

antiemetics to treat gastroenteritis-induced vomiting in children ([Fedorowicz, Jagannath, and Carter, 2011](#)). Ondansetron was found more effective than placebo in studies evaluating hospital admission rates, need for intravenous (IV) rehydration therapy, and resolution of vomiting. When comparing placebo, dimenhydrinate was found more effective in one study, and metoclopramide was more effective in another single study.

- A systematic review from 1980 to 2012 revealed 10 studies (1479 participants) evaluating the evidence of safety and effectiveness of antiemetics (dexamethasone, dimenhydrinate, granisetron, metoclopramide, and ondansetron) for gastroenteritis-induced vomiting in children and adolescents ([Carter and Fedorowicz, 2012](#)). There is clear evidence from nine studies that ondansetron is more effective than placebo in resolving vomiting, reducing the need for IV rehydration therapy, and reducing the hospital admission rate. A single study showed a reduction in mean vomiting days among children receiving dimenhydrinate versus placebo and among granisetron versus placebo. Studies of metoclopramide were underpowered, and a single study of dexamethasone versus placebo showed no statistically significant difference in vomiting.
- A study of 144 children diagnosed with acute gastroenteritis were randomized to receive dimenhydrinate or placebo in a pediatric emergency department ([Gouin, Vo, Roy, et al, 2012](#)). No statistically significant difference regarding the frequency of vomiting was noted between the two groups.
- A study of 76 children diagnosed with acute gastroenteritis were randomized to receive an orally disintegrating ondansetron tablet or domperidone suspension (dosing based on body weight) then evaluated for vomiting for the next 24 hours ([Rerksuppaphol and Rerksuppaphol, 2013](#)). Sixty-two percent of patients in the ondansetron group and 44% of patients in the domperidone group had no vomiting after treatment, although no statistically significant difference was noted ($p = 0.16$).

Apply the Evidence: Nursing Implications