Bullet Point Nursing

Gastrointestinal Pharmacology

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Pathophysiology review

- Gastroesophageal reflux disease (GERD) is where the lining of the esophagus is exposed to acidity from the stomach contents
- Peptic ulcer disease (PUD) is an ulceration in the lining of the stomach or duodenum
    - Top primary causes are NSAID use and *H. pylori* bacteria
- Non-pharmacological interventions include reducing tobacco and alcohol use, weight loss, avoiding spicy foods, not eating before bed, not lying down after eating, and avoiding NSAIDS.

Drug class: Proton Pump Inhibitors (PPI)

- Drugs:
    - Omeprazole (Prilosec)
    - Pantoprazole (Protonix)
    - Esomeprazole
- MOA: Inhibits the enzyme that generates gastric acid
- Indications: GERD
    - Used off-label for PUD, prevention of NSAID and stress-induced ulcers
- Rebound issues can occur with cessation after long term use
- Ideally should not be used for more than 4-8 weeks
- More potent versus H2 receptor antagonists
- Available over the counter
- Long term use increases risk of osteoporosis and fractures
    - Advise patients to take calcium and vitamin D

Drug class: Histamine 2 receptor antagonists

- Drugs:
    - Famotidine (Pepcid)
    - Ranitidine (Zantac)
    - Cimetidine
- MOA: Reduces gastric juices and acidity of it
- Indications: GERD
    - Prevention of NSAID and stress-induced ulcers
- Can be used daily or PRN
- Ideally should not be used for more than 4-8 weeks
- Available over the counter

Drug class: Pepsin inhibitor

- Drug:
    - Sucralfate
- MOA: Creates a coating over the ulcer
- Indication: Duodenal ulcer
- Ideally should not be used for more than 4-8 weeks
- Taken 4 times per day

Drug class: Prostaglandin E1 (PGE1) analog.

- Drug:
    - Misoprostol
- MOA: A synthetic prostaglandin that replaces those consumed by NSAIDs
- Indications: Prevention of ulcers in patients taking long-term NSAIDS and medical termination of pregnancy (in combination with mifepristone).
- SE/AE: GI effects, uterine cramping or bleeding
- Teratogenic, cannot be used in pregnancy

Drug class: Antacids

- Drugs:
    - Aluminum hydroxide
    - Calcium Carbonate (Tums)
    - Magnesium hydroxide
    - Sodium Bicarbonate (Alka-Seltzer)
- MOA: Neutralizes gastric acid, increasing the pH in the stomach to reduce acidity
- Indications: Symptom relief in PUD and GERD
- Rapid onset and relief (dosed PRN)
- Available over the counter
- Should not be taken simultaneously with other medications due to potential drug interactions
- SE/AE:
    - Aluminum-based antacids: Can cause constipation.
    - Magnesium-based antacids: Can cause diarrhea.
    - Sodium bicarbonate: Risk of alkalosis or sodium overload, particularly in renal impairment.
    - Calcium carbonate: May cause constipation or contribute to hypercalcemia with overuse.
- Overdose can cause acid base and/or electrolyte imbalances

Peptic ulcer disease due to H. Pylori requires ABX treatment

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References

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