

Underuse of Guideline Recommended Triple Antiemetic Prophylaxis in High-Risk Surgical Patients: A Single Center Snapshot



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INTRODUCTION

Postoperative nausea and vomiting (PONV) remains one of the most distressing complications after anesthesia administration. Despite decades of research, the incidence remains approximately 30% in the general surgical population and may exceed 80% among high-risk individuals.¹ PONV contributes to delayed recovery, unanticipated hospital admissions, increased healthcare costs, and lower patient satisfaction scores, making effective prevention a crucial quality metric in perioperative care.

Current evidence-based guidelines identify several risk factors, including female sex, non smoking status, younger age, prior PONV or motion sickness, prolonged anesthesia duration, postoperative opioid exposure, and certain high-risk procedures.² Most institutions recommend multimodal prophylaxis with at least three antiemetic drug classes for any patient with ≥3 PONV risk factors.³

However, studies consistently show a gap between guideline recommendations and real-world practice. Undertreatment of those patients that are just meeting the high-risk threshold is particularly concerning, as these patients may be falsely perceived as lower risk by clinicians. Understanding prophylaxis patterns within our institution is essential for identifying preventable gaps, designing standardized protocols, and improving patient recovery experiences.

PURPOSE

Primary Objective

To evaluate adherence to institutional guidelines recommending the use of ≥3 antiemetic medication classes for surgical patients with ≥3 PONV risk factors.

Secondary Objectives

- To assess how adherence varies across patients with 3, 4, 5, and 6 PONV risk factors.
- To quantify the proportion of patients who receive inadequate prophylaxis despite meeting criteria for high-risk status.
- To identify patient groups most vulnerable to undertreatment and inform future quality improvement initiatives, including EMR order set optimization and checklist-based interventions.

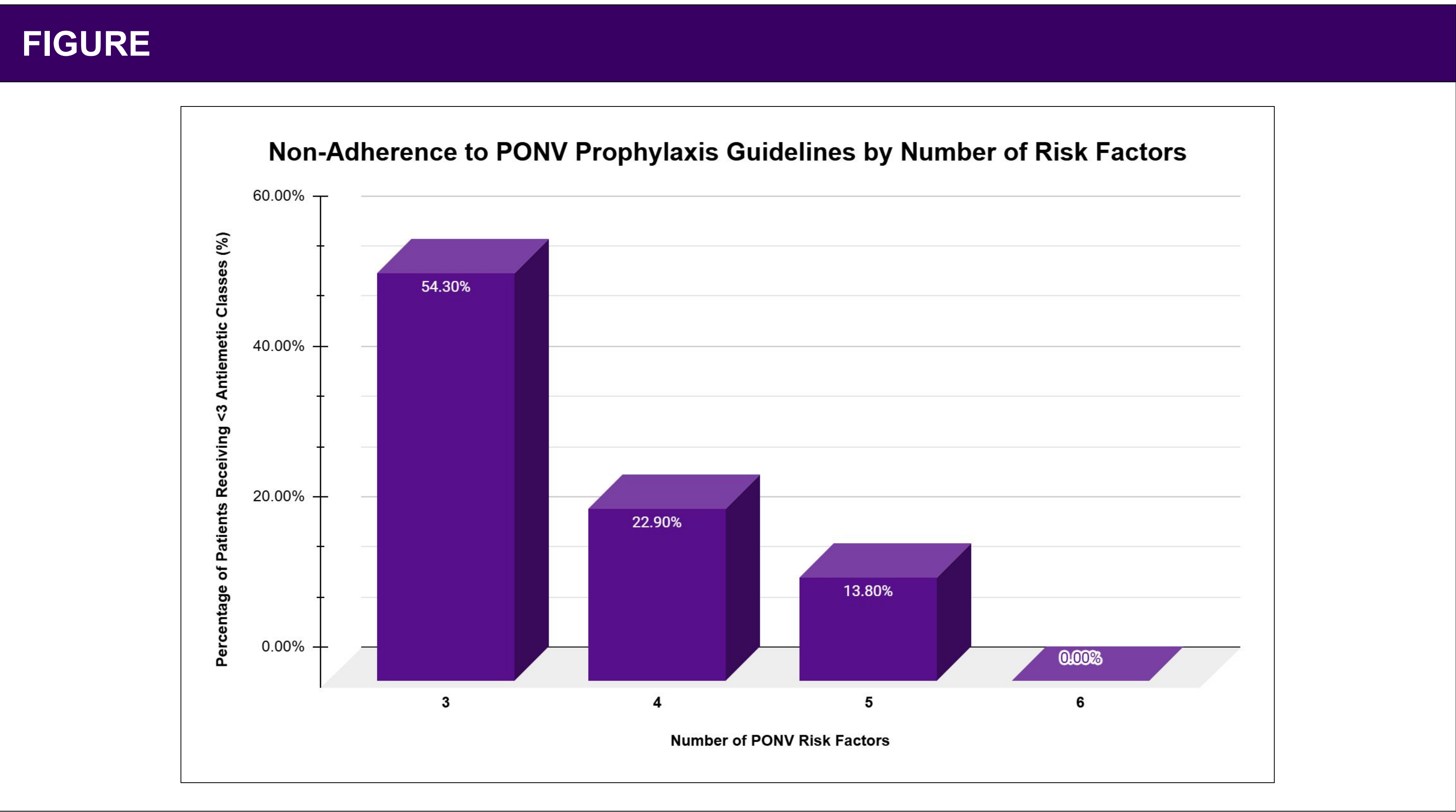
METHOD

Design: Retrospective cohort study
Sample: 255 adult patients undergoing elective surgery under general anesthesia

Inclusion Criteria: ≥3 known PONV risk factors

- Age <50 years
- Female sex
- Nonsmoker
- Prior PONV or motion sickness
- Anesthesia duration >1 hour
- Postoperative opioid use
- High-risk surgical procedure

Outcome: Administration of ≥3 antiemetic medication classes
Analysis: Descriptive statistics summarized adherence across patients with 3–6 total risk factors



RESULTS

Among 255 high-risk surgical patients, 71 (27.8%) failed to receive the guideline-recommended ≥3 antiemetic classes. The greatest underuse occurred in patients with the minimum qualifying risk score of 3 risk factors. 54.3% of patients (44/81) with 3 risk factors received inadequate prophylaxis and this adherence was correlated with increasing risk burden.

CONCLUSIONS

There is a significant underuse of guideline-recommended PONV prophylaxis at our institution, particularly among patients with exactly 3 PONV risk factors. Although these patients meet the threshold for high-risk status, over half did not receive adequate prophylaxis. Adherence improved progressively as the number of risk factors increased, suggesting potential underestimation of risk in the borderline high-risk group or therapeutic inertia in prescribing multiple antiemetic classes.

To strengthen compliance, potential interventions might include the following:

- Incorporating standardized preoperative checklists
- Embedding guideline-based antiemetic bundles into EMR order sets
- Education on risk-based escalation of prophylaxis

Future work should assess reasons for undertreatment and whether improved adherence in this patient population reduces PONV incidence and postoperative dissatisfaction.

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