

Comparison of Clinical Outcomes between ICU Patients Receiving Proton Pump Inhibitors versus H2 Receptor Antagonists for Stress Ulcer Prophylaxis



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BACKGROUND

- Acute upper gastrointestinal (GI) bleeding can be associated with an increased hospital length of stay, vasopressor use, and increased requirements of packed red blood cells and fresh frozen plasma.^[1]



- Patients requiring treatment in the Intensive Care Unit (ICU) are at an increased risk of developing a stress-related gastrointestinal ulcer.^[2]
- Common medications used for stress ulcer prophylaxis (SUP) include proton pump inhibitors (PPI) and H2 receptor antagonists (H2RA).^[2]
- Pantoprazole is a PPI which works in the parietal cells of the mucosa to irreversibly inhibit the hydrogen-potassium-adenosine triphosphatase enzyme to inhibit acid production.^[3]
- Famotidine is a H2RA which works in the parietal cells to competitively inhibit histamine stimulated acid secretion.^[4]
- Although studies have shown greater efficacy with PPIs versus H2RA for preventing stress ulcers, the magnitude of this clinical relevance still requires further assessment on incidence of gastrointestinal bleeds as well as incidence of other clinical outcomes.^[2,5]

METHODS

- Single center, retrospective chart review of patients admitted to Boca Raton Regional Hospital intensive care units between July 1, 2020 to December 31, 2020.

Inclusion Criteria

- Age ≥ 18 years
- Admission to the intensive care unit receiving either pantoprazole or famotidine for stress ulcer prophylaxis
- Have 1 independent risk factor or ≥ 2 other risk factors for stress ulcer prophylaxis

Exclusion Criteria

- Admission diagnosis of a gastrointestinal bleed
- History of a gastrointestinal bleed
- Pregnancy
- On a home proton pump inhibitor or H2 receptor antagonist
- Comfort care measures/ withdrawal of care

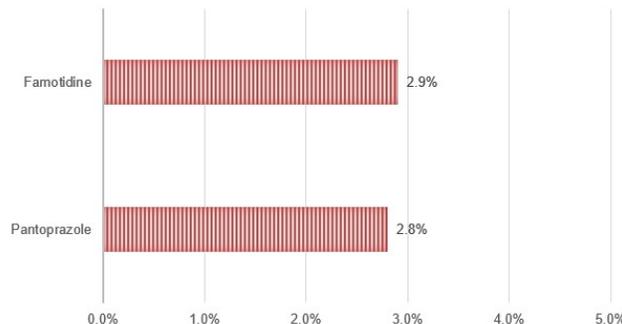
OBJECTIVES

- The primary objective of this study is to compare the incidence of gastrointestinal bleeds as well as other clinical outcomes of intensive care patients receiving pantoprazole, a proton pump inhibitor, versus famotidine, a H2 receptor antagonist.

RESULTS

Variable	Pantoprazole (n=72)	Famotidine (n=35)	Value
Clinically important GI bleed — no. (%)	2 (2.8%)	1 (2.9%)	P=0.56

PERCENTAGE OF CLINICALLY IMPORTANT GI BLEEDS



Variable	Pantoprazole (n=72)	Famotidine (n=35)
Intensive care length of stay — days		
Mean	5.5	10.4
Range	1-50	1-36
Incidence of C.diff — no. (%)	1 (1.4%)	3 (8.6%)
Incidence of thrombocytopenia — no. (%)	5 (7%)	3 (8.6%)
Incidence of hypomagnesemia — no. (%)	17 (23.6%)	5 (14.2%)
Incidence of HAP/VAP — no. (%)	10 (13.8%)	9 (25.7%)
Appropriate discontinuation of SUP upon transfer— no. (%)	22 (30.5%)	18 (51.4%)

LIMITATIONS

- Retrospective analysis
- Limited sample size
- Incomplete provider documentation
- Unbalanced baseline severity of illness
- Often unreported FIO₂

CONCLUSION

- There was no statistically significant difference in clinically important gastrointestinal bleeds in intensive care patients receiving pantoprazole versus famotidine for stress ulcer prophylaxis
- The results of this study indicate there is no difference in the incidence of gastrointestinal bleeds using pantoprazole versus famotidine, for stress ulcer prophylaxis, at Boca Raton Regional Hospital.

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DISCLOSURES

- All authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interests in the subject matter of this research:
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