

Persistent Opioid Use After Endoscopic and Laparoscopic Gastrointestinal Procedures: Multi-Centered Analysis of Opioid-Naïve Patients

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Introduction

- **Background:** Perioperative opioid prescriptions are a major driver of persistent opioid use among opioid-naïve surgical patients.^{1,2}
- **Gap:** Despite the rise of minimally invasive GI procedures (endoscopic and laparoscopic), national trends in perioperative opioid prescribing and their long-term consequences remain underexplored.³
- **Rationale:** Although these procedures reduce tissue trauma and recovery time, the impact of perioperative opioid use on chronic dependence and related complications is not well understood.
- **Objective:** This study evaluates the association between perioperative opioid prescriptions and persistent use, as well as secondary outcomes including overdose, dependence, and healthcare utilization following minimally invasive GI surgeries.

Materials and Methods

- **Study Design:** Retrospective cohort study using the TriNetX US Collaborative Network (2016–2024).
- **Population:** Opioid-naïve adults undergoing endoscopic or laparoscopic GI procedures. Patients receiving a perioperative opioid prescription (–30 to +3 days from surgery) were 1:1 propensity-matched with non-opioid controls.
- **Outcomes:** Primary: persistent opioid use within 30 and 180 days postoperatively. Secondary: overdose, dependence, ED visits, inpatient hospitalization, and all-cause mortality.
- **Analysis:** Propensity score matching adjusted for demographics and comorbidities; risk ratios (RR) with 95% confidence intervals (CI) were calculated. Statistical significance set at $P < 0.05$.

