

Late relapse of diabetes after bariatric surgery: not rare, but not a failure

ABSTRACT

Objective: To characterize the status of cardiometabolic risk factors after late relapse of type 2 diabetes mellitus (T2DM) and to identify factors predicting relapse after initial diabetes remission following bariatric surgery to construct prediction models for clinical practice. **Research design and methods:** Outcomes of 736 patients with T2DM who underwent Roux-en-Y gastric bypass (RYGB) or sleeve gastrectomy (SG) at an academic center (2004–2012) and had ≥ 5 years' glycemic follow-up were assessed. Of 736 patients, 425 (58%) experienced diabetes remission (HbA1c $< 6.5\%$ [48 mmol/mol] with patients off medications) in the 1st year after surgery. These 425 patients were followed for a median of 8 years (range 5–14) to characterize late relapse of diabetes. **Results:** In 136 (32%) patients who experienced late relapse, a statistically significant improvement in glycemic control, number of diabetes medications including insulin use, blood pressure, and lipid profile was still observed at long-term. Independent baseline predictors of late relapse were preoperative number of diabetes medications, duration of T2DM before surgery, and SG versus RYGB. Furthermore, patients who relapsed lost less weight during the 1st year after surgery and regained more weight afterward. Prediction models were constructed and externally validated. **Conclusions:** While late relapse of T2DM is a real phenomenon (one-third of our cohort), it should not be considered a failure, as the trajectory of the disease and its related cardiometabolic risk factors is changed favorably after bariatric surgery. Earlier surgical intervention, RYGB (compared with SG) and more weight loss (less late weight regain) are associated with less diabetes relapse in the long-term.