

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

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The mechanisms of myocardial damage are complex and studied insufficiently in patients with diabetes mellitus type 2 (T2DM) with overweight. At the same time the extent of adipokines leptin and resistin involvement into the formation of diastolic dysfunction (DD) as an early manifestation of the development of chronic heart failure in patients with T2DM remains understudied.

The purpose of the study was to evaluate the relationship between the state of leptin and resistin activity and DD in patients with T2DM with normal and overweight.

Methods. 94 patients with DM 2 without systolic dysfunction were randomized into 2 groups: group 1 amounted 34 patients with T2DM with a body mass index (BMI) of less than 25 kg/m², the group 2 consisted of 60 patients with a BMI above 25 kg/m². The levels of leptin and resistin were determined by immune-enzyme assay. Echocardiographic method was performed to measure peak velocity of early diastolic filling flow (peak E), peak velocity of late diastolic filling flow (peak A), the peak E/peak A ratio (E/A), and deceleration time of early diastolic filling (DT).

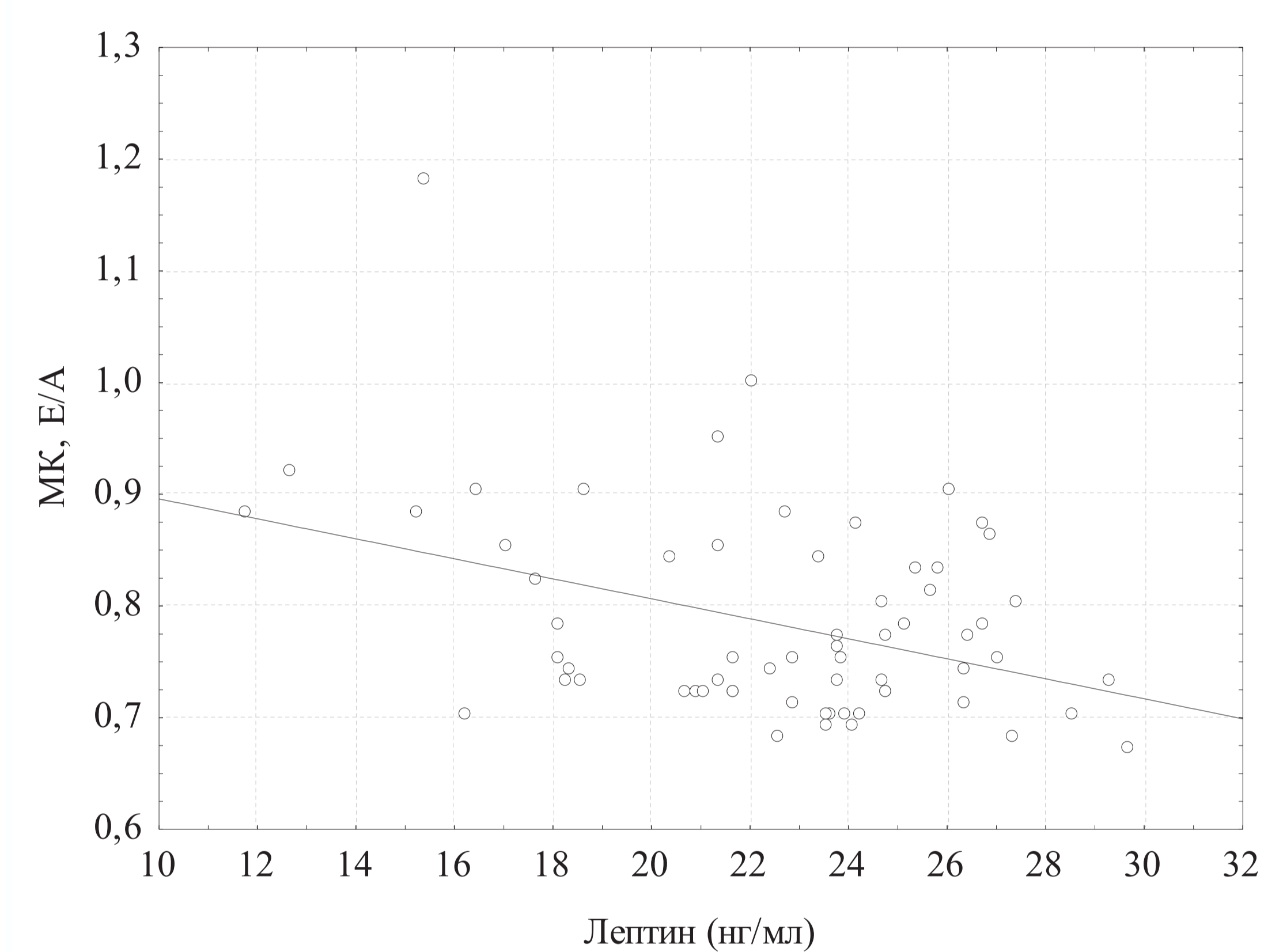


Figure 1. Correlation between E/A and leptin

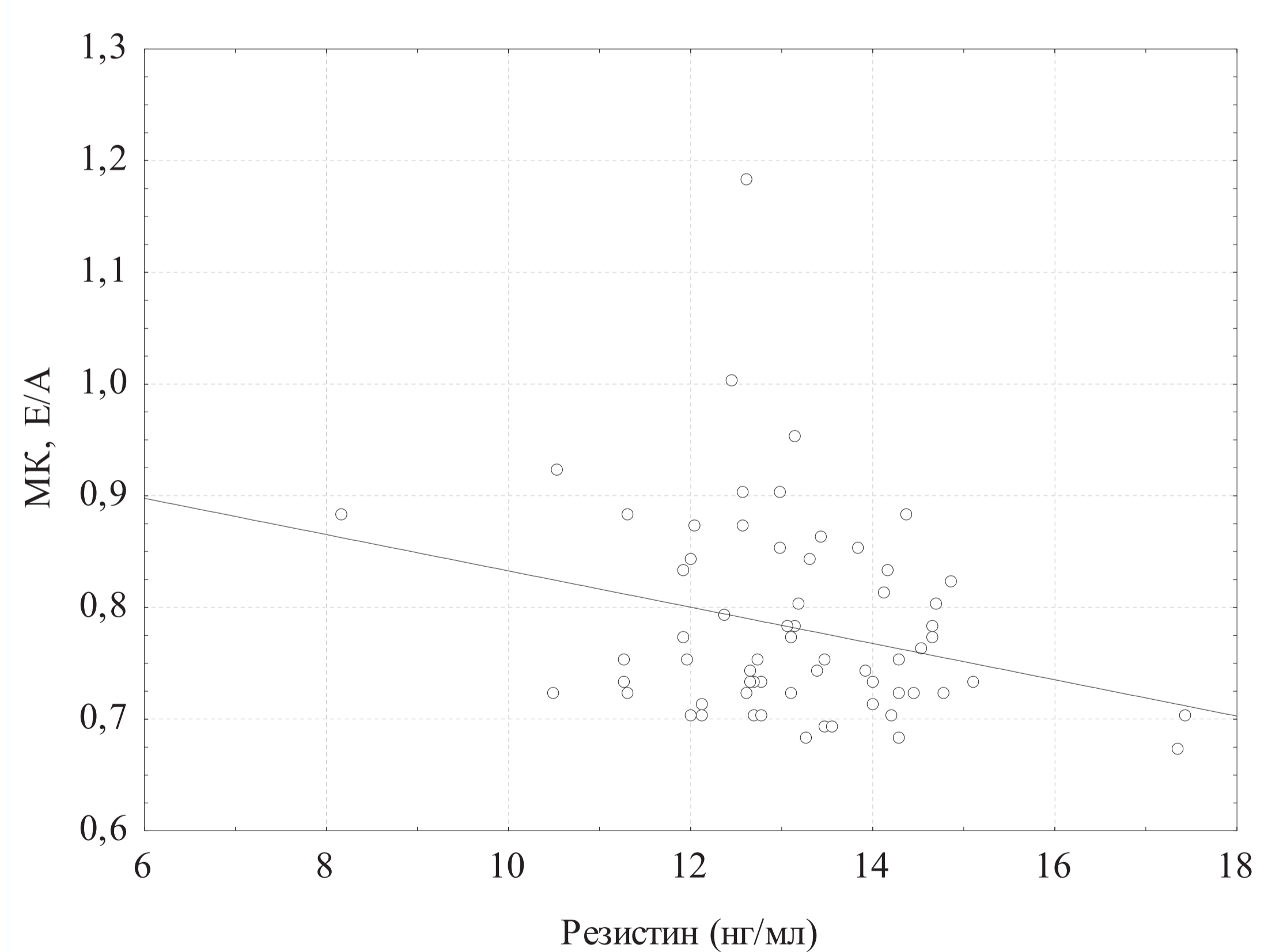


Figure 3. Correlation between E/A and resistin

Results. In the 1st group the level of BMI was 24.47±0.52 kg/m², leptin - 11.76±0.68 ng/ml, resistin - 10.17±0.35 ng/ml, the value of the E/A - 0.94±0.04, DT - 230.47±3.51 ms. In the 2nd group the level of BMI was 34.49±0.68 kg/m², leptin - 22.75±0.49 ng/ml, resistin - 14.19±0.18 ng/ml; the value of the E/A - 0.81±0.03, DT - 241.72±2.18 ms. In the 1st group a significant reliable correlation was not revealed. In the 2nd group a significant reliable correlation was revealed between E/A and leptin ($R=-0.27$ ($p<0.05$), Fig. 1); between DT and leptin ($R=0.35$ ($p<0.05$), Fig. 2); between E/A and resistin ($R=-0.26$ ($p<0.05$), Fig. 3); between DT and resistin ($R=0.28$ ($p<0.05$), Fig. 4).

