

RESEARCH - An Opioid-Sparing Protocol Reduces Narcotic Utilization 3-fold in Sleeve Gastrectomy

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ABSTRACT

OBJECTIVES/PURPOSE

The aim of this study is to compare outcomes between an intention-to-treat opioid-sparing (OSP) protocol and the standard opioid-allowing approach.

INTRODUCTION

Opioid prescribing and management have garnered international attention. Opioid-related deaths in the United States increased exponentially, with 20% of all deaths in adults aged 25–34 years now being considered opioid-related. Patients with obesity have more opioid-related neurochemical responses and are at an increased risk for narcotic associated postoperative complications. Previous studies have found that up to 8% of patients undergoing bariatric surgery may take chronic preoperative opioids, with 77% continuing or increasing opioid use postoperatively.

METHODS

This is a single center retrospective chart review study.

ANALYSIS

All analyses were conducted using SAS v. 9.4. Group differences were considered significant at $p < .05$.

RESULTS

Overall, OSP patients reported significantly less pain at various times post-operatively.

CONCLUSION

In patients undergoing sleeve gastrectomy: those treated with an OSP had sufficiently managed pain post-operatively, while dramatically reducing morphine equivalent administration with comparable outcomes to a standard opioid-allowing protocol.

INTRODUCTION

GAP IN KNOWLEDGE

An OSP was developed to attempt to decrease the amount of opioids prescribed both preoperatively and postoperatively. The OSP involves prescription of gabapentin preoperatively, tap block administration preoperatively, scheduled gabapentin at discharge and scheduled multiple non-opioid analgesics in hospital and at discharge.

This study aimed to compare outcomes between an intention-to-treat opioid-sparing protocol and the standard opioid-allowing approach.

RESEARCH QUESTIONS OR HYPOTHESIS

We hypothesize that an OSP will significantly reduce morphine equivalent administration while sufficiently managing post-operative pain in patients undergoing minimally invasive gastrotomies.

METHODS

STUDY DESIGN

Data from 252 patients who underwent minimally invasive sleeve gastrectomies between April 2019 and August 2020 was analyzed retrospectively. Eighty three patients were treated with OSP, while 169 patients were not (N-OSP). The OSP included gabapentin peri-operatively, TAP block administration, and administration of Tylenol and Ibuprofen post-operatively.

ANALYSIS

All analyses were conducted using SAS v. 9.4. Group differences were considered significant at $p < .05$. Continuous variables were evaluated for normality and parametric or non-parametric tests were used as appropriate. The analyses were adjusted for ethnicity, hyperlipidemia, and surgical approach, as they were found to be significantly different between OSP and N-OSP.

RESULTS

- Age and BMI were comparable between the OSP and N-OSP groups. There were no differences in length of stay, 30-day readmissions, reoperations and interventions (data not shown).
- OSP patients reported significantly less pain at various times post-operatively (Table 1).
- The OSP group received opioids less frequently (28.92% vs. 81.05%, $p < .0001$) during hospital admission, had a 3-fold less mean inpatient morphine equivalent scores (5.17 vs. 17.36, $p < .0001$), had a higher frequency of EXPAREL administration (92.77% vs 82.84%, $p = .03$), and received more scheduled non-opioid analgesics in hospital (2.31 vs 1.76, $p = .02$), compared to N-OSP (Table 1). (Table 2)

CONCLUSIONS

Treating patients with an OSP sufficiently managed pain post-operatively while dramatically reducing morphine equivalent administration with comparable outcomes to a standard opioid-allowing protocol in patients undergoing sleeve gastrectomy.

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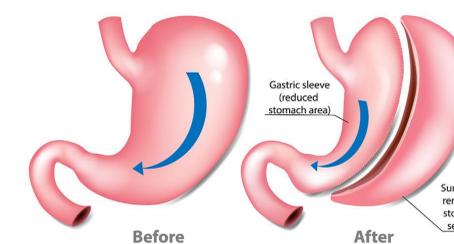
TABLE 1: OSP AND NON-OSP POST-OPERATIVE PAIN SCORES

	Opioid-Sparing Protocol [n=83]	Non Opioid-Sparing Protocol [n=169]	Unadjusted P-value	Adjusted P-value ^e
Pain Score on Arrival to Floor (Mean ± SD [Range])	2.03 ± 3.22 [10]	3.36 ± 3.32 [10]	<0.0033^c	0.5982
Pain Score 6-12 Hrs. Post Op	2.93 ± 2.73 [9]	4.98 ± 2.63 [10]	<0.0001^c	0.0749
Pain Score at Discharge	1.03 ± 1.79 [7]	2.42 ± 2.31 [8]	<0.0001^c	0.7726
Highest Pain Score	4.79 ± 3.21 [10]	6.64 ± 2.26 [10]	<0.0001^c	0.5333
Mean Pain Score	2.24 ± 1.71 [6.59]	3.40 ± 1.54 [6.33]	<0.0001^c	0.3156

TABLE 2: OSP AND NON-OSP POST-OPERATIVE PAIN SCORES

	Opioid-Sparing Protocol [n=83]	Non Opioid-Sparing Protocol [n=169]	Unadjusted P-value	Adjusted P-value ^e
Opioid medications given ≤ 10 days Pre-operation (n (%))	4 (4.82)	27 (16.07)	0.0132^b	0.7590
Inpatient Opioid given in Hospital	24 (28.92)	124 (81.05)	<0.0001^a	0.0404
Non-opioid analgesics given [no]	2 (2.41)	89 (52.66)	<0.0001^b	0.0256
TAP block administered	80 (96.39)	4 (2.37)	<0.0001^a	0.0003
EXPAREL (skin incision/independent of TAP block)	77 (92.77)	140 (82.84)	0.0322	0.0159
Scheduled non-opioid analgesics given in hospital	82 (98.80)	136 (91.28)	0.0212^b	0.0176
Number of Scheduled non-opioid analgesics given in hospital (Mean ± SD [Range])	2.31 ± 0.73 [3.00]	1.76 ± 0.65 [3.00]	<0.0001^c	0.0010
Morphine (MSO4) equivalent (inpatient)	5.17 ± 14.65 [102]	17.36 ± 24.08 [189]	<0.0001^c	0.6203

SLEEVE GASTRECTOMY



(Nashville Weight Loss, 2021)