Expedited Higher Protein Post-operative Diet Advancement After Bariatric Surgery: A Descriptive Comparative Cohort Study

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Introduction

- Bariatric surgery is the most successful long-term management for morbid obesity
- ERAS (Enhanced recovery after surgery) protocols for abdominal surgeries support early diet advancement
- Published ERAS guidelines for bariatric surgery lack recommendations for early diet advancement

- **Study Aim:**
  Quality improvement effort to standardize postoperative diet and include early protein intake for bariatric surgery patients
- Assess impact on healthcare resource utilization

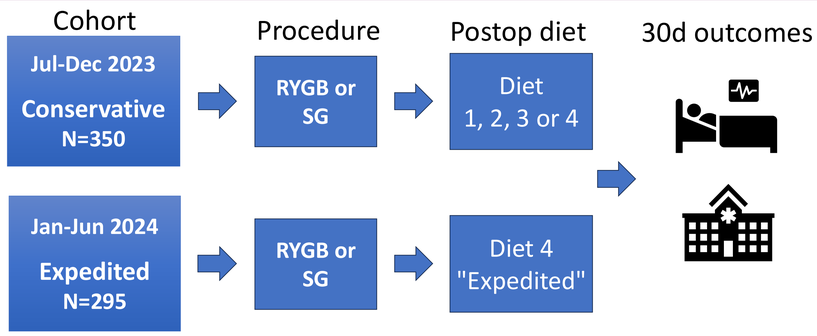
Methods

- Single center, prospective cohort study of primary Roux-en-Y gastric bypass (RYGB) and sleeve gastrectomy (SG), 18-65yr
- **Conservative cohort, historical** (July–December 2023):
  4 diet protocols, determined by operative surgeon
- **Expedited cohort, prospective** (January–June 2024):
  Standardized, expedited high-protein diet (Diet 4)
- *Primary outcomes:* healthcare resource utilization
  Emergency department (ED) visits for diet intolerance and hospital readmissions within 30 days
- *Secondary outcomes*: length of stay (LOS), reoperations, and anastomotic leaks
- Statistics: Students t-test, Chi-squared, and Wilcoxon Rank Sum Test. Significance $p<0.05$

Diet Protocols

Diet 1	**POD 0-5:** Clear Liquids **POD 6:** Clears and Protein Shake **POD 14-27:** Full Liquids, purees **POD 28 – 6wk:** Soft Foods
Diet 2	**POD 0-6:** Clear Liquids **POD 7-14:** Full Liquids **POD 15-29:** Purees **POD 30 – 8wk:** Soft Foods
Diet 3	**POD 0-14:** Clear Liquids **POD 15- 6wk:** Soft food and purees
Diet 4 / Expedited	**POD 0:** Clear Liquids **POD 1:** Clears and protein shake **POD 2- 7:** Clears, 2 protein shakes, purees **POD 8-14:** Full liquids, purees **POD 15-6wk:** Soft food

Study Design



Results

Table 1. Patient demographics

Variable	Conservative	Expedited	P-value
Total patients	350 (54%)	295 (46%)	
Age years (mean, SD)	42.9 (12.4)	39.5 (11.5)	**<0.001**
Sex, female	300 (86%)	257 (87%)	0.605
BMI (mean, SD)	47.3 (7.9)	46.6 (7.4)	0.262
Roux-en-Y bypass	156 (45%)	127 (43%)	0.698
Sleeve gastrectomy	194 (55%)	168 (57%)	0.698
White	276 (79%)	190 (64%)	**<0.001**
Black or African American	62 (18%)	93 (32%)	**<0.001**
Obstructive sleep apnea	190 (54%)	127 (43%)	**0.004**
Hypertension	159 (45%)	100 (34%)	**0.003**

Table 2. Healthcare resource utilization, 30d

Variable	Conservative	Expedited	P- value
Healthcare utilization	23 (6.6%)	28 (9.5%)	0.171
ED visit	22 (6.3%)	19 (6.4%)	0.936
Readmission	1 (0.3%)	9 (3.1%)	**0.005**

- Healthcare resource utilization within 30d not statistically significant
- ED visits for diet intolerance were comparable between cohorts
- Hospital readmissions were significantly higher in expedited cohort ($p = 0.005$)

Results

Table 3. Secondary Outcomes, 30d

Variable	Conservative	Expedited	P- value
LOS, days (mean, SD)	1.6 (0.95)	1.4 (0.69)	**0.043**
Reoperation	2 (0.6%)	3 (1.0%)	0.520
Anastomotic leak	0	0	

- LOS significantly different, but clinically insignificant
- Reoperations were comparable between cohorts
- No anastomotic leaks during the study period

Limitations

- Unmatched cohort design
- Short study duration, low number of significant events

Conclusion

- **Successful implementation of standardized diet**
  - Standardized patient care and nutrition counseling
- **No significant change in overall healthcare resource utilization**
  - Similar rates of ED visits for diet intolerance
- **Significantly higher hospital readmissions**
  - Possibly due to changes in nutritional counseling, tolerance of higher protein
- **Safety of expedited diet**
  - No anastomotic leaks, no difference in reoperations during study period

Future Works

- Long term outcomes of diet standardization
- Further study of optimal diet advancement and early protein intake after bariatric surgery