

Postoperative Nausea and Vomiting by Surgery Type on POD0-2



Alison Cline,¹ Javier Solis,¹ Germaine Cuff, PhD,²
¹NYU Grossman School of Medicine, ²NYU Langone Health

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SUMMARY

In this preliminary ambulatory cohort, for all procedure categories except gynecologic surgery, postoperative nausea and vomiting (PONV) incidence was low on POD0 and increased on POD1. POD1 represented the peak symptom window, with orthopedic and urologic cases showing the highest overall burden. These findings highlight the importance of monitoring for delayed PONV and considering procedure-specific and opioid-related factors in postoperative recovery.

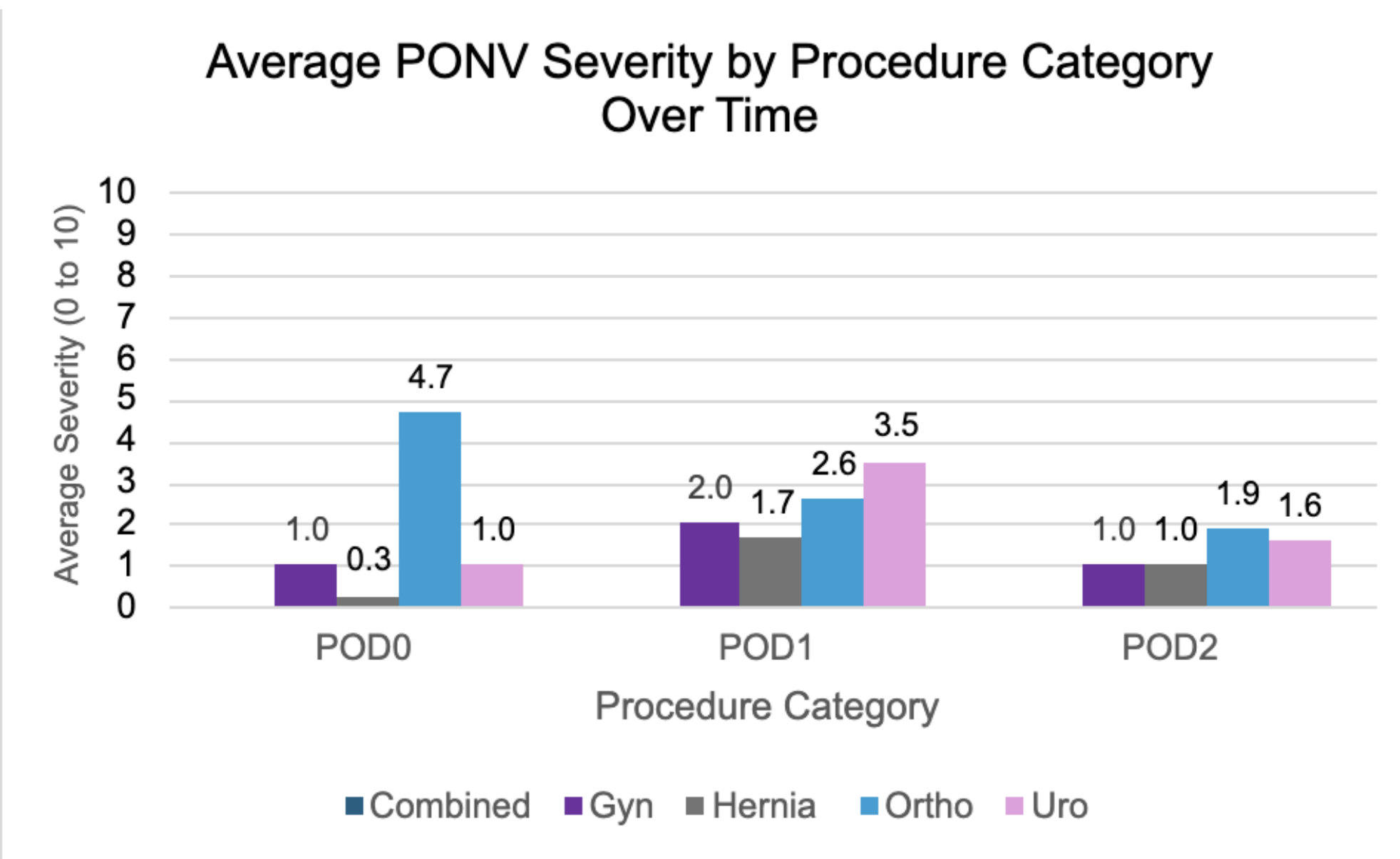
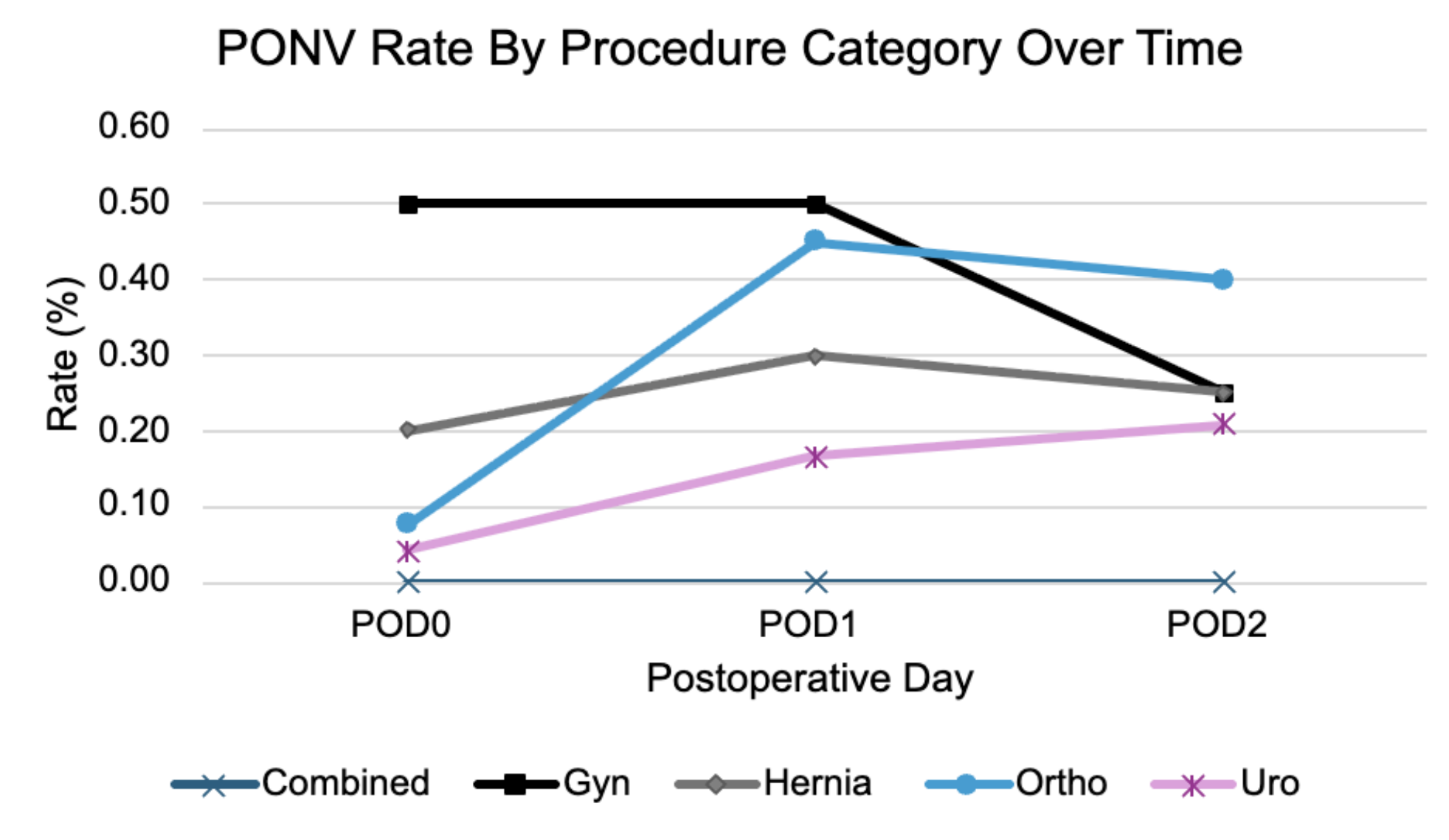
INTRODUCTION

