Discharge Opioid Prescribing Following Laparoscopic Sleeve Gastrectomy and Laparoscopic Roux-en-Y Gastric Bypass

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Objective

Identify in-hospital risk factors associated with increased opioid use on discharge to establish appropriate discharge opioid prescribing guidelines for patients undergoing laparoscopic bariatric surgery.

Background

Overprescribing of opioids after surgery increases new persistent opioid use and diversion contributing to the opioid epidemic. Bariatric patients have been found to have a higher risk of developing new persistent opioid use which is associated with significantly worse outcomes including decreased weight loss, decreased patient satisfaction and less improvement in body image and depression. Despite opioid prescribing being a topic at the forefront of medical literature, there are limited evidence-based guidelines for the appropriate prescribing of opioids after laparoscopic bariatric surgery.

Methods/Analysis

We performed a retrospective, cohort study at a single institution after obtaining IRB approval. We completed a chart review of patients between 18 and 70 years old who underwent laparoscopic sleeve gastrectomy (LSG) or laparoscopic Roux-en-Y gastric bypass (LRGB) from July 2019 thru February 2020. All patients included in the chart review had their surgeries performed by the same surgeon and were enrolled in an Enhanced Recovery After Surgery program.

Patient charts were reviewed for demographics, comorbidities, and operative details [Table 1]. Information was obtained regarding the quantity of opioids taken during their hospital admission, prescribed on discharge, and taken after discharge. Opioid use was converted to morphine milligram equivalents (MME) for comparisons where appropriate. The Michigan Automated Prescription System (MAPS) was used to verify all perioperative opioid prescriptions.

Numerical data where the conditions for parametric analysis could not be assumed, are presented as median averages and compared using the Mann-Whitney U test. Mean ± standard deviations were included when appropriate for clarification. Correlations were calculated as Spearman's rho with confidence intervals. Negative binomial regression analysis was utilized to identify independent predictors of discharge opioid use.

Results

84 patients were included in data analysis. 55 patients (65%) received a prescription for five oxycodone 5 mg pills on discharge and 91% filled their prescription. Only 44% (22/50) of those filling their opioid prescription took any opioids. A total of 275 pills were prescribed (55 x 5) and only 24% (65) of these pills were taken after discharge in the 2-week postoperative period. [Table 1]. Nearly 70% of patients did not take opioids after discharge [Figure 1].

Opioid use on the ward was a significant predictor of opioid use at home. 100% of patients who took 4 or more pills on the ward took opioids at home [Figure 2]. Multivariable analysis revealed that the number of oxycodone pills taken on the surgical ward in the hospital was a significant independent predictor of the number of oxycodone pills taken after discharge [Table 2]. Patients taking no opioids on the ward took very few pills on discharge despite many receiving a prescription [Figure 3].

Tables/Figures

Table 1. Characteristics of Entire Cohort.

Variable	
Age, mean (SD)	44.5 (11.3)
Gender, n (%)	
Male	8 (9.5)
Female	76 (90.5)
LOS, mean (SD)	1 (0.41)
BMI, mean (SD)	46.6 (6.5)
Race, n (%)	
White	59 (70.2)
Black	24 (28.6)
Asian	1 (1.2)
Comorbidities, n (%)	
DM II	27 (32.1)
HTN	41 (48.8)
HLD	38 (45.2)
OSA	36 (42.9)
DDD	7 (8.3)
Arthritis	27 (32.1)
OR time, min (SD)	81 (31.9)
Surgery type, n (%)	
LSG	72 (85.7)
LRGB	12 (14.3)
Opioid prescriptions written, n (%)	55 (65.5)
Opioid prescriptions filled, n (%)	50 (90.9)
Pts who consumed opioids on DC upon receiving script, n (%)	22/50 (44)
Pills consumed compared to prescribed, n (%)	65/275 (23.6)

Table 2. Univariate and Multivariate Analysis of Variables Associated with Outpatient Opioid Use.

