

Anti-vomiting drug could prevent thousands of hospitalizations, save millions of dollars

October 14 2010

Two years ago, a study by University of North Carolina at Chapel Hill researchers found that an anti-vomiting drug called ondansetron helps reduce vomiting, the need for intravenous fluids and hospital admissions in children with acute gastroenteritis.

Now a new economic analysis led by Canadian researchers, in collaboration with Michael J. Steiner, MD, assistant professor of pediatrics at UNC, concludes that routinely giving ondansetron to [children](#) with gastroenteritis-induced vomiting would prevent thousands of hospitalizations and save millions of dollars each year.

"In the past, people always thought that ondansetron was so expensive that its use 'wasn't worth it.' Our findings challenge that belief and may change clinician decision-making as well as practice guidelines," Steiner said.

The new study was published online this week by the journal [PLoS Medicine](#). The lead author is Stephen B. Freedman, MDCM, a pediatric emergency physician at The Hospital for Sick Children (SickKids) and assistant professor of pediatrics at the University of Toronto. Co-authors are Steiner and Kevin J. Chan, MD, also a pediatric emergency physician at SickKids.

"This study is the first to demonstrate that in addition to being clinically beneficial, the administration of oral ondansetron to children with dehydration and persistent vomiting secondary to gastroenteritis, is

economically advantageous, making it a dominant treatment strategy," Freedman said.

Gastroenteritis is an infection, often caused by a virus, that causes vomiting and diarrhea. It is popularly called "stomach flu" and is a very common ailment in children during the winter months. Persistent vomiting from acute gastroenteritis can be very frightening to children and their families and also poses a risk of dehydration.

In many cases gastroenteritis in children can be managed effectively with oral fluids, including oral rehydration therapy, but some cases are severe enough to require hospital admission for intravenous fluids. However, current practice guidelines do not recommend the use of ondansetron, in part because there was a lack of clear evidence that the treatment is cost effective.

To answer this question, study authors used a type of statistical analysis, called decision tree analysis, to compare the costs of treatment in the hospital emergency department setting both with and without ondansetron. Due to significant price differences between the U.S. and Canada, they conducted a separate analysis for each country.

They concluded that giving ondansetron to eligible children in the U.S. would prevent 29,246 intravenous insertions and 7,220 hospitalizations each year, with annual savings of \$65.6 million to society and \$61.1 million to payers of health care costs (including private insurance providers and Medicare and Medicaid). In Canada, the study concluded, ondansetron given routinely would prevent 4,065 intravenous insertions and 1,003 hospitalizations each year, with annual savings of \$1.72 million (in Canadian dollars) to society and \$1.18 million to payers of health care costs.

Provided by University of North Carolina School of Medicine

Citation: Anti-vomiting drug could prevent thousands of hospitalizations, save millions of dollars (2010, October 14) retrieved 3 May 2024 from <https://medicalxpress.com/news/2010-10-anti-vomiting-drug-thousands-hospitalizations-millions.html>

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