PONV occurring within 24-48 hours after surgery, is a common postoperative complication affecting up to 30% of general surgical patients. Risk factors are multifaceted, including female sex, non-smoking status, history of motion sickness or PONV, and opioid administration. Certain procedures, specifically cholecystectomies, laparoscopic or gynecologic surgeries, have been associated with higher risk. As these factors guide PONV prophylaxis and management strategies, a more robust understanding of their effect may improve patient care. This study evaluates procedure-specific incidence and severity of PONV over time within an ambulatory surgical population to help inform PONV prevention and management

METHODS

- **Design:** Retrospective analysis of prospectively collected data from an ongoing IRB-approved study.
- **Population:** First 100 consecutive patients enrolled at a single academic center; 9 excluded for incomplete surveys.
- **Eligibility:** Elective outpatient surgery ≥60 min under general anesthesia; no history of severe PONV (per parent study).
- **Data Collection:**
 - ~ Quality of Recovery-15 (QoR-15) survey administered approximately one hour after PACU arrival (POD0) by research staff.
 - ~ Patients self-completed QoR-15 on POD1-2 via smartphone app.
- **Outcome Measure:**
 - ~ Extracted Q13 (nausea/vomiting frequency, 0–10 scale over past 24hrs).
 - ~ Score > 0 = PONV incidence; raw score used as proxy for severity.
- **Analysis:** Descriptive statistics comparing PONV rate (incidence / total case count) and severity on POD0–2 across surgery groups (gynecologic, hernia, orthopedic, urologic, combined).

PONV Rate				Average PONV Severity			
Category	POD0	POD1	POD2	Category	POD0	POD1	POD2
Combined	0.00	0.00	0.00	Combined	0	0	0
Gyn	0.50	0.50	0.25	Gyn	1.0	2.0	1.0
Hernia	0.20	0.30	0.25	Hernia	0.3	1.7	1.0
Ortho	0.08	0.45	0.40	Ortho	4.7	2.6	1.9
Uro	0.04	0.17	0.21	Uro	1.0	3.5	1.6



RESULTS

- Most patients underwent orthopedic procedures (n=40), followed by urologic (n=24), hernia (n=20), gynecologic (n=4), and combined (n=3).
- Excluding gynecologic patients, overall rates of PONV on POD0 were low, but increased or remained stable across all procedure categories on POD1.
- Highest POD1 incidence rates were observed amongst orthopedic (0.45) and gynecologic (0.5) patients.
- PONV severity generally increased from POD0 to POD1, with greatest burden in urologic (3.5) and orthopedic (2.6) cases.
- Orthopedic patients reported the highest early severity on POD0 (mean 4.7).
- From POD1 to POD2, severity and incidence decreased across all surgical categories.

DISCUSSION

PONV incidence and severity rose from POD0 to POD1, consistent with established patterns of PONV, which typically peaks within the first 24 hours post-operatively.

On POD0, gynecologic and hernia procedures demonstrated the highest overall rates, consistent with existing literature presenting gynecologic and laparoscopic surgeries as independent PONV risk factors. Orthopedic patients showed disproportionately high incidence and severity, including the highest early POD0 burden, which may reflect greater postoperative opioid requirements, a well-recognized driver of PONV, or use of inhaled anesthetic rather than propofol total intravenous. In urologic patients, symptom severity tripled from POD0 to POD1, which may be related to the presence of a Foley catheter, stent colic, or postoperative opioid use.

Collectively, these findings underscore potential procedure-specific differences in PONV risk and highlight the importance of multi-day patient-reported outcome collection, which can capture delayed symptoms not evident in the PACU and may improve discharge counseling and risk-stratified prevention strategies.

CONCLUSIONS

PONV incidence and severity generally followed expected postoperative patterns, with notable exceptions. Orthopedic patients showed increased PONV peaking at 24 hours, likely reflecting postoperative opioids and unmeasured procedural or anesthetic factors. As the cohort grows, larger sample sizes will enable more robust procedure-level comparisons and may inform targeted prophylaxis strategies. Current data highlights importance of monitoring for PONV after PACU discharge.

Limitations:

- Small sample sizes, especially for gynecologic and combined procedures, limit precision.
- Anesthetic technique, a potential confounder, was not included.
- Self-reported symptoms introduce potential bias and error.
- Single-center design limits generalizability.
- Descriptive analysis limits conclusions to hypothesis-generating findings.

Future directions:

- Expand cohort to support multivariate analyses.
- Add individual risk-factor data (e.g., Apfel components) for risk-adjusted models.
- Collect anesthetic-technique and opioid-use data.
- Consider multi-center participation to improve generalizability.

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