

Short Communication

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Can Metabolic Surgery is the Main Treatment for Type 2 Diabetes in Patients with the Metabolic Syndrome?



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Introduction

The World Health Organization (WHO) declared obesity an epidemic of the 21st century. According to WHO, about 30% of the world's population (more than 2 billion people) are considered overweight [1,2]. Obesity, atrial hypertension (AH), diabetes mellitus type 2 (DM 2), and dyslipoproteinemia are the main components of metabolic syndrome (MS), which is the leading risk factor for cardiovascular disease. Complications of MS cause a high mortality rate among working-age population [3,4]. Among obese patients about 80-90% of cases occur in Diabetes Mellitus type 2 (DM 2). By 2025, the WHO predicted increase in DM 2 to 380 million. The surgical correction of DM 2 is gradually becoming routine, but there are no clear criteria for the use of different bariatric procedures in the control of blood glucose levels [4,5].

Aim

To evaluate the effectiveness of various methods of bariatric surgery in the correction of glycemia.

Material and Methods

All patients operated on the period 2004-2016. Among the 1225 patients operated formed 2 groups of 335 (27.3%) cases with the original violation of glycemia (DM 2 type, impaired glucose tolerance -IGT). First - 321 (95.8%), which carried out various operations: LAGB 84(26.1%), LSG 132(41.1%); LRYGB 105 (32.7%), including with the use of technology Viking 3D and robotics Da Vinci. Second - 14 (3.9%) with an initial BMI

<35 (28, 5-34, 2kg /m²): LRYGB - in 2(16.6%), LSG - in 9(58.3%), LAGB - 3(25%). In addition to routine examinations determined by glucose, insulin, C-peptide, HbA1C, HOMA index, % EBMIL, adipokines and gastrointestinal hormones. Satisfactory results were considered to achieve euglycemia: the level of HbA1c <6, 5% at 1 year after surgery, reduce the dosage or cancel receiving oral medication and insulin. Unsatisfactory results - HbA1c >6, 5%, continued taking the drug, which was interpreted as the low efficiency of the operation (at the continuing violations of blood glucose levels associated with obesity).

Statistical Analysis

We analyzed the data using descriptive and analytical statistics: independent samples t test, one-way ANOVA and χ^2 . Statistical significance was considered when $p < 0.05$.

Results

The effect of LAGB in influencing blood glucose levels directly correlated with the degree of reduction of BMI, which may be associated with the process of lipolysis, resulting in the reduced amount of visceral fat depots. It minimizes to the year due to the young women with a BMI <43 kg/m², and then recovered (HOMA 11.59±6). Effect LSG advancing from the first days after. By the end of the year have stabilized, but later acquired a tendency to recovery among patients with initial BMI >48 kg/m². The operation leads to improvement of all parameters (HOMA 7, 34±5, 76 in the year after surgery), which does not allow to consider it only as restrictive, it does not yet have a sufficient

explanation. After LRYGB, 91% operated, from the first days after the operation achieved good effect, traceable entire observation period (remission), HOMA index $4, 24 \pm 2, 7$.

Conclusion

To correct levels of glycemia operation LAGB ineffective. Performance LSG possible in younger age groups. LRYGB operations characterized by the highest efficiency. Bariatric surgery can potentially be of interest in the treatment of patients with DM 2 type. Use of bariatric surgery with an initial BMI of 35 and $> \text{kg/m}^2$ is possible without preliminary conservative treatment.

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