



Implementation of Peptic Ulcer Disease (PUD) Prophylaxis

Rationale for PUD prophylaxis

- Critically ill patients who require mechanical ventilation are at increased risk for gastrointestinal bleeding from stress ulcers
- Decreasing pH of gastric contents may protect against a greater pulmonary inflammatory response to aspiration of gastrointestinal contents. The effects of aspirating acidic contents may be worse than those with a higher pH.
- Reduce volume of gastric juice

- Not all ICU patients have the same risk of developing stress related mucosal disease (SRMD)
- Specific risk factors include :
 1. mechanical ventilation (more than 48 hours)
 2. coagulopathy
 3. shock states (septic, haemorrhagic, cardiogenic, anaphylactic)
 4. severe head injury and neurosurgical patients
 5. severe burns (more than 30%)
 6. multiple organ failure

Respiratory failure and coagulopathy are the strongest risk factors for clinically important gastrointestinal bleeding

- in the ICU with history of gastric or duodenal ulceration, or with cirrhosis or acute renal failure, may benefit from prophylactic measures.
- Patients with multiple risk factors have an additive effect on the probability of SRMD.

Prophylactic therapy for SRMD

Considering available evidence and cost-effectiveness of current pharmacological agents for prophylaxis, the following are recommended:

1. IV Ranitidine 50 mg 8 hourly.
Reduce dose to 50 mg 12 hourly in patients with renal failure

The superior efficacy of intravenous H2 antagonists compared with sucralfate in preventing SRMD has been demonstrated, and therefore, H2 antagonists are preferred.

Prophylactic therapy for SRMD

2. The use of proton pump inhibitors (PPI) as prophylaxis has not been shown to be superior to H2 antagonists and should probably be limited to those with history of recent UGIB or recent endoscopically proven ulcer.

IV Omeprazole or IV Pantoprazole 40 mg daily
PPIs are not renally eliminated and thus dose adjustment in renal impairment is not necessary

1. For those who do not have UGIB and are on full feeds, change to oral therapy
2. Although the potential protective effect of enteral nutrition on the gastric mucosa means that it should be considered as an adjunct to pharmacological prophylaxis in appropriate cases, there is currently no evidence that enteral nutrition **alone** is sufficient to reduce the risk of stress related bleeding. Combination with pharmacotherapy has been shown to reduce SRMD incidence.

Implementation

Every patient that receives mechanical ventilation and have the risk factors mentioned must be prescribed

- IV Ranitidine 50 mg 8H
- IV Ranitidine 50 mg 12 H (renal failure)
- Change to oral ranitidine 150 mg bd or nocte once patient on established enteral feeding
- Continue until patient discharged from ICU

Recommendations to improve compliance of prescribing Peptic ulcer prophylaxis

- Include PUD as part of ICU order on admission in drug chart
- Include PUD as an item for discussion on daily ward rounds
- Empower nurses to remind doctors to prescribe PUD if the drug had not been prescribed
- Empower pharmacists to review orders for patients in the ICU to ensure that PUD has been prescribed and given by nurses
- Post Compliance with the intervention in a prominent place in your ICU to encourage change and motivate staff