chapter 40

**Acid neutralizers and antacids**
Neutralize or reduce acid in the stomach and duodenal contents by combining with HCL and increasing the stomach acid PH (more Base)

**Uses**
Hyperacidity caused by: heartburn, acid indigestion, sour stomach, GERD, Peptic ulcer
aluminum carbonate treats: Hyperphosphatemia, or as adjunct to prevent renal calculi

**Adverse Reactions**
Magnesium and sodium containing antacids may have a laxative effect:

Mg Laxatives: severe diarrhea, dehydration, hypermagnesia( nausea, vomiting, hypotension, decreased respirations)

Aluminum and calcium antacids can cause constipation, intentional impaction, bone pain

**Calcium Laxatives**: rebound hyperacidity, metabolic alkalosis, hypercalemia, vomiting, confusion, renal calculi, neurologic impairment

**Sodium laxatives**: systemic alkalosis, hyperacidity

**Contraindications**
Severe abdominal pain, lactation, cardiovascular problems (HF, HTN,) and those on sodium restricted diets

**Calcium laxatives are contraindicated in those with hypercalcemia and renal calculi**

**Precaution**
Aluminum laxatives: are used with caution in Pt's with peptic ulcer disease, gastric outlet obstruction or upper GI bleed

**Magnesium/aluminum based**: decreased kidney function

**Calcium laxatives**: respiratory insufficiency, renal impairment, cardiac disease

**Interactions**
Digoxin, isonizid, phenytoin, chlorpromazine: decreased absorption of the drug

Tetracycline: decreased effectiveness of the anti infective

Corticosteroids: decreased anti inflammatory properties

Salicylates: pain reliever is excerpted more rapidly in urine
ACID NEUTRALIZERS

Aluminum carbonate: Basaljel
Uses: symptomatic relief peptic ulcer, stomach hyperacidity, hyperphosphatemia
Adverse Reactions: bone softening, neurotoxicity

Calcium carbonate: tums, mylanta
Uses: symptomatic relief of peptic ulcer and hyperacidity, calcium deficiencies
Adverse reactions: Acid rebound

Magnesium oxide: milk of magnesia
Uses: symptomatic relief of peptic ulcer, stomach hyperacidity, constipation
Adverse Reactions: bone loss in patients with chronic renal failure

CAM relieves ulcer pain and hyper acidity.
Acid reducing agents

Histamine H2 Antagonist

Inhibit the action of Histamine at H2 receptor cells of the stomach, reduced secretion of gastric acid.

When ulcers are present, the decrease in acid allows the ulcer to heal.

Uses

Heartburn, acid indigestion, sour stomach, GERD, gastric duodenal ulcer, gastric hypersecretory conditions.

Adverse Reactions

Dizziness, somnolence, headache, confusion, hallucination, impotence, diarrhea.

Contraindication and precautions

Used cautiously in severely ill older patients. Cimetidine is used cautiously in patients with diabetes.

Interactions

Antacids: decreased absorption of the H2 antagonist
Carmustine: decreased WBC count
Opioid Analgesics: increased risk of respiratory depression
Oral anticoagulants: increased risk of bleeding
Digoxin: may decrease digoxin levels

Cimetidine: Tagamet
USES: gastric/duodenal ulcers, GERD, hypersecretory conditions, GI bleeding, heart burn
ADVERSE REACTIONS: headache, somnolence, diarrhea

Famotidine: pepcid
Uses: same as cimetidine
Adverse Reactions: same as cimetidine

Ranitidine: zantac
Uses: erosive esophagitis
Adverse Reactions: same as cimetidine
**Proton Pump Inhibitors**

Suppress gastric secreations by blocking the final step in the production of gastric acid by the gastric mucosa.

**Uses**

Used for treatment or symptomatic relief of gastric and duodenal ulcers, H. pylori, GERD, erosive esophagitis, pathologic hypersecreatory conditions, bleeding in pts using anti-platelet drugs.

**Adverse Reactions**

Headache, nausea, and abdominal pain.

