

PULSE: Stress Ulcer Prophylaxis in Critically Ill Patients.

Title: Don't Stress: Comparing Pharmacologic Agents for Stress Ulcer Prophylaxis in Critically Ill Patients

Objectives:

1. Define the risk factors and morbidity associated with stress ulcer related bleeding.
2. Discuss current literature that assesses the efficacy and safety of common pharmacologic agents used for stress ulcer prophylaxis.
3. Identify patients with indications for stress ulcer prophylaxis and design an appropriate treatment plan.

Abstract:

Stress ulcers are a type of bleed that can pose significant risks to critically ill patients. These types of bleeds are most commonly upper gastrointestinal bleeds (UGIB). Many risk factors exist that can increase the instance of a stress ulcer occurring however SCCM/ASHP 2024 guideline updates recognize coagulopathy, liver disease, and shock as risk factors that necessitate use of stress ulcer prophylaxis (SUP). The agent of choice for SUP has wavered between proton pump inhibitors (PPIs), like pantoprazole, and histamine-2 receptor antagonists (H2RAs), like famotidine, over decades. Current guidelines do not provide a strong recommendation for one agent over the other as previously PPIs were associated with increased rates of pneumonia (PNA) and *clostridium difficile* infection (CDI). New literature exists that revisits these claims and can help guide pharmacologic choice.

Sources:

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Knowledge Check Questions:

1. What transport protein is inhibited by pantoprazole?
 - a. Na⁺/K⁺ ATPase
 - b. H⁺/K⁺ ATPase
 - c. Ca²⁺ ATPase
 - d. Aquaporins
2. Based on previously reviewed literature, which outcome was significantly reduced in patients receiving SUP?
 - a. 90-day mortality
 - b. Rates of PNA
 - c. Rates of CDI
 - d. Clinically important GI bleeding
3. Which patient is indicated for SUP and is receiving the appropriate regimen?
 - a. A 23-year-old with severe burns that covers 37% of their BSA receiving esomeprazole 40 mg PO twice daily.
 - b. A 37-year-old who has been intubated for 63 hours and is on hydrocortisone 50 mg Q6H receiving pantoprazole 40 mg via OG tube daily.
 - c. A 58-year-old with an INR of 2.1 with a history of NASH cirrhosis receiving pantoprazole 40 mg IVP daily.
 - d. A 71-year-old on CRRT with AF not on AC receiving famotidine 20 mg IVP twice daily.