Variable	n	Pills taken after discharge, median (IQR)	Pills taken after discharge, mean (SD)	Univariate p Value	Multivariate p Value
Age, y				0.798	0.912
≤44	43	0 (0,1)	0.72 (1.47)		
>44	41	0 (0,1)	0.83 (1.64)		
Sex				0.882	0.465
Male	8	0 (0,1)	0.88 (1.81)		
Female	76	0 (0,1)	0.76 (1.53)		
Type of Surgery				0.911	0.566
LSG	72	0 (0,1)	0.76 (1.54)		
LRGB	12	0 (0,1)	0.83 (1.64)		
LOS, d				0.351	0.509
1	70	0 (0,0)	0.67 (1.44)		
≥2	14	0 (0,2)	1.28 (1.88)		
# Pills Taken on Ward				0.001	0.001
0	37	0 (0,0)	0.14 (0.48)		
1-3	40	0 (0,1)	0.95 (1.71)		
≥4	7	4 (2,5)	3.14 (1.86)		

Figure 1.

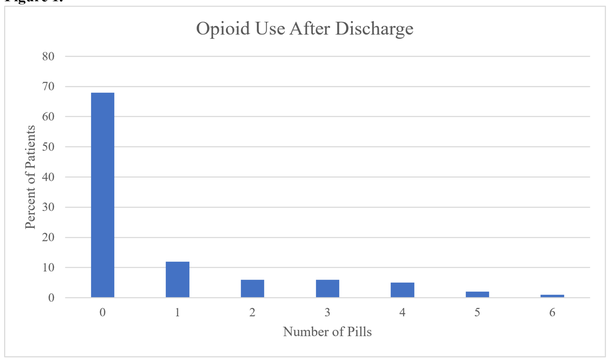


Figure 2.

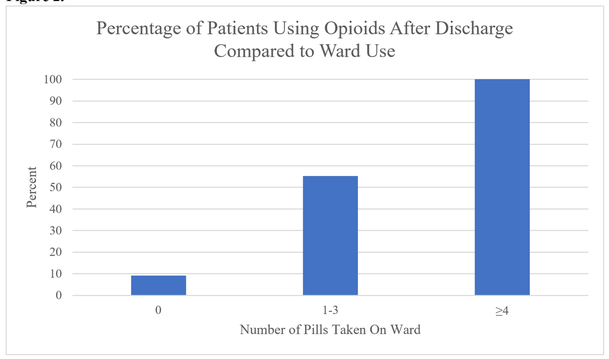
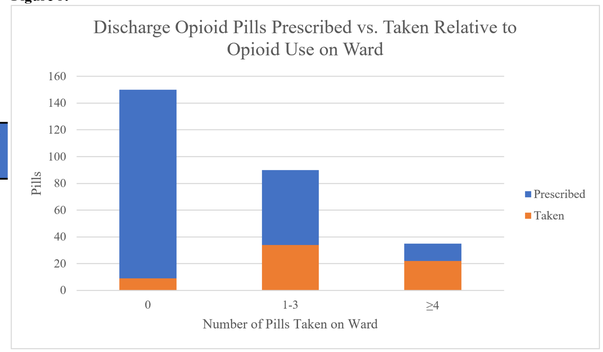


Figure 3.



Discussion

Our study demonstrates that for patients undergoing laparoscopic bariatric surgery the best predictor of post-operative opioid use after discharge is hospital opioid use on the surgical ward. In our study, 275 pills were prescribed on discharge and only 24% (65) of these pills were consumed. This demonstrates gross over prescribing with a large number of pills available for diversion. Despite the relatively small number of opioids consumed after discharge, no patients contacted our office for additional pain medications.

Based on this data, we have developed discharge prescribing guidelines for our laparoscopic bariatric surgery patients. We prescribe 0 pills if the patient used no opioids on the surgical ward, 1 pill if they used 1-3 pills on the surgical ward, or 3 pills if they used 4 or more pills on the surgical ward. By utilizing these guidelines, we anticipate a reduction in unused opioids available for diversion and a lower rate of new persistent opioid use.

Limitations to study include small sample size and retrospective analysis.

Conclusion

Postoperative opioid use on the ward predicts opioid use on discharge and can be utilized as a guide for opioid prescribing following laparoscopic bariatric surgery.

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