

Comparison of two rescue therapy protocols for treating patients with PONV after outpatient cancer surgery under general anesthesia

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Background

- Incidence of postoperative nausea and vomiting (PONV) is 30% in the general population.¹
- PONV is associated with longer post anesthesia care unit (PACU) stays, unanticipated hospital admission, increased costs, and significant patient distress.²⁻³
- Limited evidence on optimal combination rescue therapy for PONV.
- New institution-wide PONV rescue protocol at Memorial Sloan Kettering Cancer Center (MSK) implemented in 2022 to be in line with recent guidelines.
- **Aim: to investigate PONV-related outcomes after outpatient cancer surgery at MSK's Josie Robertson Surgery Center (JRSC).**

Methods

- IRB-approved retrospective study
- Before change (10/1/2017-5/31/2022): N=11,641
- After change (8/1/2022-4/14/2023): N=1,877
- Multivariable logistic regression to test the association between protocol period and PONV-related outcomes (need for second line antiemetic and prolonged stay) adjusting for: age, preoperative Apfel score, ASA score, surgical service, operative time, gas vs total intravenous anesthesia (TIVA), total intraoperative opioids (MMEs), intraoperative midazolam, and preoperative and intraoperative antiemetics.

Discussion

- Updated protocol, with amisulpride as first-line rescue antiemetic, was not associated with clinically meaningful changes to probability of PONV-related outcomes.
- Might be due to already low rates of PONV outcomes after outpatient surgery at JRSC
- Current pathway remains the standard of care.

Updated protocol: amisulpride, as a first-line rescue antiemetic, was not associated with clinically meaningful changes to probability of PONV-related outcomes.

