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*Temat: „Ocena efektów leczenia operacyjnego chorych z otyłością olbrzymią w zależności od modyfikacji techniki operacyjnej rękawowej resekcji żołądka”*

### **SUMMARY**

Obesity, as a growing health, but also social and economic, issue becomes an epidemic according to recent report of World Health Organization. According to its definition, obesity is an inadvisable gain of body weight connected with supplying higher amounts of calories than human organism demands. The issue of obesity is connected not only with excessive body mass gathering. It is mainly related to organism hemostasis disorders and development of co-morbidities such as hypertension, type 2 diabetes, atherosclerosis, neoplasm or depressive disorders.

Attempts of dietetic and pharmacological treatment of obesity results usually in low efficiency and many patients regain weight after its loss as a result of preservative treatment. Only method with scientifically proved efficiency, both, in body mass loss and remission of co-morbidities, is surgical treatment. Laparoscopic sleeve gastrectomy (LSG), combining restrictive mechanism and the influence on neurohormonal balance, is recently a leading method in metabolic surgery. There are no standards of operative technique for LSG so far, regarding the diameter of stomach left. The influence of technique modification on metabolic effect has not been described clearly.

The aim of this dissertation was to evaluate metabolic effect in patients with morbid obesity depending on operative technique of sleeve gastrectomy.

The study included 120 patients with morbid obesity who were divided into 3 groups depending on the size of used calibrating tube of left fragment of the stomach (32Fr, 36Fr, 40Fr). Statistical analysis of following body mass measures has been conducted: BMI, %EBL, %EWL as well as blood concentrations of fasting glucose and insulin, glycated hemoglobin, HOMA-IR, ALT, AST, total cholesterol and its fractions, CRP before the surgery and 1, 3 and 6 months after. Statistical significance level has been accepted as  $p < 0.05$ .

Statistically significant body mass and BMI loss has been proved in 6-months follow-up, the highest in the I group where the smallest calibration tube has been used (32Fr). Body mass and BMI loss

has been calculated using %EWL and %EBMIL. Statistically significant decrease of both parameters has been noted in examined period, the highest in the I group (32Fr).

Also parameters of carbohydrate balance have been statistically analyzed. The highest decrease of glucose concentration has been observed in group I (32Fr) and II (36Fr) in the whole observation period. Similar results have been obtained in insulin concentration measurements in serum as well as in HOMA-IR and glycated hemoglobin examinations. No statistically significant differences have been observed between examined groups considering alanine and aspartate aminotransferase activity in the whole observation period.

The dynamics of changes in lipid balance parameters has been examined. Statistically significant decrease of total cholesterol concentration has been proved 6 months after the surgery without difference between groups. Also statistically significant differences between groups in LDL cholesterol concentration has not been observed. Significant increase of HDL cholesterol in every group has been noted in 6-months follow-up. Decrease of triglycerides concentration after 6 months has been statistically significant in every group. Also C-reactive protein concentrations in serum have been analyzed. Only in II and III group the decrease of CRP appeared to be significant in 6-months follow-up.

Efficiency of sleeve gastrectomy in body mass and BMI reduction in morbidly obese patients has been proved, the higher the smaller calibration tube. What is more, those patients reveal faster normalization of carbohydrate and lipid balance parameters. Levels of aminotransferase and C-reactive protein require further examination.