COMPLEX ASSESSMENT OF CHANGES IN GLUCOSE METABOLISM AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY AND LAPAROSCOPIC GASTRIC BY-PASS WITH USE OF CONTINUOUS GLUCOSE MONITORING IN PATIENTS UNDERGOING OPERATIVE TREATMENT OF MORBID OBESITY.

Obesity has become 21st century civilization disease, which contributes to prevalence of diabetes, cardiovascular disorders and diseases of muscosceletal system. Obesity deteriorates quality of life and shortens life length. Surgical treatment is currently the only option for handling obesity that provides permanent results in terms of weight loss (bariatric effect). Furthermore, these methods have a positive impact on type 2 diabetes treatment (metabolic effect). After surgery diabetes mellitus type 2 resolves in 40–95% of patients. A number of studies, that are trying to grasp the mechanisms leading to metabolic changes resulting in diabetes remission, are being published daily. Currently it is known that the metabolic effect is not only caused by reduced weight, but is associated with all hormonal changes occurring directly after the surgery.

An interesting aspect is how particular type of bariatric surgeries affect course of diabetes treatment and how fast can we expect changes. Still we lack data on how surgical treatment affects diabetes. Information on early treatment effects seems relevant in terms of postoperative care.

Proposed study, which assumes continuous monitoring of serum glucose levels, aims to provide ample understanding of the influence of surgery on daily glycaemia fluctuations, which will lead to enhancement of patient care in perioperative period, early postoperative as well as long term results in follow-up. Second aim is to explain hormonal changes after procedures for better understanding of pathophysiology and enhancing our knowledge on diabetes mellitus surgical treatment will lead to enhancement and improvement in treatment results.

Primary endpoint of the study will be assessing the influence of surgical treatment of obesity on daily glucose fluctuation in perioperative period, 1 months and 12 months after surgery. Secondary endpoints will be comparison of influence of particular types of bariatric surgeries on daily glycaemia fluctuations and comparison of glycaemia daily fluctuations between patients with and without type 2 diabetes with simultaneous integration of performed surgery type.

Planned randomized study consists of three steps. In first phase, patients qualified to bariatric treatment will be evaluated for anthropometric and clinical parameters (weight, BMI, waist-hip ratio, health evaluation with emphasis on glucose metabolism, biochemical laboratory studies, assessment of quality of life). After this phase patients will be randomized to one of two procedures (laparoscopic sleeve gastrectomy or laparoscopic gastric bypass). In second stage, patients will receive Continuous Glucose Monitoring (using iPro2® system) in subdermal tissue in perioperative period starting one day prior to surgery up to 13th postoperative day. Third stage will comprise of follow-up visit at 1 and 12 months after surgery with a re-evaluation of chosen anthropometric, clinical and laboratory parameters, quality of life assessment and then continuous glycemia monitoring.

Proposed study has a goal to provide an ample understanding on the influence of bariatric treatments on glucose metabolism in morbidly obese patients. Obesity and diabetes are main civilization diseases, thus better understanding of pathophysiology and enhancing our knowledge on diabetes mellitus surgical treatment will lead to enhancement and improvement in treatment results. Directly, this study will help in developing an optimal care protocol for bariatric patients in postoperative period in terms of controlling and managing diabetes mellitus.