Stress Ulcer Prophylaxis in Hospitalized Patients

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KEYWORDS

• Stress-related mucosal disease • Stress ulcer • Gastrointestinal bleeding
• Prophylaxis • Histamine-2 receptor antagonist • Proton pump inhibitor

HOSPITAL MEDICINE CLINICS CHECKLIST

1. Start stress ulcer prophylaxis in critically ill patients who meet the following indications:
   a. Mechanical ventilation for >48 hours
   b. Coagulopathy (International Normalization Ratio [INR] >1.5, partial thromboplastin time [PTT] >2 times control value, platelet count <50,000)
   c. History of gastrointestinal ulcer or bleeding in year before admission
   d. At least 2 of the following: sepsis, intensive care unit stay longer than 1 week, occult bleeding for 6 days or longer, or corticosteroid therapy (>250 mg hydrocortisone or equivalent daily)
   e. See **Box 1** for remainder of indications
2. Use histamine-2 receptor antagonists or proton pump inhibitors for prophylaxis.
3. Discontinue stress ulcer prophylaxis when patients' risk factors resolve and before transfer out of the intensive care unit or discharge.
4. Monitor for complications of acid-suppressive therapy, including nosocomial pneumonia and *Clostridium difficile* colitis.
5. Recognize the overuse of stress ulcer prophylaxis in hospitalized patients and advocate for evidence-based prescribing practices.

DEFINITIONS

1. What is stress-related mucosal disease?

Stress-related mucosal disease (SRMD) refers to the acute superficial inflammatory lesions of the gastric mucosa that can arise during serious illness.[1] These lesions

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Box 1
Indications for stress ulcer prophylaxis in intensive care unit (ICU) patients

- Mechanical ventilation for more than 48 hours
- Coagulopathy
  - INR more than 1.5
  - PTT more than 2 times control value
  - Platelet count less than 50,000
- History of gastric ulceration or bleeding during the year before admission
- Presence of at least 2 of the following:
  - Sepsis
  - ICU stay longer than 1 week
  - Occult bleeding for 6 days or longer
  - Corticosteroid therapy (>250 mg of hydrocortisone or equivalent daily)
- Hepatic failure
- Hepatic or renal transplantation
- Partial hepatectomy
- Head injury with Glasgow Coma Score of less than or equal to 10 or inability to obey simple commands
- Thermal injury involving more than 35% of body surface area
- Multiple trauma with Injury Severity Score greater than or equal to 16
- Spinal cord injury

typically begin as subepithelial petechiae but can progress to superficial erosions and even ulcerations.[2] SRMD therefore encompasses such terms as hemorrhagic gastritis, erosive gastritis, stress gastritis, stress erosions, and stress ulcers or ulcerations.

EPIDEMIOLOGY

1. What is the incidence of SRMD?

As many as 74% to 100% of patients have endoscopically detectable mucosal damage within 24 hours of admission to the ICU.[2] Similar endoscopic studies have not been performed in non–critically ill patients.

2. What is the clinical significance of SRMD?

SRMD is generally asymptomatic. Symptomatic lesions can present anywhere on the spectrum from occult to overt to clinically significant gastrointestinal (GI) bleeding. Overt bleeding is defined as any visible blood loss, such as a bloody nasogastric tube aspirate, hematemesis, melena, or hematochezia.[3] Clinically significant bleeding is defined as any overt bleeding causing hemodynamic instability or requiring blood transfusion. Up to 25% of ICU patients develop overt gastric bleeding and 0.6% to 5% develop clinically significant bleeding if not on stress ulcer prophylaxis (SUP).[2] Overall, the incidence of stress-related mucosal bleeding seems to have declined