STRESS ULCERS & PROPHYLAXIS

FLAME LECTURE: 82
KUMAR & MILHOLLIN 3.9.20

LEARNING OBJECTIVES

- To understand how to diagnose stress ulcers
- To describe who is at risk and for whom stress ulcer prophylaxis is indicated
- To list which agents are best for stress ulcer prophylaxis

DEFINITION

- Stress ulceration: ulceration of the upper gastrointestinal (GI) tract (esophagus, stomach, duodenum) that occurs due to hospitalization
- More common in critically ill patients and is associated with increased mortality
- Bleeding can be occult (15-50%), overt (2-9%), or clinically significant (1-3%)
- Primary prevention of GI bleeding from stress ulcers is known as stress ulcer prophylaxis (SUP)

DIAGNOSIS

- Stress ulcers should be suspected in critically ill patients with hematemesis, melena, anemia, and/or hypotension/shock
- In cases with occult bleeding, the diagnosis is an assumptive one and most experts do not perform diagnostic endoscopy
- For those with overt and/or clinically significant bleeding, endoscopy is typically indicated
  - Particularly when the results are likely to affect decision-making and/or a potentially treatable lesion is suspected
  - EGD may reveal superficial erosions in the gastric mucosa

RISK FACTORS

- Mechanical ventilation >48 hours
- Bleeding diathesis (Platelets <50,000 per m^3, elevated INR >1.5, or a PTT >2 times normal)
- GI ulceration or bleeding within the past year
- Traumatic brain/spinal cord injury
- Severe burns >35% of BSA
- ≥ 2 minor risk factors (sepsis, ICU stay >1 week, occult GI bleeding ≥6 days, glucocorticoid therapy), or on NSAIDs/antiplatelet agents

RISK FACTORS (BY LEVEL OF REC)

- **Level 1 recommendations**
- SUP is recommended for ALL patients with:
  - Mechanical ventilation
  - Coagulopathy
  - Traumatic brain injury
  - Major burn injury
- **Level 2 recommendations**
- SUP is recommended for all ICU patients with:
  - Multi-trauma
  - Sepsis
  - Acute renal failure
- **Level 3 recommendations**
- SUP is recommended for all ICU patients with:
  - ISS >15
  - Requirement of high-dose steroids (>250 mg hydrocortisone or equivalent per day)

LOW RISK PATIENTS

- SUP can be considered on a case-by-base basis for critically ill patients who are at low risk of GI bleeding:
  - Mechanical ventilation <48 hours
  - Few morbidities
  - No bleeding diathesis, or history of GI bleeding
- Other factors that may influence this decision include:
  - Receiving enteral nutrition
  - Severity of the patient's illness
  - Number of comorbidities
  - Other risk factors that may increase the risk of bleeding

SUP OPTIONS

- **Level 1 recommendations**
  - No difference between H2 antagonists, cytoprotective agents (sucralfate), and some PPIs
  - Antacids should not be used as SUP
- **Level 2 recommendations**
  - Aluminum containing compounds should not be used in patients on dialysis
- **Level 3 recommendations**
  - Enteral feeding alone may be insufficient stress ulcer prophylaxis

DURATION OF SUP

- **Level 1 recommendations**
  - No level 1 recs
- **Level 2 recommendations**
  - Continue during mechanical ventilation and/or intensive care unit (ICU) stay
- **Level 3 recommendations**
  - Continue until able to tolerate enteral nutrition

ADVERSE EFFECTS

- Choose your patient wisely!
  - Don't prescribe SUP to medical inpatients unless at high risk for GI complications
- Histamine H2-receptor antagonists and PPIs are associated with adverse drug events, increased medication costs, and enhanced susceptibility to community-acquired nosocomial pneumonia and Clostridium *difficile*

OTHER ADVERSE EFFECTS

- Fractures of the hip, wrist, and spine
- Iron-deficiency anemia in pts with low baseline iron stores
- Gastric acid rebound or reflux
- Major adverse cardiac events such as reinfarction in pts taking PPIs & Plavix

REFERENCES

- AAFP. (2012). *Reducing Adverse Effects of Proton Pump Inhibitors* (1st ed., Vol. 86). Leawood, KS. Retrieved from https://www.aafp.org/afp/2012/0701/p66.html
- Eastern Association for the Surgery of Trauma. (2008). *Stress Ulcer Prophylaxis*. Chicago, IL. Retrieved from https://www.east.org/education/practice-management-guidelines/stress-ulcer-prophylaxis
- Society of Hospital Medicine. (2019). *Don't prescribe medications for stress ulcer prophylaxis to medical inpatients unless at high risk for Gi complications*. Philadelphia, PA. Retrieved from http://www.choosingwisely.org/clinician-lists/society-hospital-medicine-adult-medications-for-stress-ulcer-prophylaxis-inpatient/