**Gastrointestinal Disorders and Medication Management**

**Drugs for the Gastrointestinal Tract**
- Gastrointestinal disorders
  - Vomiting
  - Toxic substance ingestion
  - Diarrhea
  - Constipation

**Treatment for Vomiting**
- Nonpharmacologic measures
  - What ideas do you have for patients?
- Nonprescription antiemetics
- Prescription antiemetics
- Try to always determine the underlying cause first

**Nonprescription Antiemetics**
- Common over the counter (OTC)
  - Dimenhydrinate (Dramamine)
  - Meclizine (Antivert)
- Use & Considerations
  - Motion Sickness
    - Take prior to travel
- Side Effects
  - Similar to anticholinergics
  - Drowsiness & Dizziness
  - What side effects do you expect?
  - What will you teach?
- Bismuth subsalicylate
  - Pepto Bismol
- Use & Considerations
  - Nausea, mild vomiting, diarrhea
    - Coats gastric mucosa
    - Acts as an adsorbent to toxins
- Side Effects
  - Temporary darkening of stools

**Prescription Antiemetics**
- Prescriptive antihistamines
  - Hydroxyzine (Vistaril)
- Anticholinergic
  - Scopolamine (Transderm-Scop)
• Dopamine antagonists
  o Phenothiazines
    ▪ Prochlorperazine (Compazine)
    ▪ Promethazine (Phenergan)
  o Butyrophenones
    ▪ Droperidol (Inapsine)
  o MISC Dopamine antagonist
    ▪ Metoclopramide (Reglan)

• Benzodiazepines
  o Lorazepam (Ativan)

• Serotonin receptor antagonist
  o Ondansetron (Zofran)

**Nursing Process in Vomiting**

• Assessment
  o Onset, duration, frequency
  o Health history
  o Question Possible factors
  o S / S infection
  o Check Vital signs
  o Bowel sounds
  o I/O
  o Electrolytes

• Interventions
  o Maintain good oral hygiene
  o Teach client alcohol intensifies the sedative effect
  o Teach client no driving / dangerous activities
  o WARNING: Drugs are not meant for pregnancy related vomiting

**Emetic (Induce Vomiting)**

• Activated Charcoal
  o Promotes adsorption (binding)

• Use & Considerations
  o Emergency antidote for treatment of drug overdose or chemical poisonings
  o Administration = PO, NG
  o Space 2 h apart from other oral meds
  o Often used post gastric lavage

• Side effects
  o Vomiting & diarrhea
Causes of Diarrhea

- Foods
- Impaction
- Viruses or Bacteria
- Toxins
- Drug Reaction
- Laxative Abuse
- Traveler’s Diarrhea
  - Escherichia coli
- Malabsorption Syndrome
- Bowel Tumor
- Inflammatory Bowel Disease
  - Ulcerative Colitis
  - Crohn’s Disease

Treating Diarrhea

- Nonpharmacologic measures
  - What ideas do you have for patients?
- IV fluid and electrolyte replacement
- Reduce risk of traveler’s diarrhea
  - Teach....
    - Bottled water
    - Washing fruits
    - Cooking vegetables

Common Antidiarrheals

- Opiates & Opiate-related agents
  - Decrease peristalsis and abdominal cramping
    - diphenoxylate (Lomotil)
      - Combined with atropine
    - loperamide (Imodium)
      - OTC – traveler’s diarrhea
- Considerations
  - Monitor for CNS depression
  - Dependency potential
  - Contraindicated in liver disease
- Somatostatin analog
  - Suppress gastric enzymes
  - Decreases smooth muscle contraction
  - Used in severe diarrhea and lower gastrointestinal hemorrhage
    - Octreotide (Sandostatin)
• Adsorbents
  • Coats GI tract & binds to toxins
    o Kaopectate - OTC
    o Pepto Bismol – OTC

**Nursing Process and Diarrhea**

- Assessment
  - Onset, duration, frequency
  - Health history
  - Question Possible factors
  - S / S infection
  - Check Vital signs
  - Bowel sounds
  - I/O
  - Electrolytes

- Interventions
  - Maintain good skin hygiene and protect from irritation
  - Promptly report acute abdominal pain and/or bleeding, duration > 48h
  - Teach client to avoid sedatives and alcohol
  - Advise client - take as prescribed
    - Medication can be habit forming
- Encourage fluids

**Constipation**

- Types of laxatives
  - Osmotic (saline)
  - Stimulant (contact)
  - Bulk-forming
  - Emollient (stool softeners)

**What are potential causes and nonpharmacologic treatment examples?**

**Osmotic (Saline) Laxatives**

- Action
  - Hyperosmolar effect = pulls water into bowel using sodium, magnesium, potassium salts stimulating peristalsis
    - Lactulose (Enulose)
    - Magnesium hydroxide (Milk of Magnesia)
    - Magnesium oxide (Mag-Ox)
    - Sodium biphosphate (Fleet Phospha-Soda)

- Indication
  - Diagnostic bowel prep
Side effects
- Electrolyte imbalances, hypotension, weakness

