

Postoperative Nausea and Vomiting Prophylaxis

Intraoperative teaching · CA-1

THE QUESTION

Where the evidence disagrees

For adult patients, standard PONV prophylaxis should include two antiemetics, such as dexamethasone combined with a 5-HT3 receptor antagonist.

THE EVIDENCE

What each source contributes, and how strong it is

Study design first — a cohort and a randomised trial do not carry the same weight.

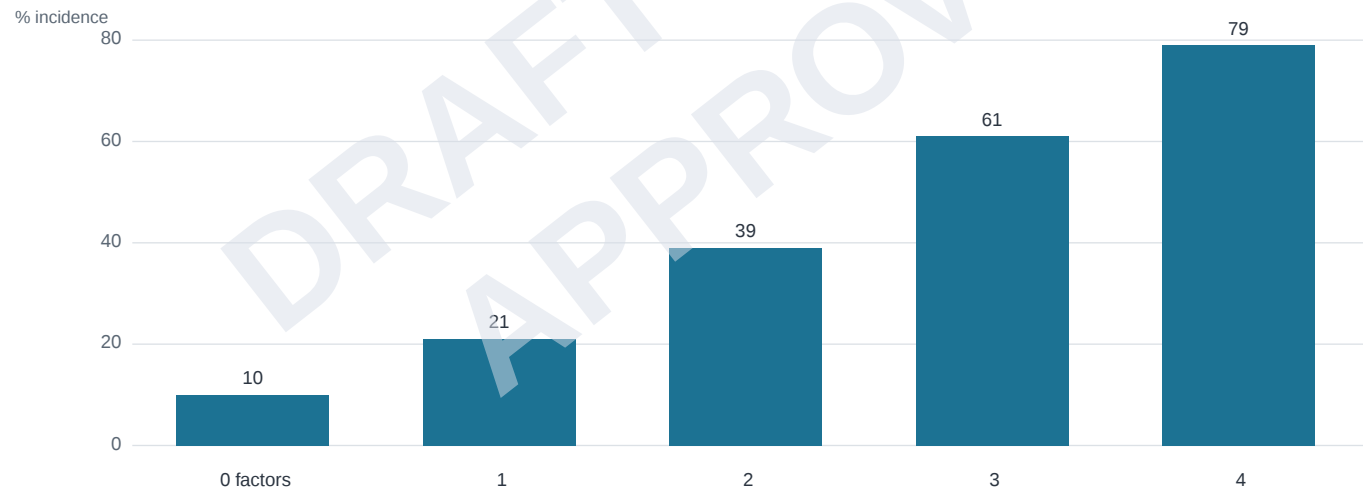
Design	Year	Journal	What it found
Other	2022	Der Anaesthesist	Standard PONV prophylaxis includes two antiemetics
Other	2024	Journal of perianesthesia nursing	PONV Management Evidence Summary
Other	2021	Paediatric drugs	Multimodal prophylaxis reduces PONV in high-risk kids
Other	2020	Turkish journal of anaesthesiology	Multimodal Anesthesia Reduces PONV Risk

4 resolved citations behind this deck; every point above traces to one of them.

THE NUMBERS

Risk is countable before induction, and it climbs steeply

Count the four with them out loud, then decide the prophylaxis.



Female sex, non-smoking, prior PONV or motion sickness, and postoperative opioids. Two of four is where prophylaxis starts earning its place.

Apfel simplified risk score, Anesthesiology 1999 · PMID 10485781

IN PRACTICE

What the cohorts and reviews add

4 findings, each on the slide that follows.

Standard PONV prophylaxis includes two antiemetics

For adult patients, standard PONV prophylaxis should include two antiemetics, such as dexamethasone combined with a 5-HT3 receptor antagonist.

PONV Management Evidence Summary

The abstract does not contain specific thresholds, maneuvers, risks, sequences, facts, doses, or numbers related to PONV prophylaxis. It is a summary...

Multimodal prophylaxis reduces PONV in high-risk kids

For children at high risk of PONV, consider multimodal combination prophylaxis using two or three antiemetics from different classes plus propofol...

Multimodal Anesthesia Reduces PONV Risk

Mitigating PONV risk involves using multimodal nonopioid analgesia, total intravenous anesthesia instead of volatile anesthetics

IN PRACTICE**Standard PONV prophylaxis includes two antiemetics**

Other · Der Anaesthesist

For adult patients, standard PONV prophylaxis should include two antiemetics, such as dexamethasone combined with a 5-HT3 receptor antagonist.

[Update on PONV-What is new in prophylaxis and treatment of postoperative nausea and vomiting? : Summary of recent consensus recommendations and Cochrane reviews on prophylaxis and treatment of postoperative nausea and vomiting], Der Anaesthesist 2022 · PMID 34596699

IN PRACTICE**PONV Management Evidence Summary**

Other · Journal of perianesthesia nursing

The abstract does not contain specific thresholds, maneuvers, risks, sequences, facts, doses, or numbers related to PONV prophylaxis. It is a summary of evidence regarding PONV management. Therefore, I cannot extract a concrete, actionable teaching point based on the provided text.

PONV Management in Adult Patients: Evidence-based Summary, Journal of perianesthesia nursing : official journal of the American Society of PeriAnesthesia Nurses 2024 · PMID 38935008

IN PRACTICE**Multimodal prophylaxis reduces PONV in high-risk kids**

Other · Paediatric drugs

For children at high risk of PONV, consider multimodal combination prophylaxis using two or three antiemetics from different classes plus propofol TIVA.

