

Ondansetron wafers for the Treatment of Nausea by Paramedics in Triage

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Introduction: Paramedics in triage encounter many patients presenting with nausea or vomiting. Currently, there is no protocol in place to provide treatment for these patients and they are often waiting hours before their first dose of antiemetic therapy. Ondansetron is a 5-hydroxytryptamine receptor antagonist that has been thoroughly studied in the pediatric population for reducing undifferentiated nausea. This critically appraised topic explores the available evidence concerning the safety and efficacy of paramedic administered oral Ondansetron in an adult population.

PICO:

In adult patients presenting to triage with nausea and/or vomiting can oral Ondansetron be administered by paramedics safely to reduce the severity of the nausea?

Search Strategy: The Cochrane Library of systematic reviews, Embase and PubMed were searched for related articles.

Embase:

(Prehospital OR paramedic OR EMT OR EMS) AND (zofran OR ondansetron)

PubMed:

(zofran OR ondansetron) AND (emerg* OR paramed* OR prehospital OR out-of-hospital) NOT (children OR ped*)

Inclusion Criteria: Studies must include information on oral Ondansetron, include adult data (over 16), and be specific to emergency presentation preferably prehospital or paramedic administration.

This search produced 62 PubMed results and 89 Embase results; two primary research studies and one relevant systematic review in which included patients over 16 years of age. No Cochrane reviews were found to fit inclusion criteria.

The evidence has been graded according to the 3 point Level of Evidence Scale used by the Canadian Prehospital Evidence-Based Practice Project.

Author/ date	Population sample characteristics	Design (LOE)	Outcomes	Results	Weaknesses
Fedorowicz. Z., et. Al (2011)	Pooled data of 1020 participants under the age of 18 presenting with at the ER with N/V	Systematic Review LOE=1	safety and effectiveness of antiemetics on gastroenteritis induced vomiting	Oral Ondansetron treatment resulted in a reduction of immediate hospital admission (RR=.40), Reduction of IV rehydration (RR=.41), increase in the cessation of vomiting (RR=1.34)	-this population included some patients above of the age of 16 but was primarily focused on children and adolescents.
Fullerton et.al. (2012)	646 adult patients c/o N/V	Pre/post study comparing saline to oral Ondansetron LOE=2	Evaluate effect on nausea level	74% of pts receiving Ondansetron reported improvement. Median reduction on 100 point VAS scale was -24 compared to 22.5 % reporting improvement in the saline group. No adverse effects reported.	-No randomization -No time frame for time to onset of relief
Salvucci A., et. al. (2011)	2072 adult pts presenting with N/V to EMS Of these, 674 received oral treatment	Prospective, observational, nonrandomized trial. LOE =3	Utilization, safety, efficacy of OOH administration of Ondansetron	3.3 mean reduction in nausea on a 10 point Likert scale for oral treatment (CI 3.1-3.5)	-No control group -2 pts receiving oral treatment had minor adverse event, though not proven to be as a result of the treatment -No time frame for time to onset of relief.

Clinical Bottom Line: There is limited evidence to support administration of Ondansetron by paramedics to adult patients. There available evidence suggests the drug is safe, effective and can be appropriately used by paramedics.

Cost of Treatment: Since FDA approval of a generic version, Ondansetron is nearly \$1.00 per dose (Red Book, 2009). This cost may vary depending on supplier and country.

Implementation Strategy: There exist several options to facilitate the implementation of the new intervention. One suggestion is to create an information package, and include a small information session headed by a champion of the subject matter.

Impact Measurement: If the department decides to follow up on the effect of this implementation. One of the simplest methods could include recording the HCN/date of presentation of each of the patients given the medication by the triage staff of over a discreet time frame. After the time period, have a retrospective review any nausea improvement recorded in the re-triage notes. Ten point Likert scales could be useful measurement tools in this case.

Conclusion: Given the available evidence, it is requested by the Triage Development Committee that a protocol including Ondansetron wafers be considered for approval as a standing triage treatment for nausea and vomiting.

References:

Fedorowicz Z., Jagannath V., Carter B., (2011) Antiemetics for reducing vomiting related to acute gastroenteritis in children and adolescents. Cochrane Library Online.

Fullerton L., Weiss S., Froman P., Ogiesee S., Cheney P., (2012). Ondansetron Oral Dissolving Tablets are Superior to Normal Saline Alone for Prehospital Nausea. PEC; online: 1-6.

Jensen JL, Petrie DA, Travers AH, PEP Project Team. The Canadian prehospital evidence-based protocols project: knowledge translation in emergency medical services care. Acad Emerg Med 2009 July;16(7):668-73.

Red Book: Pharmacy's Fundamental Reference. Montavale, NJ: Thompson Healthcare Inc., 2009.

Salvucci A. A., Squire B., Burdick M., Luoto M., Brazzel D., Vaezazizi R., (2011). Ondansetron is Safe and Effective for Prehospital Treatment of Nausea and Vomiting by Paramedics, PEC; 15: 34-38.