

Effectiveness of Ice Packs on Post-Operative Nausea

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Background

Approximately 1/3 of patients experience post-operative nausea (PON) and often report it as more disturbing than postoperative pain. When not adequately managed PON can result in complications that may require unanticipated hospital admission and decrease patient satisfaction. Antiemetic medications have potential side effects, patients may have allergies or adverse reactions, some do not effectively treat PON, they could interact negatively with the anesthetic agents, may contribute to additional drowsiness, cause unwanted side effects, may not be available, and can be expensive. Because there are limited pharmacological options to treat PON, it is important to maximize nonpharmacological approaches.

Purpose


Evaluate the effectiveness of a non-pharmacological approach to treat post-operative nausea (PON) by applying an ice pack to the upper back of the neck.

Methods

Patients who experience mild to moderate nausea received a cold pack as their first line PON treatment. The post-operative nurse documented:

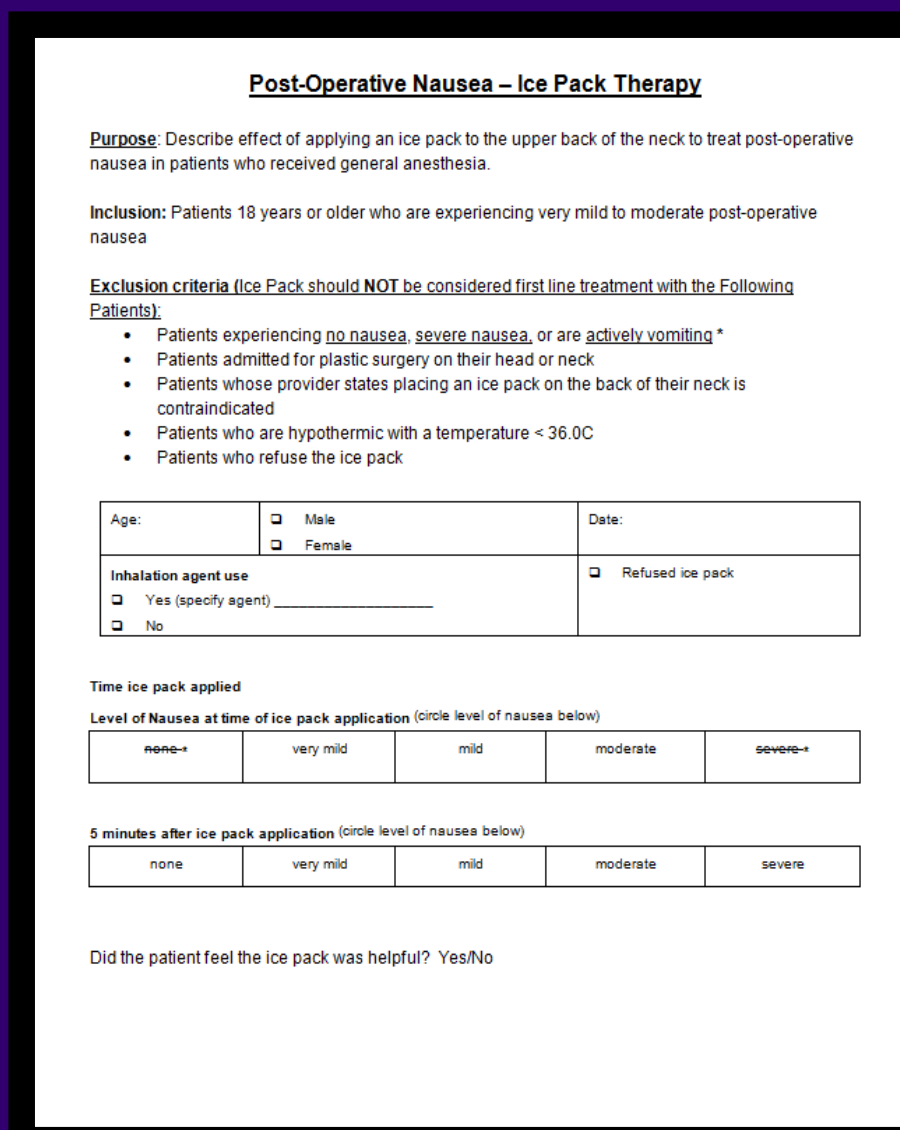
- Nausea level at the time the ice pack was applied
- Nausea level five minutes after application of the ice pack

