THE RELATIONSHIP BETWEEN HYPERLEPTINEMIA AND DIASTOLIC DYSFUNCTION IN PATIENTS WITH DIABETES MELLITUS TYPE 2

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The risk of myocardial pathology increases several times when type 2 diabetes mellitus (T2DM) is combined with other metabolic disorders. But the role of adipokine leptin into the development of diastolic dysfunction, typical for DCMP, is not well studied.

The purpose of our research was to evaluate the interconnection between the leptin level and markers of diastolic dysfunction in patients with T2DM.

Methods. 102 patients (average age of 49.73 ± 1.85 years) with T2DM of moderate severity without signs of coronary artery disease, hypertension and heart failure were examined. Duration of T2DM was 4.55 ± 1.02 years. The level of leptin was determined by immune-enzyme assay. The maximal velocity of early diastolic stream E; stream velocity, caused by atrial systoles A; deceleration time of early diastolic filling (DT); and an E/A ratio were measured by heart sonography. The control group included 20 healthy individuals of corresponding age.

Results. The mean level of leptin composed 18.94 ± 0.63 ng/ml in the group of patients with T2DM and 7.59 ± 0.35 ng/ml ($p<0.05$) in the control group. The mean level of E/A ratio was 0.83 ± 0.02 ($p<0.05$) in the group of patients and 1.4 ± 0.075 in the control group. The mean level of DT composed 238.95 ± 1.58 ms in the group of patients and 182.2 ± 3.7 ms in the control group. A significant reliable correlation was revealed between leptin and E/A (R =-0.274 ($p<0.05$)), between leptin and DT (R=0.205($p<0.05$)) in the group of patients with T2DM.

Conclusion. The received data prove that hyperleptinemia is probably one of the pathogenetic mechanisms of DCMP. We consider that hyperleptinemia participates in the development of structural pathology of the myocardium, which leads to the formation of chronic heart failure in patients with T2DM.