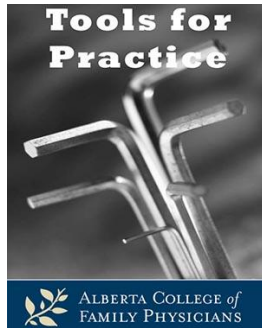


Tools for Practice is proudly sponsored by the Alberta College of Family Physicians (ACFP). ACFP is a provincial, professional voluntary organization, representing more than 4,800 family physicians, family medicine residents, and medical students in Alberta. Established over sixty years ago, the ACFP strives for excellence in family practice through advocacy, continuing medical education and primary care research. www.acfp.ca

June 4, 2018



Smell This: Isopropyl alcohol for nausea/vomiting in the emergency department

Clinical Question: Can inhaled isopropyl alcohol be used to treat nausea/vomiting in the emergency department?

Bottom Line: Two trials with ~200 non-pregnant adults presenting to emergency found inhaled (smelling) isopropyl alcohol improved mild-moderate nausea/vomiting. For example, after 30 minutes nausea improved from 50 out of 100 down to 20 with inhaled isopropyl alcohol versus 40 with oral ondansetron. Only one study reported adverse events and found none.

Evidence:

Two blinded, emergency department, Randomized Controlled Trials (RCTs).

- 122 non-pregnant adults with mild-moderate nausea/vomiting (majority infectious gastroenteritis), randomized (with matching placebos) to inhaled isopropyl alcohol, ondansetron, or both.¹
 - At 30 minutes, statistically significant reduction in nausea score: From a baseline of ~50 on a 100-point scale, nausea decreased to 40 with ondansetron versus 20 with inhaled isopropyl alcohol.
 - Other outcomes:
 - Patient satisfaction scores on 100-point scale (lower score=more satisfied): ~20 for inhaled isopropyl alcohol versus 44 for ondansetron.
 - Trend to fewer rescue antiemetics with inhaled isopropyl alcohol (~26% versus 45%). If real, Number Needed to Treat (NNT)=6.
 - No difference: ED length of stay, vomiting rates.
 - There were no adverse effects.
 - Limitations: Possible selection bias, single centre military hospital, up to 60% of patients on inhaled isopropyl alcohol able to identify their treatment group.
- 84 patients randomized to inhaled isopropyl alcohol or saline-soaked pads (placebo). Baseline nausea score=6/10. At 10 minutes:²
 - Lower median nausea score: 6 (placebo) versus 3, statistically different.
 - Improved patient satisfaction (out of 5, higher more satisfied): 2 (placebo) versus 4.
 - No difference in number receiving antiemetic or serious adverse effects.

Context:

- Patients inhaled deeply as frequently as required to achieve nausea relief from commercially available isopropyl alcohol pad held 1-2 cm below nares.¹
- Recent systematic review found no evidence to support any one pharmacologic treatment over another in ED for nausea.³
- Ondansetron costs ~\$4 per tablet.⁴
- Systematic review of four RCTs (215 patients)⁵ of inhaled isopropyl alcohol for post-operative nausea found fewer patients required rescue antiemetics versus standard therapy (26% versus 39% placebo), NNT=8. Other outcomes inconsistent and adverse effects not reported.

Authors:

Adrienne J Lindblad BSP ACPR PharmD, Kevin Harris MD CCFP(EM)

Disclosure:

Authors do not have any conflicts of interest to declare.

References:

1. April MD, Oliver JJ, Davis WT, *et al.* Ann Emerg Med. 2018 Feb 17. pii: S0196-0644(18)30029-5. [Epub ahead of print].
2. Beadle KL, Helbling AR, Love SL, *et al.* Ann Emerg Med. 2016 Jul; 68(1):1-9.e1. [Epub 2015 Dec 8].
3. Furyk JS, Meek RA, Egerton-Warburton D. Cochrane Database Syst Rev. 2015 Sep 28; (9):CD010106.
4. Nickonchuk T, Lee J, Kolber MR, *et al.* Available from: <https://www.acfp.ca/wp-content/uploads/2018/03/ACFPricingDoc2018.pdf>. Last Accessed: May 15, 2018.
5. Hines S, Steels E, Chang A, *et al.* Cochrane Database Syst Rev. 2018; (3):CD007598.

Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians who are joined occasionally by a health professional from another medical specialty or health discipline. Each article is peer-reviewed, ensuring it maintains a high standard of quality, accuracy, and academic integrity. If you are not a member of the ACFP and would like to receive the TFP emails, please sign up for the distribution list at <http://bit.ly/signupfortfps>. Archived articles are available on the ACFP website.

This communication reflects the opinion of the authors and does not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.