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Et al.

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Comparison of Diabetic Remission Rates following Roux en-Y Gastric Bypass and Longitudinal Sleeve Gastrectomy

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Introduction:

Bariatric surgery is being increasingly investigated as treatment for Type II Diabetes Mellitus (T2DM). As Sleeve Gastrectomy (SG) surpasses Roux-en-Y Gastric Bypass (RYGB) as the new standard in bariatric surgery, it is still unknown if its efficacy in achieving remission is comparable to RYGB. This study compared diabetic remission rates between SG and RYGB in order to identify the predictive factors for remission and the mechanisms of achieving remission.

Methods:

This was a retrospective cohort study comparing all diabetic patients undergoing RYGB and SG at an academic medical center from 1/1/11-7/1/15. Patients were followed preoperatively and at 6 week, 6 month, and 1, 2, and 3 year intervals. We defined diabetic remission as HbA1c under 7 without insulin or hypoglycemic use and excess body weight (EBW) as percent over ideal body weight. Data were analyzed using Cox analysis, Fisher's Exact Tests, and Student T Tests.

Results:

During the study, 96 patients underwent RYGB and 89 underwent SG. Preoperatively, patients from both groups had similar age, weight, gender, preoperative weight loss, HbA1c at onset and at surgery, oral hypoglycemic use, insulin use, and HOMA2 parameters. At one year postoperatively, patients who underwent RYGB showed a statistically greater postoperative EBW loss (62% vs. 36% $p < 0.0001$). Kaplan Meier analysis showed a significantly higher rate of remission, (83% vs. 66%) in patients who underwent SG ($p = 0.02$). After using Cox analysis to account for differences in delta BMI ($p = 0.04$), EBW loss ($p = 0.04$), preoperative HOMA2 parameters ($p = 0.008-0.011$), and preoperative factors such as HbA1c and insulin use ($p = 0.001$ for both), there was no change in RYGB's impact on diabetic remission compared to SG.

Conclusion:

Our results confirm that RYGB achieves a significantly greater rate of diabetic remission and a significantly higher weight loss than SG. Additionally, the difference in rate of diabetic remission is not explained by weight loss or preoperative predictors of less reversible diabetes (HOMA2 parameters, use of insulin). Identification of the factor(s) responsible for this differential effect on diabetes may afford opportunity for therapeutic intervention.

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