Contraindication
- Congestive Heart Failure
  - Golytely preferred

Stimulants (Contact) Laxatives
- Action
  - Irritant
    - Bisacodyl (Dulcolax)
    - Phenolphthalein (Ex-Lax)
- Indication
  - Constipation relief
  - Adjunct to bowel diagnostic bowel prep
- Side effects
  - Nausea, abdominal cramping, weakness, electrolyte imbalance with chronic use, dependency & abuse
- Contraindication
  - Intestinal obstruction

Bulk-Forming Laxatives
- Action
  - Non-absorbable (fiber) – causing water absorption promoting bulk and increasing peristalsis
    - Calcium polycarbophil (Fibercon)
- Indication
  - Promotes regularity & Increases fiber intake
- Side effects
  - Intestinal obstruction with inadequate water intake
- Contraindication
  - Intestinal obstruction

Emollients (Stool Softeners)
- Action
  - Increase water retention and act as a lubricant
    - Ducosate Sodium (Colace)
      - Pericolace is ducosate sodium with casanthranol
    - Mineral Oil
      - Absorbs fat soluble vitamins!
- Indication
  - Prevention, decrease straining, tx chronic constipation
• Side effects
  o Nausea, vomiting, abdominal cramping
  o Mineral oil absorbs fat soluble vitamins

• Contraindication
  o Inflammatory GI disorders
    ▪ Ulcerative colitis, Chrohns
    ▪ Appendicitis, Diverticulitis
  o Bowel obstruction

**Nursing Process and Constipation**

• Assessment
  o Bowel pattern, date of last BM
  o Health history
  o Question Possible factors
  o Check Vital signs
  o Bowel sounds

• Interventions
  o Teach client to report abdominal pain, N/V, rectal bleeding
  o Teach client that overuse can cause dependency
  o Teach client to increase fluids and activity as tolerated
  o Advise client to time administration to avoid disruption of sleep or activities

**GERD**

**Nonpharmacologic Measures**

• Avoid tobacco
• Avoid alcohol
• Weight loss
• Individual intolerances
• May need to avoid hot, spicy foods
• Avoid high fat/greasy foods
• Take NSAIDs, aspirin, & glucocorticoids with food; ↓ dose if possible
• Sit upright
• Don’t eat before bedtime
• Wear loose-fitting clothing

**Pharmacologic Measures**

• Antiulcer drugs
  o Tranquilizers
  o Anticholinergic drugs
  o Antacids
  o Histamine₂ (H₂)-blockers
o Proton pump inhibitors
o Pepsin inhibitor
o Prostaglandin E₁ analog

Antacids

- Action
  o Neutralize hydrochloric acid

- Systemic antacids
  o Sodium bicarbonate = Alka-Seltzer
  o Calcium carbonate = Tums

- Non-systemic antacids
  o Aluminum & magnesium products
  o Amphojel or Maalox

- Systemic antacid side effects
  o Sodium Bicarbonate
    ▪ Hypernatremia & water retention
    ▪ Metabolic alkalosis
  o Calcium Carbonate
    ▪ Hypercalcemia
    ▪ Milk-alkali syndrome
  o Both cause rebound acid effect

- Non-systemic antacid side effects
  o Diarrhea with magnesium based products
  o Constipation with aluminum & calcium based products
  o May contain Simethicone, an anti-gas agent

- Dosing
  o 1-3 hours pc & hs
  o Follow with water
  o Space antacids 1-2 hours apart from other medications

- Cautious Use
  o Electrolyte imbalance
  o Renal insufficiency
    ▪ related to calcium/magnesium/aluminum
  o Long term use

H₂-Blockers

- Action
  o Block gastric cells responsible for secretion of gastric acids

- Common H₂-blockers
  o cimetidine (Tagamet®)
  o ranitidine (Zantac®)
  o famotidine (Pepcid®)
Dosing
  o Space 1 hour before and 2 hours after antacids
Caution
  o Renal & Hepatic Disease
  o BUN, Creatinine, LFT's for All!

Proton Pump Inhibitors (PPIs)
  Action
    o Suppress gastric acid secretion by inhibiting the enzyme system in gastric cells blocking final step in acid production
  Common Use
    o Tx of GERDS, H. pylori, peptic ulcers, zollinger-ellison syndrome

Common Proton Pump Inhibitors
  • Omeprazole (Prilosec)
  • Lansoprazole (Prevacid)
  • Rabeprazole (Aciphex)
  • Pantoprazole (Protonix)
  • Esomeprazole (Nexium)

PPIs
  • Dosing
    o Daily Tx with reduced dosing for maintenance/prophylaxis
    o Give before food (preferably breakfast)
  • Cautious use
    o Hepatic and renal insufficiency

Pepsin Inhibitor
  • Action
    o Inhibits secretion of pepsin
    o Coats stomach mucosa
  • Drug = Sucralfate (Carafate)
  • Dosing = 1 gm ac & hs
  • Administer antacids 1 -2 hours apart
  • Side effects = constipation

Nursing Interventions for Antiulcer Drugs
  • Evaluate history of discomfort
  • Obtain medication history
  • Assess clients, renal & liver function; baseline stool guiac, and H & H
  • Teach client nonpharmacologic measures, even when medications must be prescribed
• Instruct client not to self-medicate without advice from physician
• Assure client receives appropriate dosing instructions based on type of antiulcer drug prescribed