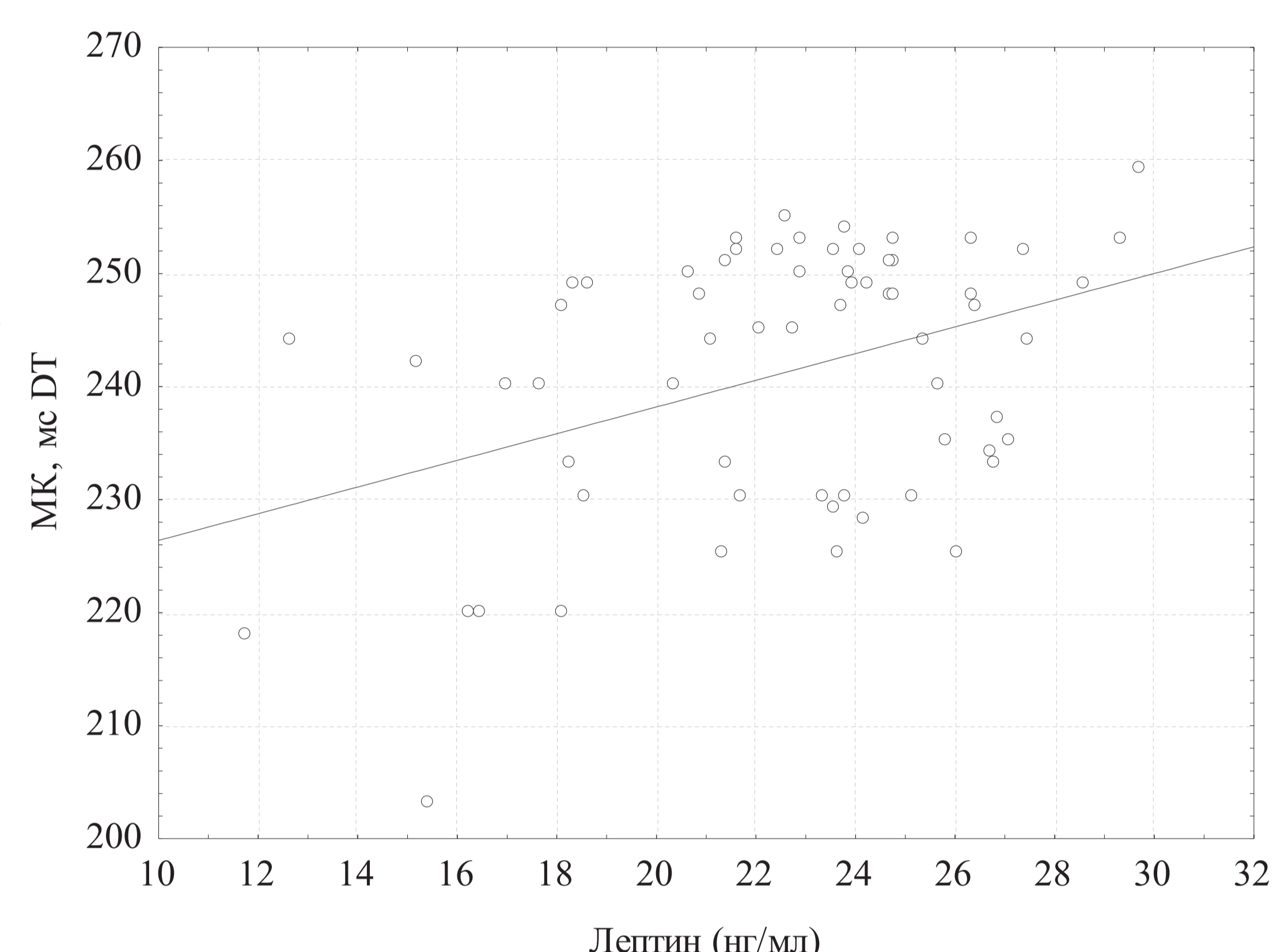


Figure 2. Correlation between DT and leptin

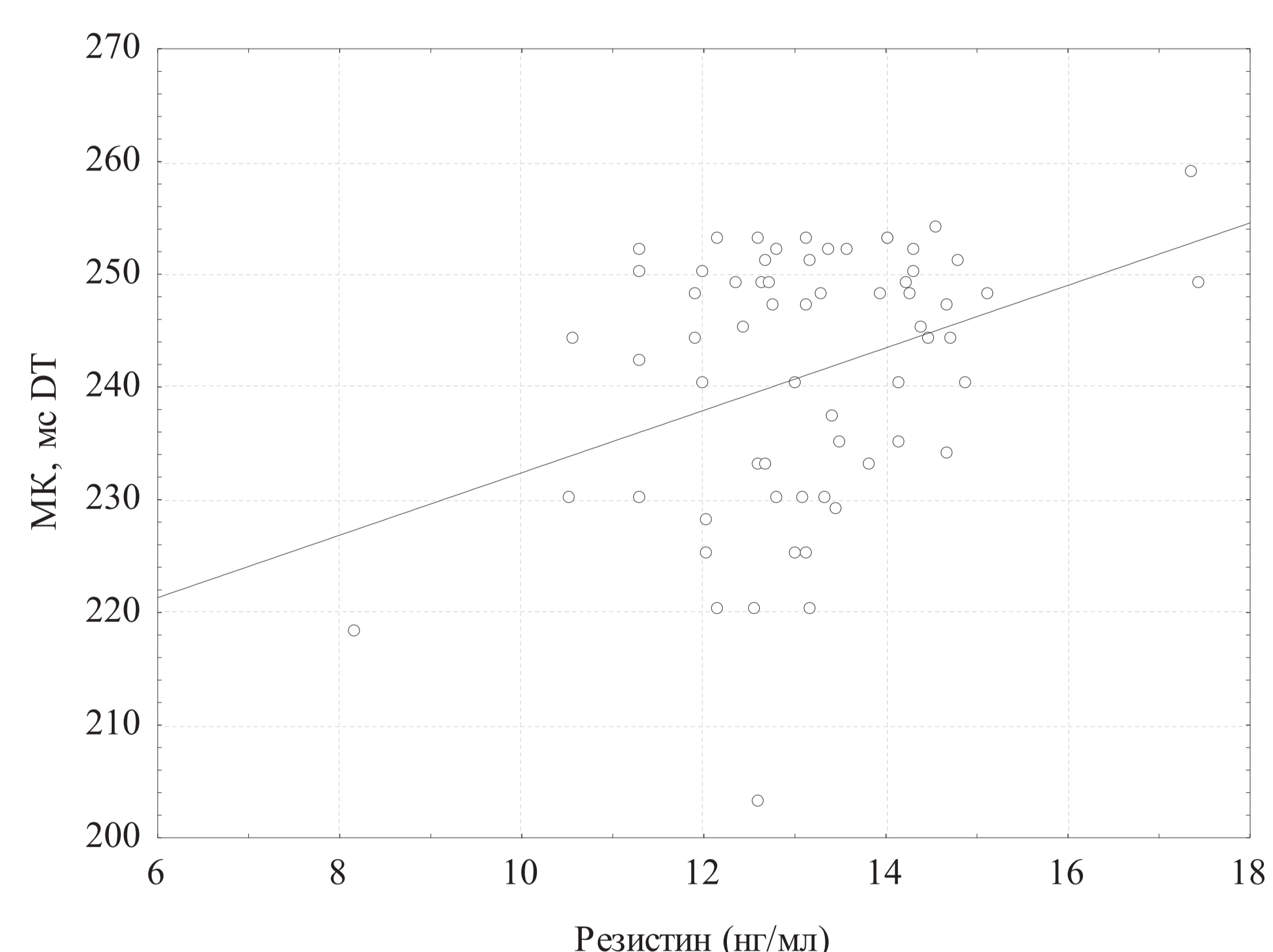


Figure 4. Correlation between DT and resistin

Conclusion. Hyperleptinemia and elevated level of resistin make a significant contribution to the DD in patients with T2DM with overweight. Given that the most of patients with T2DM have an increased body weight, and poor prognosis regarding the development of cardiovascular disease, it is necessary to continue research in this direction.

Declaration of interest: There are no relevant conflicts of interest to disclose.