Materials & Results

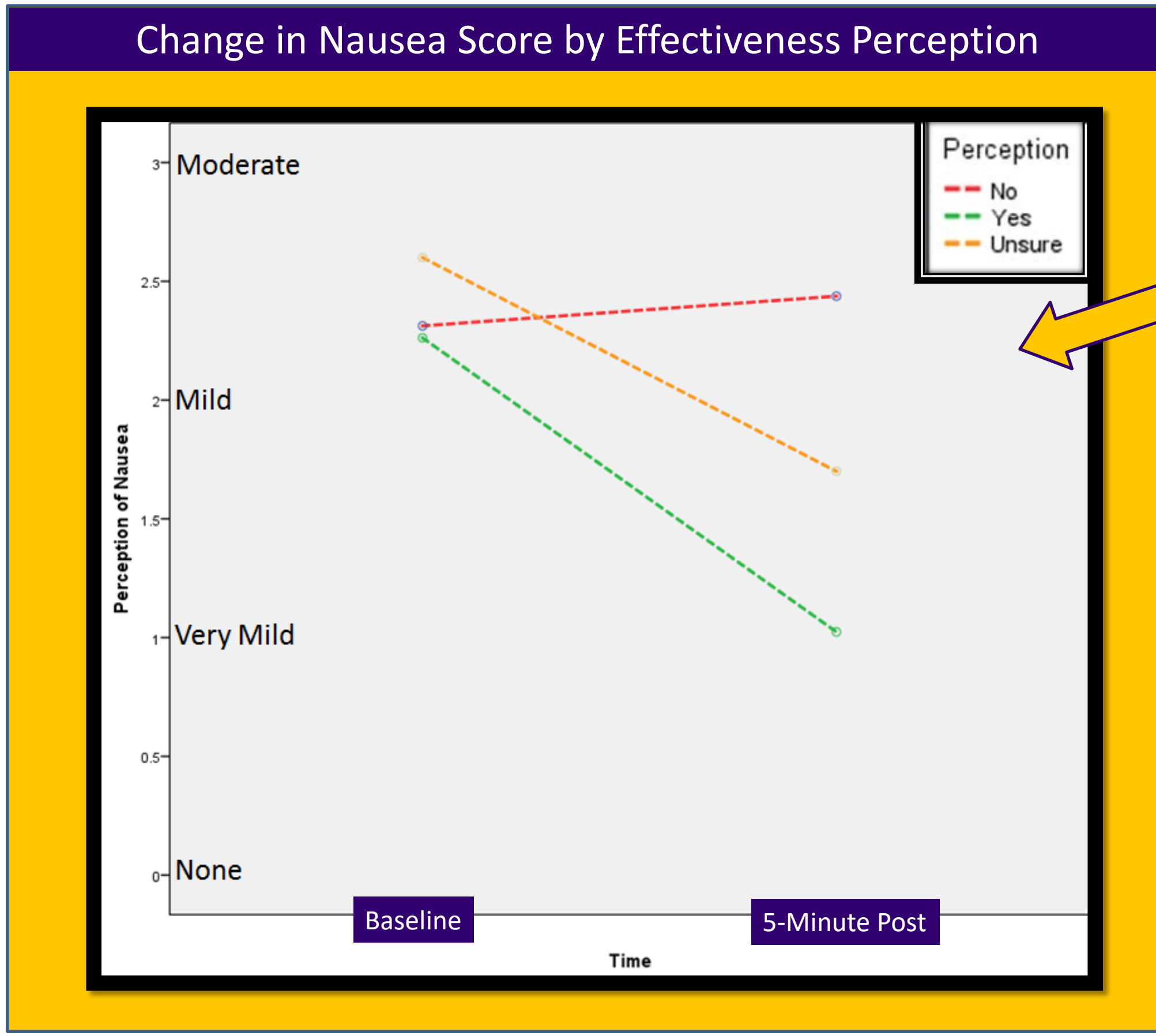


Products: Instant cold pack with pillowcase or refillable ice bag.
Cost: Instant cold pack 45 cents and refillable ice bag \$1.06

FAQ sheet posted in unit work areas for staff to reference.



