

## **Relationship leptin and body mass index in patients with diabetes mellitus type 2**

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Overweight plays an important role in the development of cardiovascular complications in patients with diabetes mellitus type 2 (DM-2). The risk of acute complications (myocardial infarction, stroke) increases along with the body weight gain. Leptin is a hormone produced by adipose tissue. Experimental and clinical studies indicate various negative effects of leptin and leptin resistance.

**The aim of the study** was to evaluate the correlation between leptin and the degree of weight gain in patients with DM-2.

**Materials and methods.** 83 patients with DM-2 and a high body mass index (BMI > 25) were examined. The course of diabetes varied from 1 to 9 years. The mean age of patients was 35-65. Height, weight of patients were measured and body mass index (BMI) was calculated. Leptin has been identified with ELISA sandwich method using a set of reagents «DRG». The control group consisted of 20 healthy individuals with BMI < 25 kg/m<sup>2</sup>. The groups were comparable in age and gender.

**Results.** The average level of leptin was  $22,3 \pm 1,4$  ng / ml ( $p < 0.05$ ) in patients with DM-2 and  $7,6 \pm 0,35$  ng / ml ( $p < 0.05$ ) in a control group, the average BMI was  $32,3 \pm 0,6$  kg/m<sup>2</sup> ( $p < 0.05$ ) in patients, and  $23,7 \pm 0,3$  kg/m<sup>2</sup> ( $p < 0.05$ ) in a control group. The study of correlation between BMI and leptin levels was performed using the Spearman's coefficient. A highly significant correlation between leptin and BMI revealed (Spearman's coefficient of 0.89 ( $p < 0.05$ )).

**Conclusions.** A highly significant relationship between BMI and leptin level was revealed in patients with DM and excessive body mass. The level of leptin was increasing along with body mass gain. However, after achievement of BMI > 38 level of leptin didn't increase further, which is the sign of leptin resistance development.