Bariatric Surgery versus Medical Weight Loss Therapy for Class II Obesity – A Retrospective Cohort Study

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Background & Innovation

- **Prevalence of obesity has increased markedly over the last two decades, costing billions of extra healthcare dollars and leading to significantly more preventable and premature deaths.**
- **While both surgical and medical weight loss treatment options are available, few studies exist comparing these options in patients with obesity, with even fewer comparing outcomes of either treatment modality alone versus combined therapy.**

Objectives

To compare the effectiveness and outcome profiles of bariatric surgery, medical weight loss therapy, and combined surgical and medical weight loss interventions for patients with Class II obesity.

Methods

- **Retrospective cohort analysis was carried out of 119 patients with Class II obesity (BMI >35)**
- **Underwent elective weight-loss surgery, medical weight loss therapy, or both at a single institution between January 2020 – August 2022**
- **Bariatric surgery: Roux-en-Y gastric bypass, gastric sleeve, or gastrojejunostomy**
- **Medical therapy: appetite suppressants or glucagon-like peptide inhibitors**

Results

Out of 119 patients analyzed:

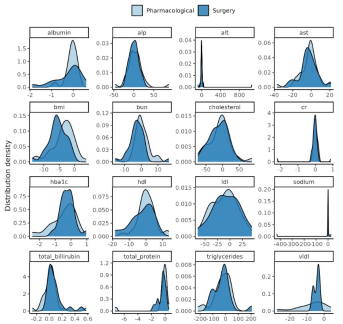
- **37 underwent bariatric surgery (13 robotic Roux-en-Y gastric bypasses (RNYGB), 12 robotic sleeve gastrectomy, and three robotic gastrojejunostomy revisions**
- **76 underwent medical pharmacotherapy**
- **6 underwent both pharmacological weight loss and bariatric surgery**
- **Patients undergoing bariatric surgery achieved significantly greater reductions in BMI compared to those undergoing medical therapy (5.49 vs. 3.04 kg/m2; p=0.001)**
- **Patients undergoing both bariatric surgery and medical therapy did not exhibit significantly greater reductions in BMI compared to patients undergoing either treatment modality alone (p>0.12 for both)**

Table 1: Change in various laboratory outcomes measured between baseline and follow-up

Characteristic	Pharmacological, N = 76	Surgery, N = 37	Difference[†]	95% CI[†,2]	p-value[†]
BMI, Mean (SD)	-3.6 (3.5)	-5.5 (2.9)	1.9	0.58 to 3.3	**0.006**
Cholesterol, Mean (SD)	-9 (33)	-12 (27)	3.1	-14 to 20	0.711
Triglycerides, Mean (SD)	-28 (66)	-23 (73)	-5.1	-46 to 36	0.802
LDL, Mean (SD)	-12 (25)	-8 (27)	-3.9	-19 to 12	0.614
HDL, Mean (SD)	0.4 (5.3)	-2.6 (6.8)	3.0	-0.66 to 6.6	0.106
VLDL, Mean (SD)	-8 (9)	-4 (2)	-3.2	-9.9 to 3.5	0.316
HbA1c, Mean (SD)	-0.47 (0.75)	-0.23 (0.45)	-0.24	-0.56 to 0.08	0.132
Sodium, Mean (SD)	-9.61 (68.00)	0.04 (1.90)	-9.6	-31 to 12	0.375
BUN, Mean (SD)	0.1 (4.5)	-2.5 (5.0)	2.6	0.34 to 4.8	**0.025**
Cr., Mean (SD)	0.03 (0.17)	-0.09 (0.39)	0.12	-0.02 to 0.26	0.098
ALP, Mean (SD)	3 (20)	0 (11)	3.0	-5.0 to 11	0.460
AST, Mean (SD)	-2 (10)	-3 (9)	0.53	-4.5 to 5.6	0.834
ALT, Mean (SD)	23 (168)	-4 (12)	27	-26 to 80	0.316
Total billirubin, Mean (SD)	0.02 (0.13)	0.08 (0.12)	-0.06	-0.12 to 0.01	0.089
Albumin, Mean (SD)	-0.07 (0.26)	-0.24 (0.65)	0.18	-0.19 to 0.54	0.326
Total protein, Mean (SD)	-0.42 (1.59)	-0.43 (0.55)	0.01	-0.54 to 0.56	0.966

[†]Welch Two Sample t-test
[2]CI = Confidence Interval

Figure 1: Distribution densities of outcomes in the study population



Conclusions

Bariatric surgery alone may offer greater reduction in BMI in patients with Class II obesity compared to medical weight loss therapy or combined medical and surgery treatment. Further studies are necessary to further compare the effectiveness of single versus combined weight loss treatment modalities.

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