GI Medications – Kim Baily RN PhD

Physiology of the stomach
- Parietal cells secrete HCl acid
- Mucus cells

Stomach disorders
- Gastroesophageal reflux disease (GERD)
- Peptic Ulcer Disease (PUD)
  - Helicobacter pylori
- Treatment
  - Relieve symptoms
  - Promote healing
  - Prevent reoccurrence
  - Life style changes
  - NSAID alternatives

Pharmacotherapeutics
- Antibiotics
  - Combinations of antibiotics
  - Often given with drugs that reduce acid secretion
  - Treatment options Table 48.1 Page 898
- Lansoprazole, clarithromycin, amoxicillin
  - Omeprazole, clarithromycin, amoxicillin
  - Bismuth triple therapy
- Proton Pump Inhibitors
  - H+/K+ ATPase
  - Prevent movement of HCL out of parietal cells
  - Blocks 90% acid
- Omeprazole (Prilosec)
  - A/R headache and diarrhea
  - Take before meals
  - Do not crush or chew drug
  - Lansoprazole (Prevacid)
- Cytoprotective Agents
  - Sulfated sucrose bind to base of ulcer
  - Protective barrier
- Sucralfate (Carafate)
- Histamine H2 Receptor Antagonists
  - Reduce stomach acid
  - Cells less responsive to histamine, acetylcholine and gastrin
  - Well tolerated
- Ranitidine (Zantac)
  - Interacts with numerous other drugs
  - A/R (all rare) pancytopenia, autoimmune hemolytic or aplastic anemia
  - Give separate from antacids
  - Cimetidine (Tagamet)
- Antacids - Interactions
  - Cause chelation Decreased absorption of other drugs
  - Change pH – affect the absorption of acidic and basic drugs
  - Drug effects:
    - Do not line the stomach
Increase pH to 4+ (neutralize 50% juices). 90% reduction in acid
Reduces pain by: Inhibit pepsin (Digestion),
Increase resistance of stomach lining
Increase tone of lower esophageal sphincter

**Aluminum/Magnesium combination – Maalox**
- A/R
  - Magnesium ➔ diarrhea
    - C/I in kidney failure (Hypermagnesemia)
    - Hypophosphatemia
  - Aluminum ➔ constipation
    - Caution in patient with renal failure

**Other Antacids**

**Calcium carbonate (TUMS)**
- Caution in patients with renal calculi
- Patients taking digitalis
- A/R
  - Hypercalcemia
  - Hypophosphatemia

**Antacids – Nursing Considerations**
- No meds for 2 hrs following antacids. Affects absorption
- Take 1 hour after meals or at bedtime
- Contact MD if constipation or diarrhea
- Antacids may promote premature dissolving of enteric coated pills
- Cautious use in CHF, HT
- Many drug interactions
- Mg antacids C/I in renal failure
- Encourage fluids and fiber

**Gastrointestinal Stimulants**

**Metoclopramide (Reglan)**
- Relieves symptoms of diabetic gastric paresis
- N/V, heartburn and anorexia
- Short term therapy of GERD for pts who do not respond to therapy
- Antiemetic effect since dopamine ➔ N/V by stimulating medullary CTZ
- C/I
  - GI hemorrhage, perforation or mechanical obstruction
  - Sensitivity to drug
  - Pheochromocytoma

**Antiemetics**
- Nausea is the sensation of abdominal discomfort that is intermittently accompanied by a desire to vomit
- Vomiting is the forceful expulsion of gastric contents up the esophagus and out the mouth
- Causes of N/V
  - Postop NV
  - Pain not treated appropriately following sx may result in NV
  - Swallowed gas and blood
  - Motion Sickness (stimulation of labyrinth).
  - Vestibular network bombarded with abnormal amount of stimuli. Lies close to vomiting center.
  - Pregnancy - 40% during first 16 weeks. Psychogenic - Threatening or distasteful
**Chemotherapy-Induced Emesis**
- **Antidopaminergic**
  - Drug that prevents NV by blocking dopamine receptors on the CTZ
  - **Metaclopramide (Reglan)**
- **Anticholinergic**
  - Bind to and block ACh receptors in Vestibular nuclei in labyrinth
  - **Meclizine (Antivert)**
- **Selective Serotonin Receptor Antagonists**
  - Block serotonin receptors in GI tract, CTZ and VC
  - Aka 5-HT3 receptor antagonists
  - **Ondansetron (Zofran)**
    - Tx: Cancer therapy and radiotherapy
    - Post op N/V

**Antiflatulents**
- Trapped gas can cause severe pain
- Upwards – belching
- Downwards – flatulence (Wizpoppers!)
- Disperse gas pockets in GI tract
- **Simethicone (Mylicon)**
  - Defoaming action
- **Activated charcoal**
  - Absorbs, soothes, detoxifies
  - Gas, diarrhea
  - Antidote for poisons

**Antidiarrheals**
- Diarrhea – increase in frequency or fluid content of bowel movements
- Symptom not a disease
- Causes of Diarrhea
  - Infection
  - Bacteria foreign to traveler but OK to local population (traveler’s)
  - Spicy or fatty foods
  - Enzyme deficiency -
  - Excess laxatives
  - Drug therapy
  - Emotional stress
  - Hyperthyroidism
  - Inflammatory bowel disease
  - Surgical bypass of intestine Cancer

**Anti-diarrheals**
- **Opiates – decrease bowel motility**
  - Diphenoxylate with atropine sulphate (Lomotil)
- **Adsorbents**
  - Pepto-Bismol
- **Anticholinergics**
  - Donnatel
- **Intestinal flora modifiers**
  - Lactobillus acidophilus
- **Adsorbents**
Coat wall of GI tract – bind bacteria or toxin and eliminate in stool
Used as antidiarrheal
Used to prevent the absorption of poisons and toxins
Bismuth Subsalicylate (Pepto-Bismol)
Activated charcoal

Laxatives
- Constipation – abnormally infrequent and difficult passage of feces
- Symptom not a disease
- Physiology
  - Causes of Constipation
    - Dietary – inadequate fiber
    - Delaying defecation
    - Inactivity
    - Inadequate fluids
    - Irritable bowel syndrome (diarrhea or constipation)
    - Weakened abdominal muscles
    - Hemorrhoids
    - Cancer
    - Hypothyroidism
    - Drug therapy - opioids
- Indications for Use of Laxatives
  - Removal of parasites
  - Inactive colon
  - Reduction of ammonia absorption in hepatic encephalopathic conditions
  - Drug induced constipation
  - Pregnancy/post op
  - Poor physical activity
  - Removal of toxic substances from the body
  - Poor diet
  - Megacolon
  - Preparation for colonic diagnostic procedures or surgery
  - Facilitation of BM in anorectal disorders

Laxatives
- Saline Laxatives
  - MOM, Fleets enema
- Bulk-forming - absorb water into intestine
  - Psyllium (Metamucil)
- Emollient – stool softeners – lubricant
  - Docusate (Colace)
- Hyperosmotic – increase water content
  - Lactulose****
    - Also reduces blood ammonia levels
    - Patients with systemic encephalopathy
- Stimulant – increase peristalsis + fluid
  - Phenolphthalein (ExLax)

Patient Education - Laxatives
- Long term use of laxative can lead to dependency - potential for abuse
- Discontinue: abdominal distention, pain or worsening of symptoms
- Exercise, Fiber and Fluids