**Contraindications**

Proton pump inhibitors are used cautiously in older adults, hepatic impairment, prolonged use may cause decreased absorption of vitamin B12.

**Interactions**

- Sucralfate: Decrease absorption of proton pump inhibitor.
- Ketoconazole/ampicillin: Decreased absorption of anti-infective.
- Oral anticoagulants: Increase risk for bleeding.
- Benzoes/phenotoin: Risk for toxic level of seizure drug.
- Clarithromycin (omeprazole): Increase plasma levels of both drugs.
- Biphosphates: Increased risk of fracture.

**Proton Pump Inhibitors**

- *Esomeprazole*: Nexium
- *Uses*: Erosive esophagitis, GERD, H. Pylori, NSAIID associated ulcer
- *Adverse Reactions*: N.V.D

- *Iansporanzole*: Prevacid
- *Uses*: Same + hypersecreatory conditions, cystic fibrosis (intestinal malabsorption)

- *Omeprazole*: Prilosec
- *Uses*: Same + hypersecreatory conditions, heart burn, reduce the risk of upper GI bleed

- *Pantoprazole*: Protonix
- *Uses*: GERD, erosive esophagitis, hypersecreatory conditions.

**Nursing Actions**

Increase risk of fractures in menopausal women who take biphosphates and large doses of proton pump inhibitors.

**Misc, Acid Reducers**

- *Sucralfate*: Carafate
- *Uses*: Forms viscous substance to buffer acid, short-term duodenal ulcer tx
- *Adverse reactions*: Constipation

- *Misoprostal*: Cytotech
- *Uses*: Prevents gastric ulcers in pts taking NSAIDS
- *Adverse reactions*: Abdominal pain
GI STIMULANTS
Used to treat delayed gastric emptying and emesis. They increase the motility of the upper GI tract without producing more acid secretions.

Uses
Gerd, gastric stasis

Adverse reactions
High doses or prolonged admin may cause CNS symptoms, restlessness, extrapyrimadial effects, drowsiness and dizziness.

Contraindications
GI obstruction, gastric perforation and hemorrhage, phenochromocytoma, Parkinson's, or seizure disorder or those taking drugs that may cause extrapyramidal effects

Caution
Diabetes and cardiovascular disease

Interactions
Cholinergics/opioids: decrease effectiveness of metoclopramide
* Cimittedine: decreased absorption of cimetidine
* Digoxin: decrease absorption of Digoxion
* MAOI: risk of hypertensive episode
* Levodopa: decreased metoclopramide and levodopa

GI stimulants

Metoclopramide:
* Uses: diabetic gastropareisis, GERD, prevents nausea and vomiting
* Adverse Reactions: extrapyrimadial effects
**Antiemetics**

The medulla has a vomiting center and is stimulated by GI irritation, motion sickness, vestibular neuritis. Adjacent to the chemoreceptor trigger zone.

**Uses**

Tx and prevention of nausea. Pre op to prevent nausea during surgery, immediately post op from anesthesia, when giving antineoplastic drugs, during radiation therapy, during pregnancy for hyperemesis.

**Adverse Reactions**

Varying degrees of drowsiness.

**Contraindications**

5ht3 should be given to patients with heart block or prolonged QT intervals, not recommended during pregnancy or for uncomplicated vomiting in young children.

**Precautions**

Severe nausea and vomiting should not be treated with antiemetics alone, glaucoma or obstructive disease of the GI or GU systems, older men with BPH, promethazine is used cautiously in patients with HTN OR sleep apnea. 5HTC3 should not be given with cardiac conduction problems.

