

20TH GLOBAL OBESITY MEETING

August 24-25, 2018 Singapore

Effect of intra-gastric balloon installation and laparoscopic sleeve gastrectomy to comorbidity reduction and cardiometabolic disease staging in 6 month after procedure

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Background: Achieving a weight loss is an important goal of bariatric surgery, given the increased risk for weight-related morbidity and mortality. The most common comorbidity at obesity is arterial hypertension, diabetes, Non-Alcoholic Fatty Liver Disease (NAFLD), depression. Article is devoted to evaluation of comorbidity in patients with obesity 3 after weight loss after Laparoscopic Sleeve Gastrectomy (LSG) and Intra-gastric Balloon Installation (IBI).

Objective: To determine effect of Laparoscopic Sleeve Gastrectomy (LSG) and Intra-gastric Balloon Installation (IBI) to weight loss and comorbidity in patients with obesity 3.

Methods: A total of 20 patients mean age 34.7 ± 2.5 years; 80% female, BMI= 49.4 ± 2.5 kg/m², 6 of them were with extremely high weight (BMI= $62.1-75.4$ kg/m²). Intra-gastric balloon (Allergan Inc., USA) was installed to patients with extremely high BMI (n=6), another patients were undergoing laparoscopic sleeve gastrectomy (n=14). Comorbidities were evaluated according to cardiometabolic disease staging.

Results: It is established, that adiposity of 3 (BMI 49.4 ± 2.5 kg/m²) associates with hyperlipidemia/hypertriglyceridemia in 85% of cases, diabetes mellitus-2/glucose intolerance- in 50%, arterial hypertension in 45%, Non-Alcoholic Fatty Liver Disease (NAFLD) in 35% of cases. Laparoscopic sleeve gastrectomy and intra-gastric balloon installation allow to achieve weight loss on 21.1% and 16.2% vs. initial weight, LSG and IBI were similar effective to weight loss ($p > 0.05$) that caused decreasing of comorbidity: Glucose intolerance is reduced in 2 times, arterial hypertension in 3 times, dyslipidemia in 1.9 times; NAFLD in 1.8 times in 6 months after intervention. LSG and IBI allow improving parameters on scale cardiometabolic disease staging, having achieved zero cardiometabolic risk at 35% of patients and at other patients' transition in easier of its stage. Weight loss and reduction of comorbidity after LSG and IBI are combined with decrease of pro-inflammatory cytokines; IL-6, TNF-a and C-reactive protein in blood serum.

Conclusion: LSG and IBI were similar effective to weight loss ($p > 0.05$) that caused decreasing of comorbidity: Glucose intolerance is reduced in 2 times, arterial hypertension in 3 times, dyslipidemia in 1.9 times, NAFLD in 1.8 times in 6 months after intervention. IBI should be recommended as 1st step of obesity treatment in patients with extremely high weight, because this procedure causes decreasing of comorbidity and perioperative risk.

Biography

Makhmudov U M has completed his Doctor of Philosophy degree in 2005. In 1995 he has graduated from the Tashkent Pediatric Medical Institute. He is a Senior Researcher at the Department of Endovascular Surgery and is engaged in bariatric surgery since 2014.

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