



## PREVALENCE OF DYSLIPIDEMIA IN PATIENTS PRIOR TO BARIATRIC SURGERY IN UZBEKISTAN

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**The purpose of the study** is to investigate lipid profile of patients with diabetes mellitus 2 type (DM 2) and morbid obesity before and after bariatric surgery.

**Materials and methods.** We evaluated 50 patients with obesity during August 2021 to December 2021. The patients were divided into 2 groups: Mean age of patients was 48,3 years-old. Control group constituted by 20 patients with obesity. The patients were divided by BMI into 2 groups:

Group 1 – 30 patients with diabetes mellitus and obesity. Mean age was 46,4 ± 0,51 years old.

Group 2 – 20 patients with morbid obesity and mean age 38,6 ± 0,64 years old.

All patients underwent clinical and biochemical evaluations including endocrine check, lipids profile, hormonal profile, glucose profile. They underwent anthropometric examination, waist circumference (WC), hip circumference (HC), waist-hip ratio, questioning and other studies.

**Results.** The study of anthropometry indicators revealed that the third degree of obesity in both groups were predominant (Group 1: 67%, Group 2: 80%). The comparative analysis of the lipid profiles before the initiation of treatment revealed statistically significant disparities between the two patient groups and reference norms. In Group 1, the mean total cholesterol was 6.25±0.17 mmol/L, which was significantly higher than the reference range of 3.4-5.2 mmol/L (p<0.05). Group 2 demonstrated a further elevation in total cholesterol with a mean value of 7.03±0.25 mmol/L (p<0.05). Triglyceride levels were elevated in both groups, with Group 1 showing a mean level of 2.01±0.11 mmol/L and Group 2 even higher at 2.32±0.14 mmol/L, both surpassing the upper normal limit of 1.7 mmol/L (p<0.01). High-density lipoprotein (HDL) levels were below the recommended threshold of 1.6 mmol/L, with Group 1 at 1.02±0.04 mmol/L and Group 2 at 1.06±0.04 mmol/L (p<0.05). Low-density lipoprotein (LDL) concentrations also exceeded the normal



range (2.4-5.4 mmol/L) with Group 1 recording  $6.18 \pm 0.14$  mmol/L and Group 2 at  $7.09 \pm 0.16$  mmol/L ( $p < 0.05$ ).

**Conclusions.** The lipid profile analysis performed on two various groups of Uzbek patients scheduled for bariatric surgery indicates a substantial prevalence of dyslipidemia characterized by elevated levels of total cholesterol and triglycerides, as well as low concentrations of high-density lipoprotein (HDL). The findings suggest that third-degree obesity in these patients is frequently accompanied by serious lipid metabolism abnormalities, which are significantly beyond the normal ranges. These deviations highlight the critical need for early intervention and the potential for bariatric surgery to serve as a corrective measure not only for weight reduction but also for the amelioration of associated metabolic disorders. The study underscores the importance of rigorous preoperative evaluation and postoperative follow-up to address and manage the lipid metabolic derangements, ultimately aiming to reduce the cardiovascular risks associated with morbid obesity. The statistical significance of these deviations from the norm indicates a clear need for targeted therapeutic strategies tailored to the metabolic profiles of obese patients in Uzbekistan.

**Keywords:** morbid obesity, lipid metabolism, insulin resistance, anthropometry