PREDICTORS OF OUTPATIENT IV THERAPY FOLLOWING REVISIONAL BARIATRIC SURGERY: AN MBSAQIP ANALYSIS

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BACKGROUND

- The prevalence of revisional bariatric surgery is expanding over time and is associated with higher operative risks and morbidity
- Dehydration is a common complication after bariatric surgery and often quoted as the reason for emergency department (ED) visits and readmission.
- This study aimed to identify the predictors of outpatient IV therapy after revisional bariatric surgery.

METHODS

- The Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP®) data for 2015-2020 was queried.
- We included revisional sleeve gastrectomy (SG), Roux-en-Y gastric bypass (RYGB), adjustable gastric band (AGB) and biliopancreatic diversion with duodenal switch (BPD-DS) cases.
- Univariate analysis was performed using chi-squared tests for categorical data and independent sample t-tests for continuous data. Multivariable logistic regression models were developed to determine predictive factors for outpatient IV therapy.

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TABLES

Table 1 Univariate Analysis: Patient and Operative characteristics by dehydration treatment requirement

		No Dehyrdration treatment	Dehydration Treatment	p-value
Sex	Female	72,093 (85.8%)	2,862 (91.6%)	<0.001
	Male	11,932 (14.2%)	262 (8.4%)	
Age (years)		48.820873 (10.960776)	46.301463 (10.660978)	<0.001
Race	American Indian or Alaska	357 (0.4%)	7 (0.2%)	<0.001
	Asian	294 (0.3%)	7 (0.2%)	
	Black or African American	16,238 (19.3%)	777 (24.9%)	
	Native Hawaiian or Other	142 (0.2%)	4 (0.1%)	
	Unknown/Not Reported	6,945 (8.3%)	198 (6.3%)	
	White	59,997 (71.4%)	2,130 (68.2%)	
Current smoker within one year		5,799 (6.9%)	249 (8.0%)	0.021
Pre-Op History of PE		1,545 (1.8%)	76 (2.4%)	0.016
Pre-Op GERD		37,126 (44.2%)	1,762 (56.4%)	<0.001
Pre-Op Vein Thrombosis		2,064 (2.5%)	131 (4.2%)	<0.001
Pre-Op		1,889 (2.2%)	95 (3.0%)	0.004
Procedure RYGB		54,234 (64.5%)	2,378 (76.1%)	<0.001

Table 2 Multivariable Regression: IV Treatment as an Outpatient

Male	0.634***
	[0.554,0.726]
African American	1.233***
	[1.128,1.348]
Insulin dependent diabetes	1.443***
	[1.211,1.720]
Pre-Op Steroid/Immunosuppressant Use for Chronic Condition	1.372**
	[1.101,1.711]
History of PE	1.286*
	[1.010,1.637]
Pre-Op GERD	1.468***
	[1.359,1.587]
Bypass	1.634***
	[1.481,1.802]
Exponentiated coefficients; 95% confidence intervals in brackets	
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$	

RESULTS

- Of 100,463 patients who underwent revisional bariatric surgery from 2015-2020, 37% received a RYGB, 35.6% a SG, 25.8% a BPD-DS and 1.6% an AGB.
- On univariate analysis female gender, decreased age, African American race, insulin-dependent diabetes, current smokers, as well as pre-operative gastroesophageal reflux disease (GERD), steroid use, history of PE and vein thrombosis were associated with increased need for outpatient IV therapy.
- Additionally, operative factors of revisional RYGB and increased operative time were associated with outpatient IV therapy.
- On multivariable analysis, independent-risk factors for postoperative dehydration treatment included female gender (adjusted odds ratio (AOR) 1.36, p<.001), African American race (AOR 1.23, p<.001), insulin dependent diabetes (AOR 1.44, p<.001), pre-op steroid/immunosuppressant (AOR 1.37, p<.001), history of PE (AOR 1.29, p<.001), pre-op GERD (AOR 1.47, p<.001) as well as revisional RYGB (AOR 1.63, p<.001) and revisional BPD-SD (AOR 1.28, p<.001).

CLINICAL RELEVANCE

- Amongst revisional bariatric patients, those who were younger, African-American, those with associated co-morbidities (insulin-dependent diabetes, pre-op GERD/steroid use/hx of PE), as well as those who underwent revisional RYGB procedures were at increased risk for outpatient IV therapy.
- Pro-active measures and closer surveillance for those at elevated risk may prevent the need for outpatient IV therapy.