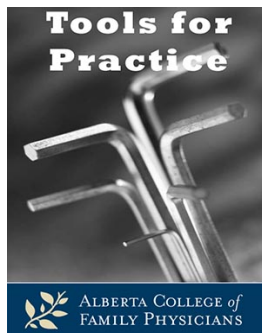


Tools for Practice is proudly sponsored by the Alberta College of Family Physicians (ACFP). ACFP is a provincial, professional voluntary organization, representing more than 4,000 family physicians, family medicine residents and medical students in Alberta. Established over fifty years ago, the ACFP strives for excellence in family practice through advocacy, continuing medical education and primary care research. www.acfp.ca

Reviewed: April 21, 2015
Evidence Updated: 3 RCTs added and context updated
Bottom Line: Unchanged
First Published: July 18, 2011



Can ondansetron help children vomiting due to gastroenteritis?

Clinical Question: In children presenting with vomiting associated with gastroenteritis, what are the benefits and harms of ondansetron?

Bottom-line: While most cases of pediatric gastroenteritis are self-limiting, studies from the emergency setting show a single dose of oral ondansetron can help reduce vomiting, the need for IV fluids and admission.

Evidence:

- Systematic review,¹ six Randomized Controlled Trials (RCTs), five in emergency department (ED) and one inpatient, 745 patients total, oral and IV administration.
 - Ondansetron statistically significantly improved:
 - Admission: Ondansetron (7.5% versus placebo 14.6%) Number Needed to Treat (NNT)=14.
 - Need for IV fluids: (13.9% versus 33.9%) NNT=5.
 - Continued vomiting in ED: (16.9% versus 37.8%) NNT=5.
 - No change in return to care.
 - Increased diarrhea (no numbers given).
- An updated Cochrane systematic review² considered six RCTs (five RCTs from above review) with 777 patients, all in the ED.
 - Only oral treatments were meta-analyzed and had similar results.
 - Statistically significant reduction in admission (NNT=17), need for IV rehydration (NNT=5), persistent vomiting (NNT=5) but no reduction in return to care.
- RCT from Iran (176 patients) found no difference in persistent vomiting between ondansetron and placebo, however more on ondansetron were able to tolerate oral rehydration (NNT=7).³
- Two RCTs from Thailand and Qatar (76 and 186 patients, respectively) found no statistical difference in vomiting rates between ondansetron and domperidone or metoclopramide.^{4,5}

Context:

- Evidence for other medications for vomiting due to gastroenteritis in pediatrics is poor and/or limited.^{1,6}
 - More recent RCT found dimenhydrinate suppositories helped stop vomiting (NNT=5) but did not reduce admission rates.⁷
- Ondansetron appears cost-effective in ED setting.^{8,9}
- An evidence-based review of ondansetron for gastroenteritis by the Canadian Pediatric Society¹⁰ recommended:
 - A single oral dose ondansetron for children (age six months to 12 years):
 - With mild to moderate dehydration or failed oral rehydration, and
 - Not predominantly moderate to severe diarrhea.
- Ondansetron can be administered IV or orally (dissolving formulations available)
 - Oral doses example: 2 mg if patient weighs 8-15 kg, 4 mg if 15-30 kg, and 6-8 mg if >30 kg.

Original Authors:

G. Michael Allan MD CCFP, Erin Wilson NP(F) MSN

Updated:

Adrienne J Lindblad BSP ACPR PharmD

Reviewed:

G. Michael Allan MD CCFP

References:

1. DeCamp LR, Byerley JS, Doshi N, *et al.* Arch Pediatr Adolesc Med. 2008; 162(9):858-65.
2. Fedorowicz Z, Jagannath VA, Carter B. Cochrane Database Syst Rev. 2011; 9:CD005506. .
3. Golshekan K, Badeli H, Rezaieian S, *et al.* Iran J Pediatr. 2013; 23(5):557-63.
4. Rerksuppaphol S, Rerksuppaphol L. J Clin Med Res. 2013; 5(6):460-6.
5. Al-Ansari K, Alomary S, Abdulateef H, *et al.* J Pediatr Gastroenterol Nutr. 2011; 53(2):156-60.
6. Carter B, Fedorowicz Z. BMJ Open. 2012; 2(4). pii: e000622
7. Uhlig U, Pfeil N, Gelbrich G, *et al.* Pediatrics. 2009; 124:e622–e632.
8. Freedman SB, Steiner MJ, Chan KJ. PLoS Med. 2010; 7(10):e1000350.
9. Hervás D, Armero C, Carrión T, *et al.* Pediatr Emerg Care. 2012; 28(11):1166-8.
10. Cheng A. Paediatr Child Health. 2011; 16(3):177-9.

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 practicing 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.

The ACFP has supported the publishing and distribution of the Tools for Practice library since 2009. 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/signupfortfp>. Archived articles are available at no extra cost on the [ACFP website](#).

You can now earn credits on Tools for Practice! In August 2014, the ACFP launched [GoMainpro, an online accreditation tool](#) to help facilitate MAINPRO® accreditation for the ACFP's Tools for Practice library which has been accredited for Mainpro-M1 credits by the College of Family Physicians of Canada (CFPC). The combination of the CFPC's Direct Entry Program and GoMainpro's tracking and reporting features provide an easy and convenient way to earn Mainpro-M1 credits.

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

