

VUMC Trauma Critical Care Stress Ulcer Prophylaxis Protocol

Background

Critically ill patients are at risk of GI hemorrhage primarily from gastric or duodenal ulcers. Cook and colleagues describe the risk of overt bleeding to be 4.4% and clinically significant bleeding to be 1.5%. The incidence of clinically significant bleeding appears to be dependent on severity of illness (ISS > 15 for trauma) and the type of patient population studied.

The most definitive indications for stress ulcer prophylaxis include 1) Severe head trauma, 2) Major burn injury, 3) Mechanical ventilation (>48 hrs), 4) Coagulopathy (INR >1.5 or platelet count < 50,000). Other risk factors for GI bleeding in the ICU setting include alcoholism, acute hepatic failure, sepsis, acute renal failure, trauma, prolonged NSAIDs, and high dose steroids.

Literature indicates that H₂ receptor antagonists (H2RA) and proton pump inhibitors (PPI) are equally effective in reducing stress-related gastrointestinal bleeding. Meta-analyses describing superiority of PPIs are controversial. Per the EAST Practice Management Guidelines either H2RAs or PPIs may be used for stress ulcer prophylaxis in critical ill trauma patients. Sucralfate may also be an option, but is fraught with drug interactions by preventing absorption of other enteral medications.

Numerous analyses describe the role of enteral nutrition (EN) in the prevention of stress-related gastrointestinal bleeding. EN prevents mucosal ischemia and ulceration by increasing splanchnic blood flow and increasing gastric pH (to a lesser degree). Pre and post-pyloric EN should provide some degree of protection against stress-related mucosal ulceration. However, data describing EN as the sole stress ulcer prophylaxis in hypersecretory states, including major head injury and burn patients, is lacking.

Indications for Prophylaxis

High Risk Patient:

- All patients to receive prophylaxis

Moderate Risk Patient:

- Consider prophylaxis (most will have a high risk factor, as well)

Low Risk Patient or Tolerating PO Diet:

- NO prophylaxis or discontinue prophylaxis

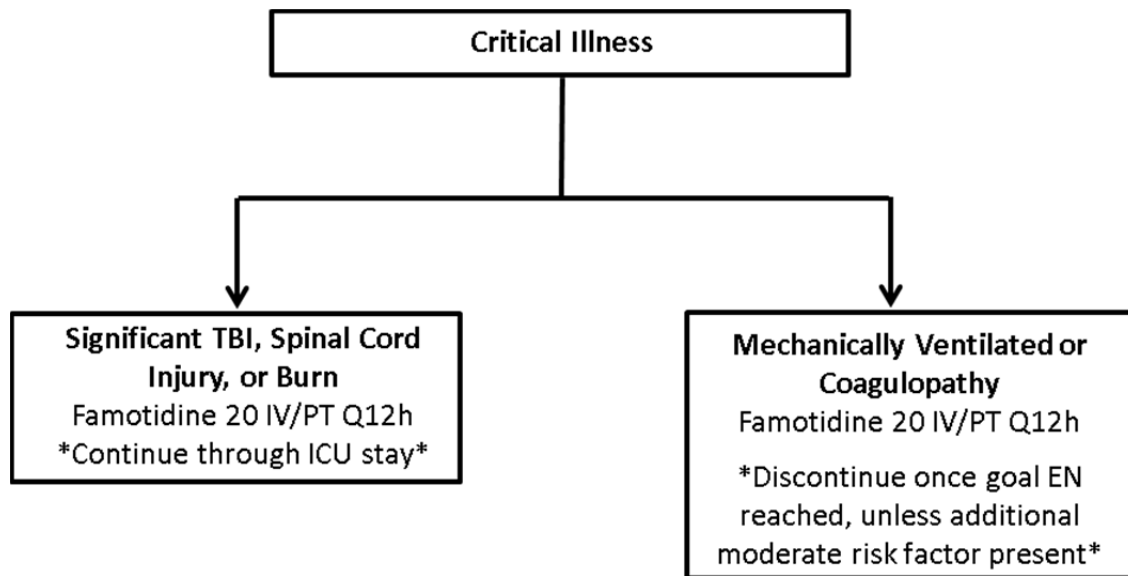
HIGH RISK:

- Mechanical ventilation >48 hours
- Coagulopathy
- Severe head trauma
- Significant burn injury
- History of previous gastrointestinal hemorrhage

MODERATE RISK:

- Chronic NSAID or aspirin use
- Sepsis with or without organ dysfunction
- Vasopressor/inotropic therapy
- High dose prolonged steroid therapy
- New gastroduodenal or gastrojejunal anastomosis
- Spinal cord injury (4 weeks of stress ulcer prophylaxis recommended)

Trauma High Risk Prophylaxis Algorithm



Preferred first line agent for stress ulcer prophylaxis:

- Famotidine 20 mg IV/PT Q12h (renally adjust to q24h for CrCL < 50 mL/min)

If confirmed/suspected upper gastrointestinal bleeding or if taking a PPI at home:

- Omeprazole 20 mg PO/PT Q24h if enteral access
- Nexium 40 IV Q24h if no enteral access

References:

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