

The interrelation between diastolic function indexes and interleukin-6 level in patients with metabolic cardiomyopathy

Zhuravlyova L., Sokolnikova N.

Kharkiv National Medical University

Myocardial injury in diabetes mellitus type 2 (DM-2) is associated not only with insulin resistance, hyperinsulinemia and glucose toxicity, but also with the action of anti-inflammatory cytokines, which accelerate the development of atherosclerotic changes. One of the representatives of cytokines is interleukin-6 (IL-6). Its activation is a marker of disease severity and the predictor of development of late cardiovascular complications. However, the extent of IL-6 involvement into the development of diastolic dysfunction, typical for metabolic cardiomyopathy, is not well studied.

Therefore, the **aim** of our research was to evaluate the correlation between the maximal velocity of early diastolic stream E – stream velocity caused by atrial systoles A ratio and the level of IL-6 in patients with DM-2.

Methods. 38 patients (35-60 years old) with DM-2 without severe complications were examined. Duration of DM-2 was from 1 to 8 years. The level of IL-6 was determined by immune-enzyme assay. The maximal velocity of early diastolic stream E; stream velocity, caused by atrial systoles A; and an E/A ratio were measured by heart sonography. Control group included 20 relatively healthy individuals. Correlation analysis was applied to all studied indexes. Correlation coefficient and degree of reliability of received data were counted.

Results. Mean level of E/A composed $0,93 \pm 0,04$ ($p<0,05$) in the group of patients with DM-2 and $1,4 \pm 0,075$ ($p<0,05$) in the control group. The mean level of IL-6 counted $10,7 \pm 0,27$ ($p<0,05$) in group of patients with DM-2 and $8,83 \pm 0,22$ in the control group ($p<0,05$). A significant reliable negative correlation was revealed between E/A ratio and IL-6 level (Spearman's rank correlation coefficient $R -0,32$ ($p<0,05$)).

Conclusion. The received data prove that IL-6 contributes the development of diastolic dysfunction in patients with metabolic cardiomyopathy and DM-2. IL-6

favours the development of diastolic dysfunction first, following systolic dysfunction in patients with DM-2.