CORRELATION BETWEEN BODY MASS INDEX AND INDICES OF DIASTOLIC FUNCTION IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

N.V. Sokolnikova, Rashad I. Salameh
Kharkiv National Medical University, Kharkiv

Type 2 Diabetes mellitus (DM2) is a proven risk factor for development of metabolic cardiomyopathy. The majority of patients with DM2 have an elevated body mass index which is a risk factor for development of cardiovascular diseases. However, the relationship between the development of diabetic cardiomyopathy as a primary myocardial injury in DM2 and an elevated body mass index in patients with DM2 has not been yet thoroughly studied.

The aim of the study was to define the correlation between the body mass index (BMI) and the indices of left ventricular diastolic function in patients with DM2.

Materials and methods. 102 patients aged 35-65 with moderately severe DM2 without serious diabetes complications with the prescription of diabetes from 1 to 9 years underwent measurements of height and weight with subsequent calculation of body mass index (BMI), the echocardiographic method was used to evaluate maximal early diastolic flow velocity (E), peak flow velocity during atrial systole (A) as well as the E/A ratio, duration of isovolumic relaxation time (IVRT) and the deceleration time of diastolic flow (DT).

Results. Considering that BMI was not normally distributed, Spearman's rank correlation coefficient (R) was used as a correlation measure. The study of the correlation between BMI and E/A revealed the presence of significant ($p<0,05$) correlations ($R= - 0,23$), the significant correlation ($R = 0,21$ ($p<0,05$)) was also found between BMI and IVRT, the significant correlation ($R = 0,21$ ($p<0,05$)) was also found between BMI and DT. However, according to Cheddock scale the value of these correlation coefficients can be considered negligible ($R<0,3$).

Conclusions. The obtained results certify that the patients with DM2 accompanied by the elevated body mass index have a higher risk for development of myocardial injury. Despite the fact that the obtained correlation is negligible, its significant presence indicates that the elevated body mass index in patients with DM2 is an additional risk factor for development of diastolic dysfunction.