DOES RECONSTRUCTION TYPE AFTER GASTRIC RESECTION MATTERS FOR TYPE 2 DIABETES IMPROVEMENT?

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INTRODUCTION

Type 2 diabetes mellitus (T2D) is a major cause of morbidity and mortality worldwide, associated to micro and macrovascular complications. A major risk factor for T2D is obesity. Gastrointestinal surgery was reported to facilitate glycemic control in type 2 diabetes (T2D) by reducing the needs for anti-diabetic medications. Non-obese T2D patients submitted to gastrointestinal surgery involving gastric resection and bypass of intestinal segments, arise as interesting model to dissect the gastro-intestinal (GI) mechanisms associated with diabetes improvement.

METHODS

A cohort of T2D patients (n = 40) with upper GI malignancy or complicated reflux disease, were submitted either to a gastrectomy - 24 subtotal, 12 total- or to an atypical gastrectomy (5).

	No Reconstruction	BII Reconstruction	Roux-en-Y Reconstruction
n	5	17	18
Gender (Female/Male)	5/0 (100%/0%)	10/7 (58.8%/41.2%)	5/13 (27.8%/72.2%)
Age (Years)	70 ± 3	66 ± 2	65 ± 3
BMI (kg/m2)	33.1 ± 0.9	28.8 ± 1.0	27.1 ± 0.9
HbA1c (%)	6.6 ± 0.8	8.4 ± 2.5	7.0 ± 1.6
Anti-diabetic drugs	5 (100%)	14 (82.3%)	11 (61.1%)
Insulin treated	0 (0%)	6 (35.3%)	2 (11.1%)
Diabetes duration (years)	2 ± 1	13 ± 7	13 ± 8

Table 1 – Baseline patient’s demographic, anthropometric, and clinical features

RESULTS

Baseline clinical features of the 2 subgroups were similar (table 1). Patients were evaluated before and after surgery for body weight, glycaemic profile, antidiabetic drugs usage and presence of diabetes remission criteria

Figure 1 – BMI (A) and BMI variation (B) after each surgical procedure

The diabetes improvement or remission occurred differently in RY and BII groups, with 27,8% of remission and 66,7% of improvement after RY reconstruction; and 5,9% of remission and 31,3% of improvement after BII. Atypical gastrectomy was associated to 0% of diabetes remission. The mean HbA1c values decreased from 8.37% vs 7.04% to 6.96 vs 5.99% (p=0.04).

Figure 3 – Hb1Ac variation after each surgical procedure

Figure 2 – Diabetes remission rate after each surgical procedure

CONCLUSION

In conclusion, post-gastrectomy reconstruction involving duodenal bypass (BII and RY) improves T2D control in non- obese patients. The type of GI tract reconstruction seems to influence the magnitude of T2D control or disease remission.