Postoperative Nausea and Vomiting in Pediatric Patients, Paediatric drugs 2021 · PMID 33108649

IN PRACTICE**Multimodal Anesthesia Reduces PONV Risk**

Other · Turkish journal of anaesthesiology

Mitigating PONV risk involves using multimodal nonopioid analgesia, total intravenous anesthesia instead of volatile anesthetics, and prophylactic pharmacotherapy like corticosteroids, 5HT3 antagonists, or anticholinergics.

Postoperative Nausea and Vomiting in Paediatric Anaesthesia, Turkish journal of anaesthesiology and reanimation 2020 · PMID 32259138

IN THE ROOM**What this changes about the next case**

Colour is the strength of the evidence behind each step, not the urgency.

- 1 For adult patients, standard PONV prophylaxis should include two antiemetics, such as dexamethasone combined with a 5-HT3 receptor antagonist.
- 2 The abstract does not contain specific thresholds, maneuvers, risks, sequences, facts, doses, or numbers related to PONV prophylaxis. It is a summary of evidence regarding PONV management. Therefore, I cannot extract a concrete, actionable teaching point based on the provided text.
- 3 For children at high risk of PONV, consider multimodal combination prophylaxis using two or three antiemetics from different classes plus propofol TIVA.

Mitigating PONV risk involves using multimodal nonopioid analgesia, total intravenous anesthesia instead of volatile anesthetics, and prophylactic pharmacotherapy like corticosteroids, 5HT3 antagonists, or anticholinergics.

KEY TAKEAWAYS

What to carry into the next case

Standard PONV prophylaxis includes two antiemetics

Der Anaesthesist 2022

PONV Management Evidence Summary

Multimodal prophylaxis reduces PONV in high-risk kids

Paediatric drugs 2021

Multimodal Anesthesia Reduces PONV Risk

Turkish journal of anaesthesiology and reanimation 2020

Use two antiemetics (like dexamethasone + 5-HT3 blocker) for adult PONV prophylaxis; consider multimodal approaches for high-risk children.

QUESTIONS I'LL ASK YOU IN THE ROOM

1. What factors influence a patient's risk for postoperative nausea and vomiting (PONV)?
2. Which prophylactic agents are commonly used to prevent PONV?
3. How does the choice of anesthetic technique impact PONV prophylaxis strategies?
4. What is the role of multimodal therapy in managing PONV risk?

ORAL BOARDS STEM

A 29-year-old non-smoking woman with a history of motion sickness presents for laparoscopic gynaecologic surgery and will receive postoperative opioids.

BOARD QUESTIONS

1. What are the four predictors in the simplified Apfel risk score, and what PONV incidence corresponds to each score from 0 to 4?
2. A non-smoking woman with a history of motion sickness is scheduled for surgery expected to need postoperative opioids. Using the simplified Apfel score, what is her approximate risk of PONV within 24 hours?
 - A. About 79%
 - B. About 39%
 - C. About 61%
 - D. About 21%
3. The Apfel score has an area under the ROC curve of roughly 0.63 to 0.73. What does that tell you about how it should and should not be used?

ANSWER KEY

1. **Female sex, a history of motion sickness or previous PONV, non-smoking status, and the expected use of postoperative opioids. With none, one, two, three or four of these present, the incidences of PONV were 10%, 21%, 39%, 61% and 79% respectively.**

Four questions you can ask in the holding area produce a number. Two or more risk factors is where the original paper suggests prophylaxis should be considered.

Apfel et al., A simplified risk score for predicting postoperative nausea and vomiting, Anesthesiology 1999 · PMID 10485781

2. **A. About 79%**

All four predictors are present, so the score is 4, corresponding to a 79% incidence in cohorts that received no antiemetic prophylaxis. This is the highest-risk band the score describes.

Apfel et al., A simplified risk score for predicting postoperative nausea and vomiting, Anesthesiology 1999 · PMID 10485781

3. **That is modest discrimination — better than chance and enough to stratify a population into risk bands, but not enough to predict confidently which individual patient will vomit. It supports using the score to grade risk, rather than treating a low score as a reassurance about a particular patient.**

A validated score with an AUC in the 0.7 range is a stratification tool, not a diagnostic test.

Apfel et al., A simplified risk score for predicting postoperative nausea and vomiting, Anesthesiology 1999 · PMID 10485781

Use two antiemetics (like dexamethasone + 5-HT3 blocker) for adult PONV prophylaxis; consider multimodal approaches for high-risk children.

SOURCES

- [1] [Update on PONV-What is new in prophylaxis and treatment of postoperative nausea and vomiting? : Summary of recent consensus recommendations and Cochrane reviews on prophylaxis and treatment of postoperative nausea and vomiting], Der Anaesthesist 2022 · PMID 34596699
- [2] PONV Management in Adult Patients: Evidence-based Summary, Journal of perianesthesia nursing : official journal of the American Society of PeriAnesthesia Nurses 2024 · PMID 38935008
- [3] Postoperative Nausea and Vomiting in Pediatric Patients, Paediatric drugs 2021 · PMID 33108649
- [4] Postoperative Nausea and Vomiting in Paediatric Anaesthesia, Turkish journal of anaesthesiology and reanimation 2020 · PMID 32259138
- [5] Apfel simplified risk score, Anesthesiology 1999 · PMID 10485781

DRAFT — NOT
APPROVED