Trial Watch

8 April 2024

A small clinical trial n=30, comparing two different surgical interventions against a protein sparing modified fasting (PSMF) diet. Hyperinsulinemic and euglycemic clamp studies measured beta cell function (insulin secretion rates (ISR), glucose disposal rates (GDR)) at baseline and 3 weeks.

Comparative impact of Roux-en-Y gastric bypass (RYGB), sleeve gastrectomy (SG) or diet alone on beta-cell function in insulin-treated type 2 diabetes patients

Population :

	PSMF (n=10)	**RYGB** (n=10)	**SG** (n=10)
Age (yrs)	60.6 +-3.9	52.5 +-7.9	52.9 +-10.0
Sex (M)	20%	50%	60%
BMI (kg/m2)	38.7 +- 4.1	41.3 +- 6.6	40.1 +- 7.9
HbA1c (%)	9.3 +-1.6	8.0 +- 1.8	8.7 +-1.6
Total weight loss (kg)	4.4 +-1.8	10.4 +-2.7	8.4 +- 2.7

Intervention : 2 arms : Roux-en-Y gastric bypass + PSMF diet, sleeve gastrectomy + PSMF diet.

Control : PSMF diet (800 kcal/day) alone : Modifast® Int, (macros unavailable)

Outcomes : Insulin secretion (ISR) and insulin sensitivity (GDR)
Disposition Index - monitors insulin secretion rate and glucose disposal rate at 0 and 3 weeks post intervention.

Results : All three arms showed improved beta cell function in terms of GDR.
: Both surgical interventions resulted in greater immediate weight loss (duh) and increased insulin secretion (ISR).

Summary : RCT showing that surgical interventions provide an immediate benefit to insulin dependent DM2 patients with respect to insulin secretion and sensitivity.

Opinion : A longer term followup would be required to allow the PSMF diet to lose equivalent body fat, before comparing across all three arms. Protein sparing diets will likely boost insulin secretion versus a conventional calorie matched low fat diet.

Paper Lannoo et al (2024) Nature Portfolio 14:8211

https://www.nature.com/articles/s41598-024-59048-w