

Abstract

Introduction: Bariatric-metabolic surgery, previously referred to solely as bariatric surgery, is no longer merely a treatment for obesity. In recent years, there has been an understanding of the complex metabolic effects that surgery provides and an expansion of its therapeutic use beyond weight reduction. It also represents a therapy for associated metabolic disorders, including type 2 diabetes mellitus (hereafter referred to as "DM2T"). One of the main benefits that this bachelor thesis focuses on is the improvement of compensation and achievement of diabetes remission within 1 year after surgery.

Objectives: The aim of the bachelor thesis was to evaluate the different weight loss in diabetics and non-diabetics after bariatric surgery. Furthermore, we assessed the influence of bariatrics on the development of glycated hemoglobin values and thus on disease compensation. Finally, we focused on the review of cases where remission of DM2T occurred. The data were analyzed over a time period of 12 months following bariatric-metabolic surgery.

Methodology: The research had a quantitative character and was conducted through retrospective observation. We analyzed data such as weight and glycated hemoglobin values. The group consisted of 38 respondents (18 diabetics and 20 non-diabetics) from obesity clinics from the III. Department of Internal Medicine Endocrinology and Metabolism of the 1. LF UK and VFN in Prague. The respondents underwent bariatric surgery. We monitored the development of weight and glycated hemoglobin values at the time of surgery and subsequently at 3, 6 and 12 months post-bariatric surgery.

Results: Within 12 months post-bariatric surgery, diabetics reduced their weight by an average of 22.4 ± 22.6 kg, and non-diabetics by 28.9 ± 14.9 kg. Thus, non-diabetics lost an average of 6.5 kg more. The average excess weight loss from maximum to 12 months after the operation (EWL12) was 28.2 ± 21.3 % in diabetics and 32.2 ± 12.3 % in non-diabetics. The analysis did not reveal significant statistical differences. All respondents experienced a decrease in glycated hemoglobin values. In the diabetic group, the mean HbA1c value decreased from 49.1 ± 13.7 mmol/mol at the time of surgery to 40.8 ± 9.8 mmol/mol 12 months after the surgery, and in the non-diabetic group from 37.1 ± 3.2 mmol/mol to 34.5 ± 2.3 mmol/mol. The average decrease was 9.5 mmol/mol for diabetics and 1.9 mmol/mol for non-diabetics. Remission of DM2T occurred in 72.2 % of respondents 12 months post-bariatric surgery. 7 respondents achieved remission after gastric plication, 4 respondents after Roux-Y gastric bypass, and 2 respondents after sleeve gastrectomy.

Conclusion: The research confirmed the significance of bariatric-metabolic surgery as a highly effective treatment method for weight reduction and improvement of diabetes compensation, which in many cases leads to disease remission.

Keywords: diabetes mellitus type 2, obesity, bariatric and metabolic surgery, diabetes remission