Results

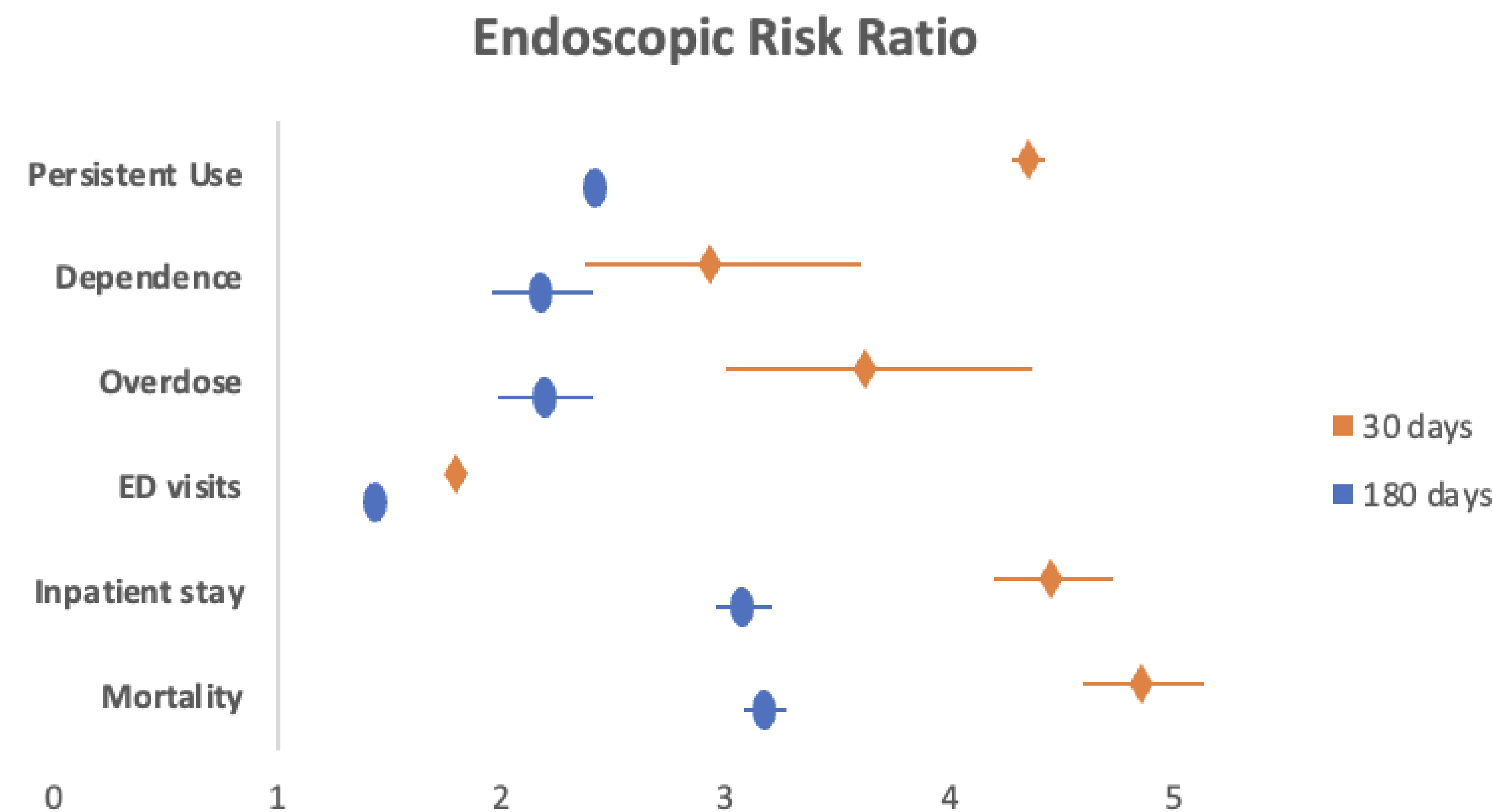


Figure 1. 30-day and 180-day risk ratios for postoperative outcomes in endoscopic GI procedures.

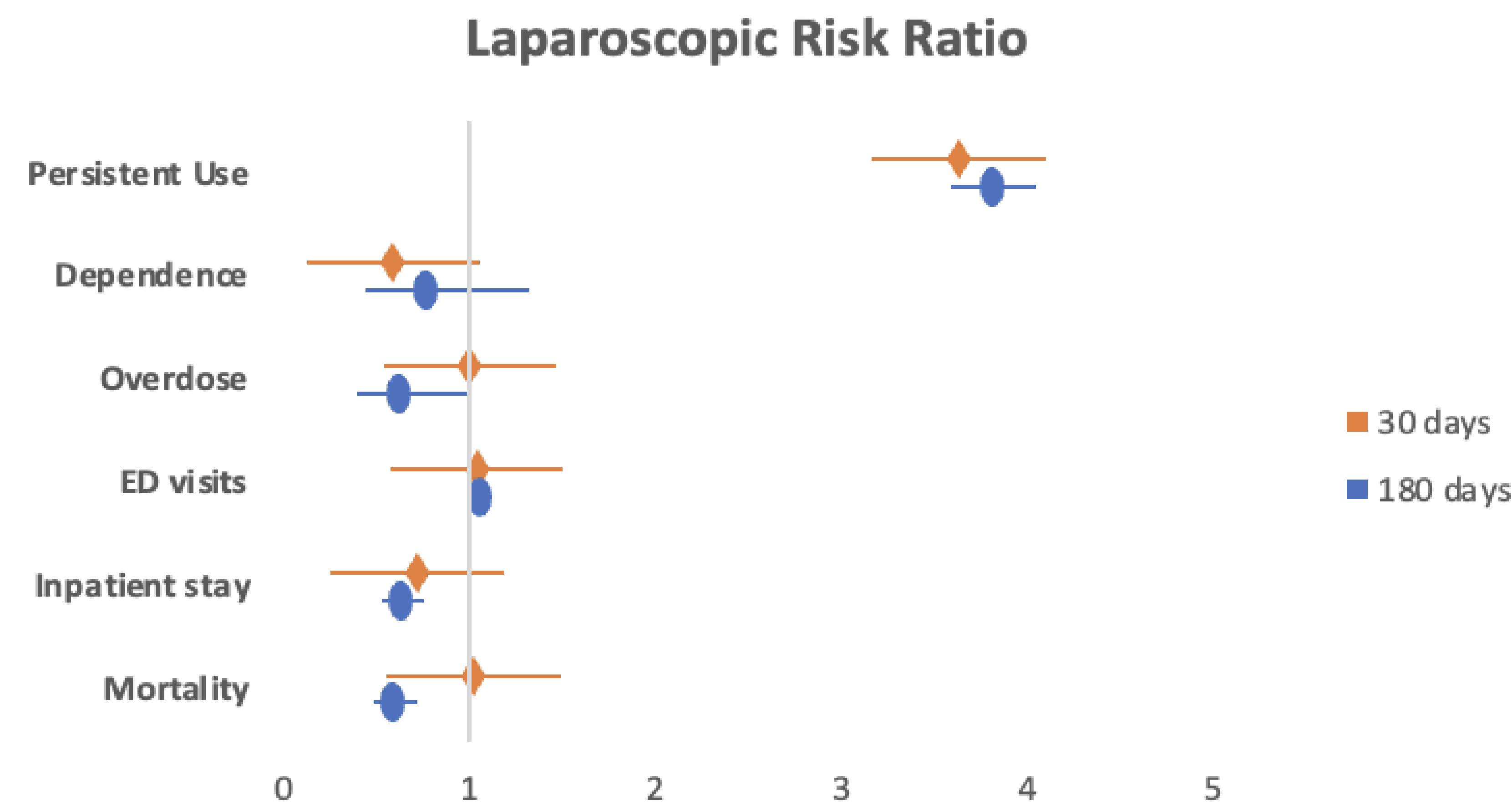


Figure 2. 30-day and 180-day risk ratios for postoperative outcomes in laparoscopic GI procedures.