**Interactions**

Cns depressants: increased sedation
Antihistamines: adverse cholinergic blocking effects
Antacids: decreased absorption of the antiemetic
Rifampin with 5HT3 receptor: decreased effect of 5HT3
Lithium: extrapyramidal effects

**Antidopaminergics**

**Chlorpromazine:**

Uses: control of nausea, vomiting, intractable hiccoughs
Adverse Reactions: hypotension, nasal congestion

**Promethazine:**

Uses: control N.V with anesthesia and post op, motion sickness
Adverse reactions: urinary retention

**Trimethobenzamide:** tigan
Uses: N.V
Adverse reactions: Parkinson’s symptoms, hypotension (IM route) blurred vision

**Cholinergic blocking**

**Dolasteron:** anzemet
Uses: prevent chemo induced nausea, post op nausea
Adverse reactions: fever, fatigue abdominal pain

**Ondansetron:** zofran
Uses: same + hyperemesis r/t pregnancy, bulimia, spinal analgesia, gallbladder induced puritis
Adverse Reactions: hypoxia
**Misc. antiemetics**

**Aprepitant:** emand  
**Uses:** prevent chemo nausea, post op NV  
**Adverse reactions:** stomatitis

**Dronabinol:** Marinol  
**Uses:** same plus appétit stimulant for HIV pts  
**Adverse Reactions:** euphoria

**Nursing actions**
Assess type and intensity of vomiting symptoms, take vitals and assess for fluid and electrolyte imbalance  
Monitor continuously for pain, sour taste, bloody coffee ground emesis. Take BP and RR every 2-4 hours  
Measure I&O. Document exact time they vomit. If vomiting is severe you may think about NG intubation auctioning to prevent aspiration.  
Daily weights.
Antacids may be administered hourly for 2 weeks then used for peptic ulcer after the 2 weeks  
Administer antacids 1-2 hours after meals at bedtime. Do not administer other oral drugs within 1-2 hours of antacids  
Tardive dyskinesia is known to occur after 12 weeks of use of metoclopramide
**Chapter 41 lower GI system Drugs**

**Aminosalicylates**
Are aspirin like with anti inflammatory action and exert a topical anti inflammatory effect in the bowel
They are used to treat Crohn's Disease, Ulcerative colitis, and inflammatory diseases

**Adverse reactions**
Abdominal pain, nausea, diarrhea, headache, fever, dizziness, and weakness

**Contraindications**
Hypersensitivity to salicylates, sulfonamides, sulfites, or intentional obstruction, do not give to children under 2 years old

**Interactions**
**Digoxin**: reduced absorption of digoxin
**Methotrexate**: immunosuppression
**Oral hypoglycemic drugs**: increased glucose levels
**Warfarin**: bleeding

**Aminosalicylate drugs**
**Belasalazide**: colazal
**Uses**: active ulcerative colitis
**Adverse reactions**: headache abdominal pain

**Mesalazine**: asacoal
**Uses**: same + proctosigmoiditis and proctitis
**Adverse reactions**: SAME

**Sulfasalazine**: azulifidine
**Uses**: same + rheumatoid arthritis
**Adverse reactions**: anorexia, gastric distress, reduced sperm count

**Misc. bowel disorder drugs**
**Alosetron**: lotronex( iv every 2-8 weeks)
**Uses**: 2nd line female IBS/ severe diarrhea
**Adverse Reactions**: hemorrhoid

**Infliximab**: remicade
**Uses**: same + Crohn's and ulcerative colitis
**Adverse Reactions**: sore throat, sinus infection, gastric distress
Antidiarrheals
Decrease intestinal peristalsis (related to opioids) "motophen" to treat diarrhea. Loperamide acts directly on the muscle wall of the bowel to slow motility and is not R/T opioids.

Adverse reactions
Anorexia, nausea, vomiting, constipation, abdominal discomfort, pain and distention, dizziness, drowsiness, headache, euphoria and rash

Contraindications
In those who's diarrhea is from E. coli, salmonella, and shigella, pseudomembranous colitis, abdominal pain of unknown origin and obstructive jaundice and children under 2

*If diarrhea lasts more than 2 days when tx with OTC meds contact your PCP

Interactions
Antihistamine/opioids/sedatives/hypnotics: CNS depression
Antihistamines/general antidepressants: Increased cholinergic blocking adverse reactions (dry)
Maoi: hypertensive crisis

