EFFICACY OF PREOPERATIVE HIGH-DOSE LIRAGLUTIDE IN PATIENTS WITH SUPER OBESITY

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Background

- Preoperative weight loss prior to bariatric surgery is imperative optimizing operative conditions by decreasing liver volume and visceral adipose tissue.
- Traditionally, low calorie liquid diet was used to achieve preoperative weight loss.
- Glucagon-like-peptide-1 (GLP-1) receptor agonists, such as Liraglutide, have been approved for weight management.

Objectives

- We aimed to study the efficacy of Liraglutide as a preoperative adjunct in patients with super obesity.

Methods

- Retrospective cohort study of all patients enrolled at the Edmonton Adult Bariatric Specialty Clinic between July 1, 2014 and June 30, 2017.
- Inclusion criteria: Age ≥ 18, BMI ≥ 50 kg/m^2
- Exclusion criteria: diabetes mellitus, previous bariatric surgery
- Intervention: Preoperative Liraglutide 3 mg/day
- Primary outcome: Success rate of laparoscopic Roux-en-Y gastric bypass (LRYGB)
- Secondary outcomes: amount of preoperative Optifast diet, amount of preoperative/postoperative weight loss, postoperative complications
- Statistical analyses: student unpaired t-test (continuous variables), Fisher's exact test (categorical variables)

Results

Table 1. Summary of study baseline demographics.

# Charts Reviewed	2369
# Patients Included	412
Mean Age ± SD	41.76 ± 11.00
# Females (%)	292 (70.9)
Mean Initial BMI ± SD (kg/m^2)	57.05 ± 6.98
# Lost to Follow-up	59

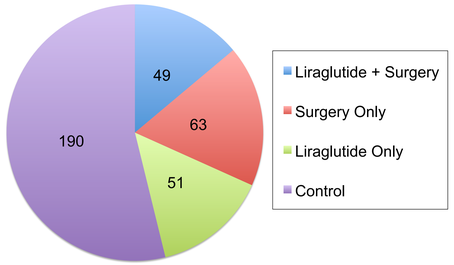


Figure 1. Distribution of included patients based on treatment modalities.

Results

Table 2. Comparison of patients treated with preoperative Liraglutide versus bariatric surgery alone.

	Surgery + Liraglutide (n = 49)	Surgery Only (n = 63)	OR (95% CI)	P value
Mean Age ± SD	43.78 ± 11.44	41.29 ± 9.48	-	0.21
Mean Liraglutide Duration ± SD (months)	8.92 ± 5.69	-	-	-
Mean Optifast Duration ± SD (weeks)	13.24 ± 10.48	11.77 ± 9.12	-	0.63
Mean Surgery Wait Time ± SD (months)	21.70 ± 8.11	21.00 ± 8.46	-	0.65
Mean Post-op Follow-up ± SD (months)	10.69 ± 3.48	10.95 ± 3.56	-	0.70
# Planned LRYGB	37	47	-	-
# Successful LRYGB (%)	36 (97.3)	44 (93.6)	2.46 (0.35 - 32.66)	0.63
# Optifast Use (%)	21 (42.9)	22 (34.9)	1.40 (0.65 - 3.04)	0.44
# Complications: ≤30d (%)	4 (8.2)	4 (6.3)	1.31 (0.36 - 4.69)	0.73
# Complications: >30d (%)	1 (2.0)	4 (6.4)	0.31 (0.02 - 1.98)	0.38

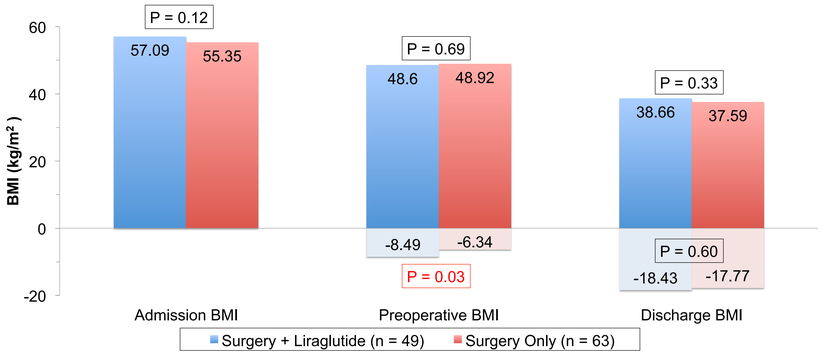


Figure 2. Weight loss comparison between patients treated with preoperative Liraglutide versus bariatric surgery alone.

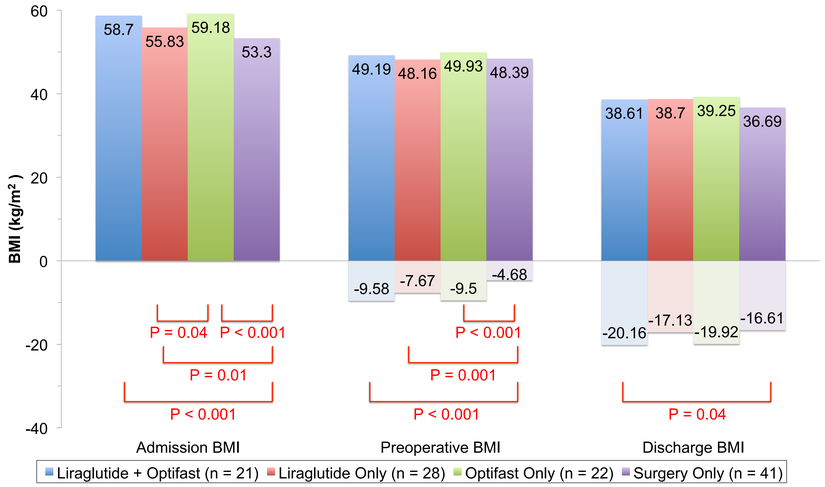


Figure 3. Subgroup analysis comparing the weight loss of all patients who underwent bariatric surgery treated with preoperative Liraglutide or Optifast diet. All statistically significant differences have been identified above with associated p-values.

Conclusions

- Our study demonstrated that preoperative Liraglutide was associated with significantly greater preoperative weight loss compared to those without.
- However, preoperative Liraglutide neither increased LRYGB success rate, decreased amount of Optifast required, or decrease postoperative complication rates.
- Preoperative Liraglutide in conjunction with Optifast diet lead to greater preoperative weight loss and total weight loss when compared to surgery alone, however, there was no difference between Liraglutide versus Optifast.
- Overall, Liraglutide may be a useful adjunct for preoperative weight loss in patients with super obesity underdoing bariatric surgery.