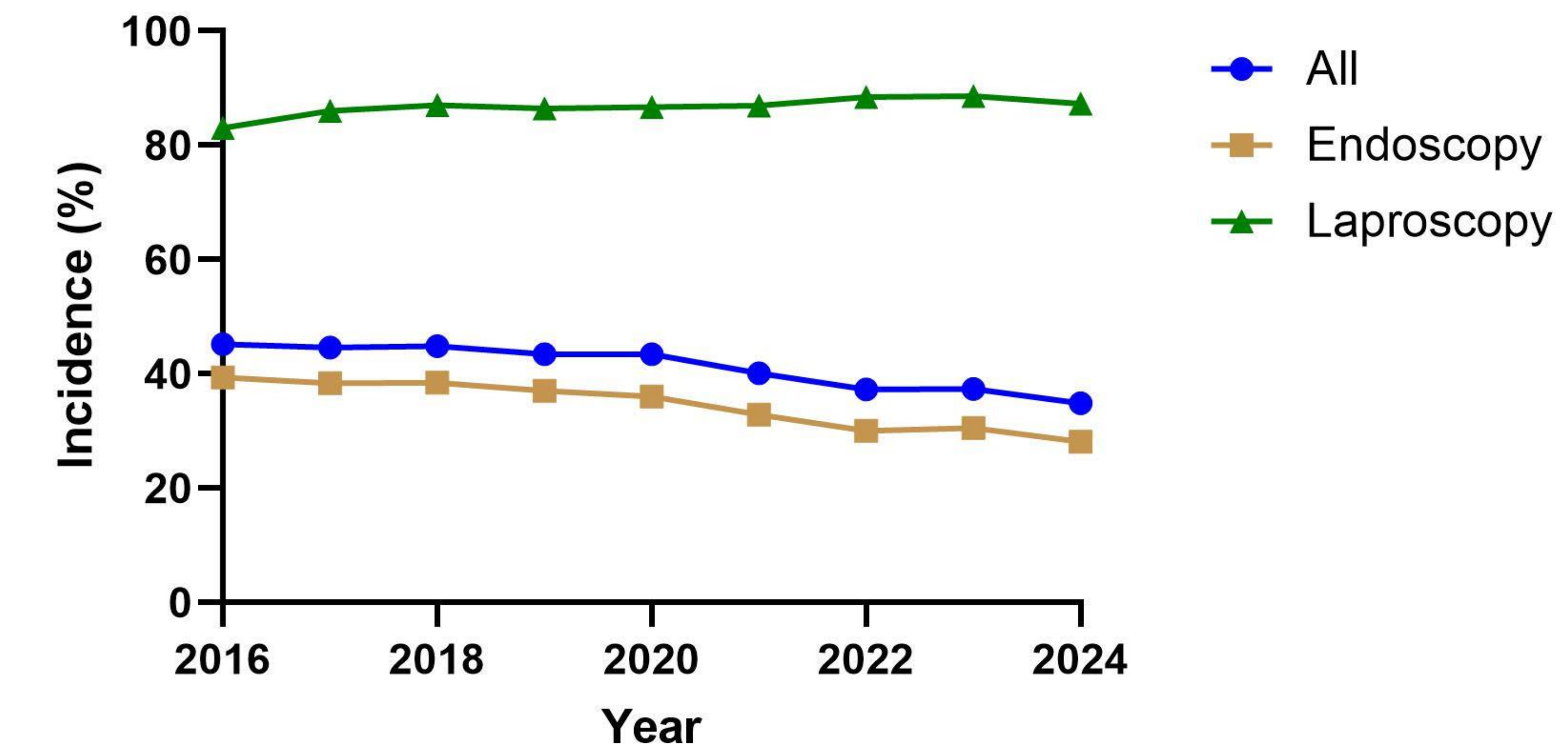


Figure 3. Perioperative opioid prescribing for opioid-naïve patients from 2016-2024.

Discussion

- **Endoscopic GI procedures:** Perioperative opioids strongly linked to persistent use and adverse outcomes, highlighting the need for opioid-sparing strategies.
- **Laparoscopic GI procedures:** Risk of long-term opioid use persists, but secondary complications show inconsistent associations, suggesting influences from surgical complexity, pain protocols, or patient selection.
- **Implications for practice:** Supports tailored opioid stewardship with non-opioid analgesics and multimodal pain management in minimally invasive GI surgery.
- **Future directions:** Clarify mechanisms behind variations and evaluate targeted interventions to reduce opioid-related harms while maintaining adequate postoperative pain control.

References

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