Antidiarrheal drugs
Bismuth: bismatrol
Uses: nausea, diarrhea, abdominal cramps, H. Pylori with duodenal ulcer
Adverse reactions: dry skin/mucous membranes/ lightheadedness

Dephenoxylate & atropine: motophen (opioid related)
Uses: symptomatic relief of acute diarrhea
Adverse reactions: same

Loperamide: imodium
Uses: same
Adverse Reactions: same

ANTIFLATULANCE DRUGS
Reduce flatus or gas in the intestinal tract, do not absorb or remove gas, they help the body release gas by belching or flatus. Simethacane has a deforming that disperses and prevents the formation of gas pockets in the intestines. Charcoal binds gas for expulsion

Uses
Post op distention, dyspepsia, peptic ulcer, diverticulosis, IBS

Interactions
There may be a decreased effectiveness of other drugs because of absorption by charcoal, which can absorb other drugs in the GI tract.

Antiflatus drugs
Charcoal: Charcocaps (oral ad meals no more than 4-16g a day)
Uses: intestinal gas, diarrhea, poison antidote
Adverse reactions: Black stool

Simethacone: gas x (oral bedtime)
Uses: post op distention, dyspepsia, IBS, peptic ulcer
Adverse Reactions: bloating, diarrhea, constipation, heart burn
Laxatives

Various types. All treat constipation. Short term relief.

**Stimulant/ Emollient/saline laxatives**: evacuate the colon for rectal and bowel exams

**Stool softeners/ mineral oil**: prevent strain during defecation (post MI, ANORECTAL operation)

**Psyllium/polycarbophil**: IBS and diverticulosis

**Hyperosmotic**: reduction of ammonia levels in hepatic encephalopathy

**Adverse reactions**
May cause diarrhea, loss of h2o, electrolyte imbalance, abdominal pain and discomfort, nausea, perianal irritation, fainting, bloating flatulence and weakness

**Contraindications**
Persistant abdominal pain, nausea and vomiting of unknown cause, signs of acute appendicitis, fecal impaction, intestinal obstruction, acute hepatitis

Magnesium is used cautiously in any degree of renal impairment. All are used cautiously with rectal bleeds.

**Interactions**
Mineral oil may impair GI absorption of fat soluble vitamins KADE and reduce absorption of other drugs

**Bulk producing laxatives**

**Methylcellulose**: citrcuel
**Uses**: relief of constipation IBS, severe watery diarrhea
**Adverse Reactions**: constipation, fainting, perianal irritation

**Psyllium**: fibrall (wafers)
**Uses**: same
**Adverse reactions**: same

**Emollient laxatives**

**Mineral oil**: kondermul (bed time oral)
**Uses**: fecal impaction
**Adverse reactions**: perianal discomfort from anal seepage

**Stool softeners**

**Docusate**: colace
**Uses**: constipation prevention of strain when moving bowels
**Adverse reactions**: perianal irritation, fainting

**Hyperosmotic agents**

**Glycerine**: Colace (suppository)
**Uses**: constipation
**Adverse reactions**: same as ducosate

**Lactulose**: enema or oral
**Uses**: constipation and hepatic encephalopathy
**Adverse reactions**: same as ducosate
**Stimulant laxatives**

*Sennosides*: agoral  
**Uses**: constipation  
**Adverse reaction**: same as ducosate + darkening of urine and colon mucosa

*Bisacodyl*: ducolax (oral, suppository, enema)  
**Uses**: same  
**Adverse reactions**: perianal irritation

**Sailine laxatives**

*Magnesium preparations*: milk of magnesia  
**Uses**: evacuate colon for endoscopy or colonoscopy  
**Adverse reactions**: same as ducosate

**Bowel evacuants**

*Polyethylene glycol*: Miralax  
**Uses**: constipation  
**Adverse reactions**: same as ducosate

*Polyethylene glycol electrolyte solution*: Golytly (must be consumed in 3 hours)  
**Uses**: evacuate colon for endoscopy  
**Adverse Reactions**: same as ducosate