

# Paramedic - Evidence Based Medicine (P-EBP) Program

## Paramedic CAT (Critically Appraised Topic) Worksheet

**Title:** *Gravols Efficacy on Actively Vomiting Patients*

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**Clinical Scenario:** *Through discussions in our ACP cohort, our instructor was doing a presentation called "myth busting" where he alluded to BCEHS's current practice of Gravol (Dimenhydrinate) potentially being ineffective, as the receptors the Gravol works on, are not effective once a patient is already vomiting.*

**PICO (Population – Intervention – Comparison – Outcome) Question:**

*In prehospital patients with active vomiting, does the use of Gravol in comparison to a placebo improve symptoms?*

**Search Strategy:**

*(Gravol OR dimenhydrinate OR Dramamine) AND (vomiting)*

*(Gravol or dimenhydrinate) and (vomit\* or emesis or nausea) and (Emergency Medical Services OR Emergency Medical Technicians OR paramedic\* OR emergency medical technician\* OR prehospital OR pre-hospital OR "out of hospital" OR responder\* OR ambulance)*

**Search Outcome:**

*122 articles were found with the first search option.*

*3 articles found with a 10 year restriction on second search option.*



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## Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/ WEAKNESSES
Habib A., 2004	2061 patients classified as having American Society of Anesthesiologists physical status I or II, between ages of 18 and 65 years, scheduled for general anesthesia outpatient procedures planned to last no more than 2 hours were included in the study.	Retrospective study with a control group. <b>Level II</b>	Complete response (no nausea, no emesis, and no need for further rescue for the 2 hour duration of the study) after the rescue antiemetics was calculated.	Gravol for rescue in comparison to ondansetron prophylaxis P=0.08 (no difference) Gravol in comparison to Droperidol prophylaxis P=0.04 (difference)	<b>Strengths:</b> -comparing several different antiemetics -Broad data -Reasonable number of patients included <b>Weaknesses:</b> -Being retrospective - Non-randomized and not blinded -Patients have already received prophylaxis dose.
Ercin D., 2020	200 patients aged 18-65 who were admitted to the emergency department with nausea associated with either vertigo or motion sickness and monitored at 0, 5, 15 and 30th mins for a VAS score.	-Prospective, randomized, single-center, double-blind study  <b>Level II</b>	Dimenhydrinate and Metoclopramide are equally effective at reducing vertigo and frequently associated concomitant symptoms such as nausea. At the end of the 30th minute, at least 75% of patients' vertigo and nausea VAS scores had fallen below 5 mm and they	The initial vertigo VAS score of the Dimenhydrinate group was $7.57 \pm 1.42$ ; it dropped to $2.46 \pm 2.39$ at the 30th minute ( $p < 0.001$ ). The initial vertigo VAS score of the Metoclopramide group was $7.27 \pm 1.40$ ; it dropped to $2.31 \pm 1.96$ at the 30th minute ( $p <$	<b>Strengths:</b> Prospective, randomized, single-center, double-blind study -200 Patient sample  <b>Weaknesses:</b> Does not monitor effects on patients who are vomiting. Patients were not monitored beyond 30



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			were discharged from the ED without the requirement of rescue medication.	0.001) Not significantly different results.	minutes and often left.
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**Comments:** -We noticed a lack of studies focusing on our specific circumstance where a patient was already vomiting and given treatment. However, we did find a study on the periphery involving post-operative patients refractory to prophylactic antiemetics with a wide variety of treatments. Prehospital studies were even rarer requiring a shift to widening the population criteria (ie. in hospital).

**Consider:** We were unable to find any studies directly related to the patient population for our PICO (those actively vomiting) however both studies indicated Gravols benefits for those experiencing nausea, even when first line agents or prophylactic agents had not been effective. Use of Gravol should be continued for patients believed to benefit.

**Clinical Bottom Line:** None Given

**References:**

Ercin, D., Erdur, B., Türkçüer, İ., Seyit, M., Özen, M., & Yılmaz, A. (2021). Comparison of efficacy dimenhydrinate and metoclopramide in the treatment of nausea due to vertigo; a randomized study. *American Journal of Emergency Medicine*, 40, 77–82. <https://doi.org/10.1016/j.ajem.2020.12.010>

Habib, A. S., & Gan, T. J. (2005). The effectiveness of rescue antiemetics after failure of prophylaxis with ondansetron or droperidol: a preliminary report. *Journal of Clinical Anesthesia*, 17(1), 62– 65.[doi:10.1016/j.jclinane.2004.04](https://doi.org/10.1016/j.jclinane.2004.04).

