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## **MYOCARDIAL FIBROSIS AND RENAL DYSFUNCTION IN PATIENTS WITH ARTERIAL HYPERTENSION AND TYPE 2 DIABETES MELLITUS**

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The aim of the work is to study the features of cardiorenal interaction in patients with AH and type 2 DM on the basis of the analysis of the concentration of stimulating growth factor expressed by gene 2 and its relationship with indicators of intracardiac hemodynamics, as well as the concentration of highly sensitive markers of renal damage, neutrophilic gelatinase-associated lipocalin and cystatin C.

The study included 76 patients, from which 48 patients with stage II grade 2 AH and moderate type 2 DM, subcompensated (main group) and 28 patients with stage II AH without concomitant type 2 DM (comparison group). The control group consisted of 20 almost healthy individuals (mean age  $54.5 \pm 3.1$  years).

All examined persons underwent general clinical examination, determination of indicators of carbohydrate metabolism and lipid profile; insulin resistance was assessed using the HOMA-IR index. Serum levels of soluble gene-expressed stimulating growth factor receptor 2 (sST2), cystatin C and neutrophilic gelatinase-associated lipocalin (NGAL) were measured using kits for enzyme-linked immunosorbent assay. The structural and functional parameters of the heart and the diastolic function of the left ventricle were analyzed using echocardiography with Doppler sonography.

It was found that in patients with AH in combination with type 2 DM, concentric and eccentric LV hypertrophy, as well as diastolic dysfunction (pseudonormal type of blood flow), are significantly more often found in comparison with the patients with AH without type 2 DM. In patients with AH and type 2 DM, compared with the patients without diabetes, higher levels of neutrophilic gelatinase lipocalin (NGAL), the stimulating growth factor expressed by gene 2 (sST2) in blood serum were observed. When AH is combined with type 2 DM, higher concentrations of the sST2 fibrosis marker are detected with more pronounced left ventricular hypertrophy and left ventricular diastolic dysfunction in comparison with the patients without diabetes.

Therefore, the analysis of clinical data, indicators of carbohydrate metabolism, structural and functional indicators and parameters of diastolic function, along with the determination of the levels of neutrophilic gelatinase lipocalin (NGAL), stimulating growth factor expressed by gene 2 (sST2) allows a differentiated approach to the strategy of management of the patients with AH and type 2 DM.