Rates, Predictors, and Consequences of Potential Opioid-Related Adverse Events Following Discharge After Colorectal Surgery: a Prospective Cohort Study

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KEY MESSAGE: Most patients undergoing colorectal surgery experience potential opioid-related adverse events (ORADEs) post-discharge, leading to increased healthcare utilization. Investigating the impact of opioid stewardship on ORADEs is an important venue for future research.

INTRODUCTION

- **Opioids are a leading cause of adverse drug events** after colorectal surgery.
- Many studies have investigated potential **opioid-related adverse events (ORADEs)** during postoperative hospital stay.
- However, **the burden of ORADEs after discharge remains understudied**.

RESEARCH AIMS

Estimate the extent to which potential ORADEs

(1) are **experienced** by colorectal surgery patients after discharge;

(2) can be **predicted** based on patient and care characteristics; and

(3) are **associated** with 30-day **unplanned healthcare utilization.**

METHODS

Study Design: Prospective cohort study at two academic hospitals in Montreal, Canada (03/2021-09/2022).

Participants: adult patients (≥18yo) undergoing elective colorectal surgery.

Data collection: Questionnaires focused on ORADEs, self-reported analgesia consumption, and 30-day unplanned healthcare utilization (emergency visits, readmissions).

Data Analysis: Descriptive statistics and Bayesian Model Averaging with a posterior effect probability (PEP) ≥ 50% supporting evidence of association (higher PEP = stronger evidence).

RESULTS

- A total of **347 patients** were included.
- Mean age 58±15 years, 53% Male, 64% laparoscopic, 31% rectal resection, median length of stay 3 days [IQR 1-5].
- **Rate of potential ORADEs: 81%.**

Table 1. Predictors of potential ORADEs

Predictors	PEP (%)	OR	95%CI
Depression, t-score	100	1.11	1.06-1.16
Opioid consumption	54	1.51	0.63-3.60

**Potential predictors included age, sex, body mass index, smoking status, diagnosis, preoperative opioid use, chronic pain, comorbidities, type of surgery, surgical approach, TAP block, inpatient opioid usage, length of stay, location, and NSAID consumption after discharge.*

Table 2. Effect of potential ORADEs on unplanned healthcare utilization

Predictors	PEP (%)	OR	95%CI
GI ORADE	100	2.66	1.55-4.55
CNS ORADE	97	2.47	1.34-4.55

GI, gastrointestinal (nausea, constipation, vomiting); CNS, central nervous system (drowsiness, impaired concentration, confusion, dizziness)

CONCLUSION

- Potential ORADEs affect 81% of colorectal surgery patients post-discharge.
- Increased opioid use and preoperative depression are key predictors.
- GI and CNS ORADEs contribute to unplanned healthcare utilization.