Re-examining Metoclopramide's Role in Prevention of Postoperative Nausea and/or Vomiting

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INTRODUCTION

- Postoperative nausea and/or vomiting (PONV) continue to be two of the most undesirable and distressing complications following general anesthesia, affecting 20-30% of all surgical patients and up to 70% of patients with multiple known risk factors. [1-4]
- Clinical guidelines recommend identifying PONV prophylactic interventions based on risk score. [1-8]
- While the guidelines recommend several antiemetics, metoclopramide was not recommended. [9] However, evidence used to support the guidelines is no longer considered valid. [10-13]

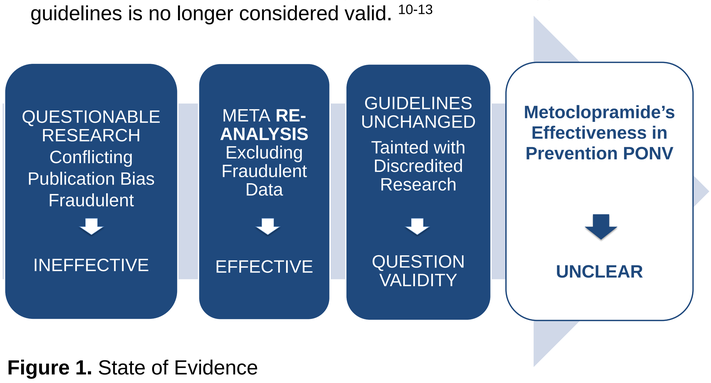

Figure 1. State of Evidence

- Therefore, the **purpose** of this study was to re-examine the use of metoclopramide and describe the incidence of subsequent PONV stratified by risk scores among adult ambulatory surgical patients.

METHODS

- Data from 2,166 participants in a 12-center, prospective, observational, cohort of adult ambulatory surgical patients who underwent general anesthesia [3]
- PONV risk scores were calculated with Apfel's risk score [2]

Risk Factors	Points
Female	1
Non-Smoker	1
History PONV/Motion Sickness	1
Perioperative Opioids	1
RISK SCORE = Sum	**0,1,2,3,4**

- Intraoperative antiemetic treatments were defined as:
  1) metoclopramide 10 mg IV
  2) metoclopramide 10 mg IV + dexamethasone 8 mg IV
  3) metoclopramide 10 mg IV + odansetron 4 mg IV
  4) metoclopramide 10 mg IV + dexamethasone 8 mg IV + ondansetron 4 mg IV
- PONV ratings at 30, 60, and 120 min after surgery, and at discharge were recoded to dichotomous variables to determine PONV
- Exact methods based on the binomial distribution were used to compare the observed incidence of PONV in the postanesthesia care unit (PACU) to the expected incidence based on PONV risk score

RESULTS

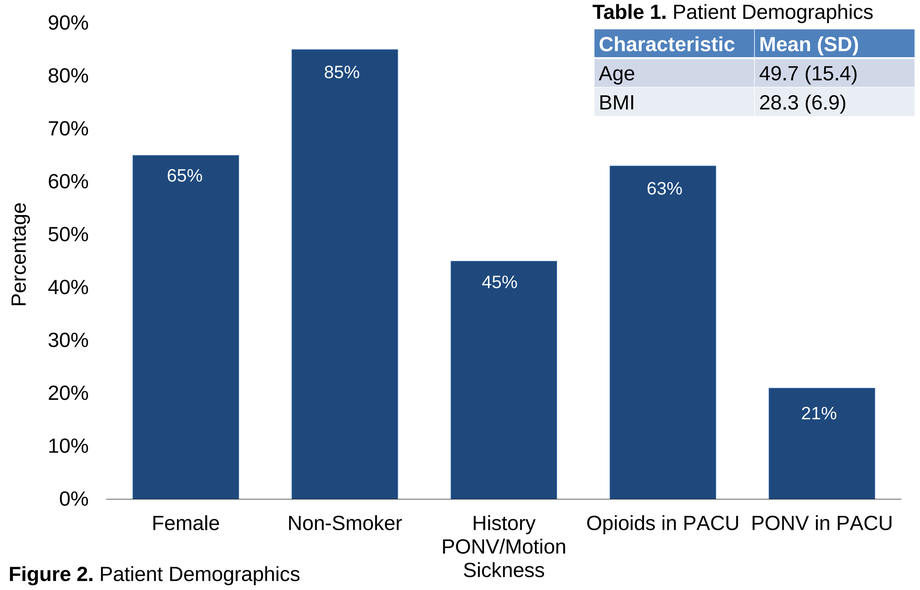

Figure 2. Patient Demographics

Table 1. Patient Demographics

Characteristic	Mean (SD)
Age	49.7 (15.4)
BMI	28.3 (6.9)

Table 2. Observed Incidence of PONV by PONV Risk Score

Expected Incidence of PONV by Risk Score	0	1	2	3	4
	10%	21%	39%	61%	79%
TREATMENT	**OVERALL INCIDENCE**				
Met Only	3/12 (25%)	-	0/1 (0%) -	0/4 (0%) -	3/6 (50%) +	0/1 (0%) -
Met/Dex	0/1 (0%)	-	0/1 (0%) -	-	-	-
Met/Odn	10/56(18%)	-	0/5 (0%) -	1/12 (8%) +++*	4/25 (16%) +++**	5/14 (36%) +++**
Met/Odn/Dex	9/34 (27%)	-	0/1 (0%) -	0/4 (0%) -	3/12 (25%) +++*	6/17 (35%) +++**

Note: Beneficial effect: + = small; ++ = medium; +++ = large; * = $p < 0.05$; ** = $p < 0.001$

CONCLUSIONS

- Incidence of PONV was less than expected based on PONV risk scores across all levels of risk among participants who received one of the metoclopramide antiemetic treatments
- Recommend further studies of metoclopramide's effectiveness in randomized control trials as a single agent and in combination with other antiemetics based on PONV risk scores
- Recommend clinical guidelines be revised to include metoclopramide as an option
- Metoclopramide is a viable choice as a single agent for patients at low-risk for PONV
- Metoclopramide is a viable choice in combination with dexamethasone and/or odansetron for patients at moderate to high risk for PONV

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