PON data collection sheet lists inclusion and exclusion criteria.



Demographics

Gender: Male = 24 (34%)/Female = 46 (64%)

	Baseline	5-Minute	Pre-Post Change
Male	2.2 ± 0.7	1.5 ± 1.1	↓0.7 ± 1.0
Female	2.4 ± 0.6	1.4 ± 1.2	↓1.0 ± 1.2

No significant difference score by gender

	Not Effective	Effective	Unsure
Male	6 (25%)	14 (58%)	4 (17%)
Female	11 (24%)	29 (63%)	46 (13%)

No difference in perception of effectiveness by gender

Age 52 ± 18 (Male: 47 ± 20/Female: 54 ± 17)

	Not Effective	Effective	Unsure
Age	57 ± 18	50 ± 18	52 ± 18

No significant age effect – limited number of subjects > 65 or < 40

Nausea

- Baseline (n = 70) 2.3 ± 0.6 (range 1-3)
- 5-minute post (n = 68): 1.5 ± 1.1 (range 0-4)
- Pre-Post Change (within subject difference) ↓0.9 ± 1.1

Perception	Baseline	5-Minutes Post	Difference
Yes - Effective	2.3 ± 0.7	1.0 ± 0.9	↓1.2 ± 0.9
Not Effective	2.3 ± 0.6	2.4 ± 1.0	↑0.1 ± 1.1*
Unsure	2.6 ± 0.5	1.7 ± 1.2	↓0.9 ± 0.9

*Significantly different (p < .001) compared to patients who perceived improvement and those who were unsure of effectiveness (p < .05)

Perception Change (Pre-Post)	Post-Intervention Perception				
	None	Very Mild	Mild	Moderate	Severe
Baseline					
Very Mild (6)	3	3	0	0	0
Mild (34)	7	14	9	2	2
Moderate (28)	7	2	9	10	0

Interpretation

- Among the 6 patients who had *very mild* nausea at baseline – 3 stayed the same and 3 improved to no nausea at 5 minutes
- Among the 34 patients who had *mild* nausea at baseline – 2 stayed the same, 21 improved and 4 had worse nausea at 5 minutes
- Among the 28 patients who had *moderate* nausea at baseline – 10 stayed the same, 18 improved and 0 had worse nausea at 5 minutes

Improved	No Change	Worsened
42 (61%)	22 (32%)	4 (6%)

Secondary outcomes

- Some patients reported a decrease in nausea, yet stated they were unsure if the ice pack helped
- Increased nursing staff use of the ice pack to manage PON

Conclusions

- Overall, a majority of the patients experienced an improvement in their nausea.
- Since we did not use a control, we cannot know what the natural progression of nausea would be without an intervention and cannot state there is a causal relationship between the use of an ice pack and decreased nausea. However, we can say that there appears to be an association between use of an ice pack and decreased nausea.
- Use of an ice pack to treat nausea, instead of administering a pharmacological anti-emetic for patients with less severe PON may be an effective alternative.

Next Steps

- Publish findings in a peer reviewed journal
- Consider collecting data with a control to explore causality.
- Expand this study to determine if it improves chemotherapy induced nausea vomiting (CINV)

References:

- Becker, D.E. (2010). Nausea, vomiting, and hiccups: a review of mechanisms and treatment. *Anesthesia Progress*, 57(4), 150-157.
- Feinleib, J., Kwan, L.H., & Yamani, A. (2019). Postoperative nausea and vomiting. In M. Crowley (Ed.), *UpToDate*.
- Pym, A. & Ben-Menachem, E. (2018). The effect of a multifaceted postoperative nausea and vomiting reduction strategy on prophylaxis administration amongst higher-risk adult surgical patients. *Anesthesia Intensive Care*, 46(2), 185-189.

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