

Association of postoperative analgesic technique with postoperative opioid consumption following abdominal hysterectomy

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INTRODUCTION

- Prior to April 2024: transversus abdominus plane (TAP) block, thoracic epidural analgesia, or neither for TAH
- April 2024: we introduced intrathecal morphine (IM) into our postoperative analgesia practice for patients undergoing TAH
- We hypothesized that among patients who underwent TAH, those who received IM would have lower postoperative opioid consumption compared to patients who received a TAP block.**

METHODS

- The Baylor Scott & White Research Institute IRB approved this study (025-323) and waived the requirement for informed consent.
- Patients who had TAH at Baylor Scott & White Medical Center-Temple from April 1, 2023 to March 31, 2025 were included in the study. Detailed demographic, physical, and clinical data was retrieved from the electronic medical record and entered into REDCap.
- The primary outcome was 24-hour postoperative oral morphine equivalent (OME) consumption with conversion methodology described by Nielsen et al.¹ We compared patients in the top tertile of OME consumption to patients in bottom tertile of OME consumption using a bivariate analysis.
- We then performed a multivariate logistic regression with variables of interest to determine which variables were independently associated with patients who were in the low OME consumption cohort. Postoperative analgesic technique was a co-variate in the multivariate logistic regression.

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TABLE 1. Demographic, physical, and clinical characteristics of the cohorts

Variable	Low OME Cohort (N=44)	High OME Cohort (N=45)	P value
Age (years) (mean (SD))	58 ± 14	48 ± 10	0.002 *
BMI (kg/m ²) (mean SD))	30.7 ± 8.4	32.9 ± 8.3	0.22
Gravidity / Parity (median (IQR))	1 (0-3) / 1 (0-3)	2 (1-3) / 2 (1-3)	0.07 / 0.18
History of cesarean delivery (yes)	12 (27%)	10 (22%)	0.58
History of abdominal surgery other than cesarean delivery (yes)	19 (43%)	23 (51%)	0.45

TABLE 2. Clinical characteristics of the cohorts

Variable	Low OME Cohort (N=44)	High OME Cohort (N=45)	P value
Omentectomy performed (yes)	20 (45%)	8 (18%)	0.005 *
Operative time (minutes) (median (IQR))	108 (88-134)	104 (82-138)	0.63
EBL (mL) (median (IQR))	150 (100-288)	150 (100-200)	0.79
Postoperative analgesic technique			0.008 *
<i>No peripheral or neuraxial technique</i>	7 (16%)	6 (13%)	
<i>TAP block</i>	22 (50%)	35 (78%)	
<i>Thoracic epidural</i>	9 (20%)	2 (4%)	
<i>Intrathecal morphine</i>	6 (14%)	2 (4%)	
Median 24-hour pain score (median (SD))	3.0 ± 1.8	5.9 ± 1.3	<0.001 *

TABLE 3. Multivariate logistic regression to predict whether a patient was in the low opioid consumption cohort

Variable	Units	Odds Ratio	95% Confidence Intervals	P value
Age	5 years	1.29	1.08-1.58	0.01 *
Parity	1	0.87	0.84-1.18	0.38
Omentectomy	Yes	3.28	1.11-9.69	0.03 *
<i>TAP block</i>		1.00		
<i>No peripheral or neuraxial technique</i>		1.79	0.47-8.82	0.40
<i>Thoracic epidural</i>		5.50	0.94-32.13	0.08
<i>Intrathecal morphine</i>		4.98	0.70-35.51	0.11
Total acetaminophen	1000 mg	0.96	0.82-1.47	0.84
Total ibuprofen	600 mg	0.85	0.61-1.18	0.33



RESULTS

- 127 patients had abdominal hysterectomy and met inclusion criteria.
- 44 patients and 45 patients had 24-hour postoperative OME consumption of **19.5 mg or less** and **40.0-162.5 mg**, respectively, and comprised the low and high OME cohorts, respectively.
- When comparing the low and high OME cohorts, patients did not differ in race (p=0.53), total acetaminophen (p=0.14), total ibuprofen (p=0.11), and total ketorolac (p=0.89) administration.
- Complete physical and clinical data for the cohorts are presented in Tables 1 and 2, respectively.
- A five-year increase in age (aOR 1.29; 95% CI 1.06-1.58; p=0.01) and performance of an omentectomy (aOR 3.28; 95% CI 1.11-9.69; p=0.03) were independently associated with the low OME cohort.**
- Postoperative analgesic technique was not independently associated with the low OME cohort.
- Complete data for the multivariate logistic regression are presented in Table 3. The c-statistic of the multivariate logistic regression was 0.80.

DISCUSSION

- Age and omentectomy were associated with an approximately 30% increase and 230% increase, respectively, of a patient being in the low OME cohort.
- Postoperative analgesic technique was not independently associated with being in the low OME cohort
- A limitation of this study was that we were potentially underpowered to detect a statistically significant difference in postoperative analgesic technique.

Reference: Nielsen S.. A synthesis of oral morphine equivalents (OME) for opioid utilisation studies. *Pharmacoepidemiol Drug Saf.* 2016;25(6):733-737