with DM and AH revealed a characteristic increase in left ventricular myocardial mass and left ventricular myocardial mass index, which is manifested by a high prevalence of concentric hypertrophy (in every second patient). In the remaining studied patients, cardiac changes were characterised by eccentric hypertrophy and concentric remodelling.

Thus, the presence of DM2 and AH leads to changes in cardiac structure in the form of myocardial remodelling and vascular remodelling in the form of atherosclerotic process.

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