

Weight Loss Outcomes in Adolescents Undergoing Bariatric Surgery with Adjunctive Pharmacotherapy: A Single-Center Experience



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Background

As the prevalence of severe obesity among adolescents continues to increase, traditional lifestyle and behavioral modifications centered on diet and exercise are often insufficient for achieving meaningful and sustained weight loss¹.

Earlier, more durable intervention for obesity may improve outcomes in terms of long-term resolution of comorbidities and sustained weight loss^{2,3}. In addition to this, the rise in popularity of anti-obesity medications (AOMs) necessitates further investigation into their role in addition to metabolic bariatric surgery (MBS).

This retrospective cohort study aimed to evaluate outcomes in adolescent patients undergoing bariatric surgery, with or without adjunctive pharmacotherapy.

Methods

We conducted a retrospective review of adolescents treated for obesity at a single bariatric center between 2020 and 2025. Demographic data and baseline comorbidities were collected. Treatment modalities included surgery only, surgery plus pharmacotherapy (SXP), or pharmacotherapy only (AOM). Percent excess weight loss (EWL) was calculated and compared across groups at 1, 3, 6-, and 12-month intervals.

Results

- Thirty-eight patients were included in the study (median age 16 years, median BMI 48.2, 79% female, 42% white).
- Treatment groups included surgery-only (n=18; 47.4%), SXP (n=12, 31.6%), and pharmacotherapy-only (n=8; 21%).
- Pharmacotherapies included GLP-1 receptor agonists and other agents indicated for weight loss.

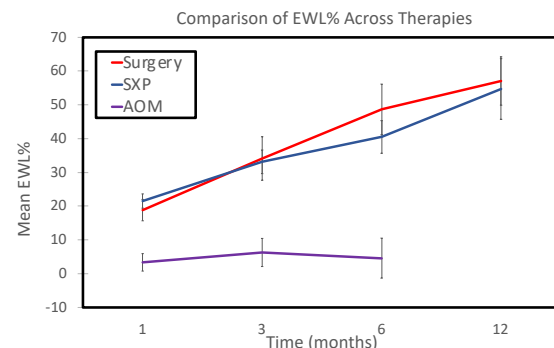


Figure 1. Excess weight loss (EWL%) trajectories over time by treatment group. Line graphs show progression of EWL at 1, 3, 6, and 12 months post-intervention across surgical, pharmacological, and combination therapy groups.

At 6 months:

- AOM only patients showed significantly lower %EWL compared with surgery-only (mean difference -45.32, $p < 0.001$) and SXP (mean difference -36.32, $p = 0.003$).
- No difference was observed between surgery only and SXP for %EWL (mean difference 9.01, $p = 0.479$).

At 12 months:

- mean %EWL was 60.53 for surgery only versus 55.26 for SXP ($p = 0.630$).
- There was no statistical significance between SXP and surgery only cohorts

Comorbidities:

- High prevalence of GERD (73.7%), Anxiety (60.5%), and PCOS (47.4%)

Discussion

- **No Added Benefit:** Adjunctive pharmacotherapy did not provide a statistically significant weight loss advantage over surgery alone at 12 months.
- **Barriers to Care:** Inconsistent medication usage and high costs complicate the role of AOMs in combination with metabolic bariatric surgery (MBS).

- **Clinical Need:** The high burden of T2D, GERD, and PCOS in this population necessitates durable, multi-modal treatment strategies.
- **Evolving Landscape:** Increased public awareness of GLP-1s has caused an influx of patients looking for guidance on the topic

Conclusions

- **Superiority of surgery:** Adolescents undergoing MBS achieved substantially greater weight loss than those treated with pharmacotherapy alone.
- **Current findings:** Combination therapy did not demonstrate a clear advantage over surgery alone in this cohort.
- **Future directions:** Longer-term studies are required to define the evolving role of GLP-1s and other AOMs following adolescent bariatric surgery

References

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