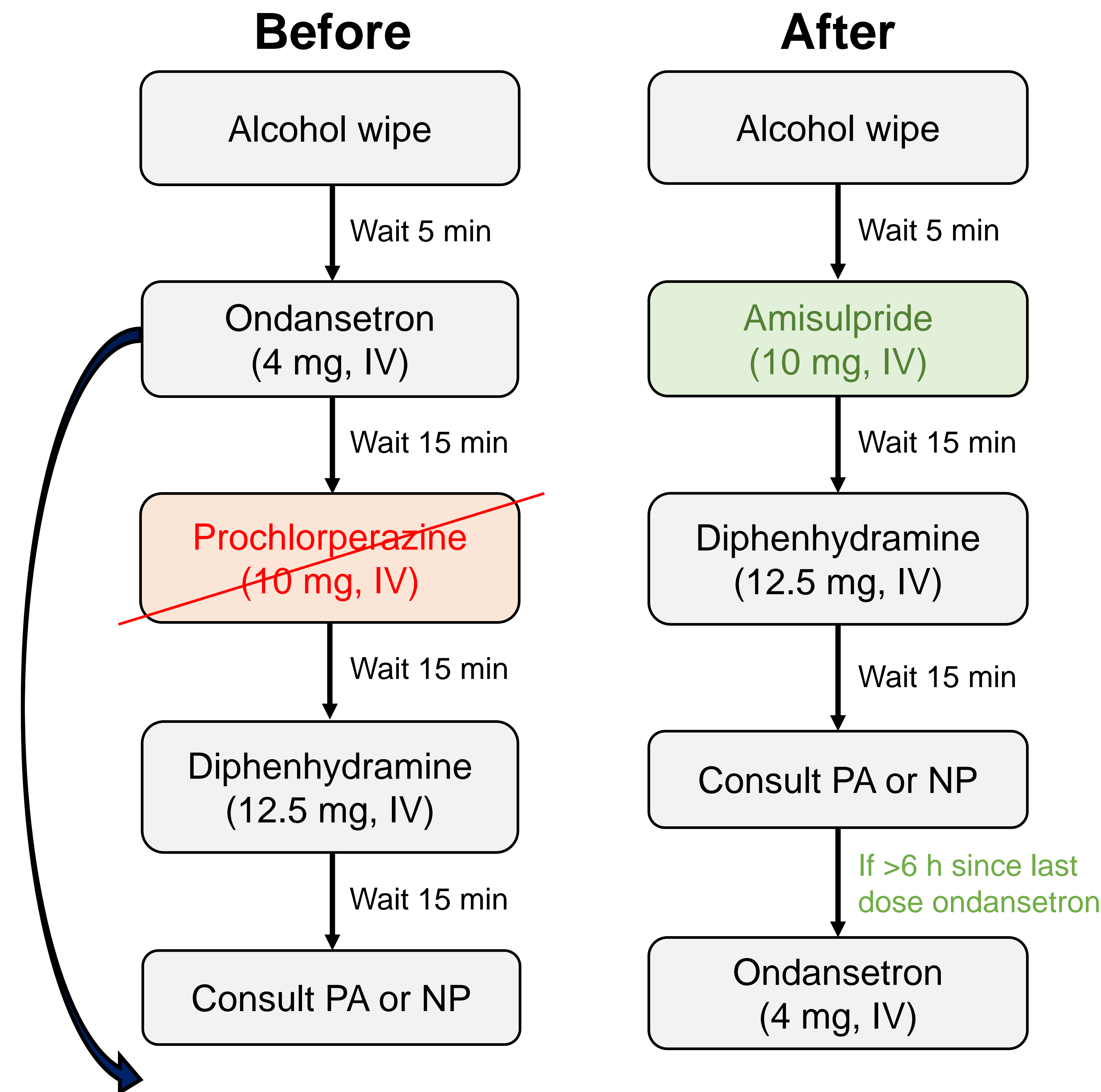


Figure 1. PONV rescue therapy protocol at JRSC before and after June 2022

Table 1. Patient characteristics by study period. Estimates are presented as n (%) and median (quartile 1, quartile 3). P-values were generated by Wilcoxon rank sum test and Pearson's Chi-squared test.

Characteristic	Before, N = 11,641	After, N = 1,877	p-value
Age	55 (46, 65)	57 (47, 66)	<0.001
ASA Score 3-4	30 (0.3%)	3 (0.2%)	0.6
Unknown	2	0	
Apfel Score 3-4	2,781 (24%)	382 (20%)	<0.001
BMI	27 (23, 32)	27 (24, 32)	0.050
Female	10,432 (90%)	1,633 (87%)	<0.001
Anesthetic Type			<0.001
Gas	5,448 (47%)	1,293 (69%)	
TIVA	6,193 (53%)	584 (31%)	
Hispanic	972 (8.8%)	177 (10%)	0.039
Unknown	624	175	
Race			<0.001
Asian	795 (6.8%)	141 (7.5%)	
Black	1,063 (9.1%)	176 (9.4%)	
Other	451 (3.9%)	79 (4.2%)	
Unknown	437 (3.8%)	111 (5.9%)	
White	8,895 (76%)	1,370 (73%)	
Service			<0.001
BRE	2,221 (19%)	418 (22%)	
GMT	411 (3.5%)	81 (4.3%)	
GYN	1,850 (16%)	320 (17%)	
HNS	855 (7.3%)	145 (7.7%)	
PLA	5,891 (51%)	804 (43%)	
URO	413 (3.5%)	109 (5.8%)	

Results

Characteristic	1, N = 1,214	2, N = 281	3, N = 46	4, N = 12	5, N = 3
PONV Medication					
Ondansetron	1,150 (95%)	42 (15%)	12 (26%)	9 (75%)	3 (100%)
Metoclopramide	23 (1.9%)	137 (49%)	10 (22%)	0 (0%)	0 (0%)
Compazine	22 (1.8%)	80 (28%)	8 (17%)	0 (0%)	0 (0%)
Lorazepam	8 (0.7%)	15 (5.3%)	5 (11%)	3 (25%)	0 (0%)
Benedryl	8 (0.7%)	7 (2.5%)	8 (17%)	0 (0%)	0 (0%)
Scopolamine	1 (<0.1%)	0 (0%)	2 (4.3%)	0 (0%)	0 (0%)
Amisulpride	0 (0%)	0 (0%)	1 (2.2%)	0 (0%)	0 (0%)
Aprepitant	1 (<0.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Promethazine	1 (<0.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Table 1. Type of postoperative antiemetic use by study period where columns represent the rescue antiemetic sequence (i.e., first-line, second-line rescue).

No statistically significant change in need for second-line antiemetic:

- Before change: 281 (2.4%)
- After change: 49 (2.6%)
- No evidence of a statistically or clinically significant difference associated with being treated in the after period, 0.10% (95% CI -0.18%, 0.37%; p=0.5)

No statistically significant change in rate of extended stays (6+ hours) due to PONV:

- Before change: 1.0% (118)
- After change: 1.2% (22)
- Adjusted absolute increase in risk negligible, 0.07% (95% CI -0.09%, 0.23%; p=0.3)

References

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