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
  - Chrohn’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
  - Kaopectate – OTC
  - 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
  o Electrolyte imbalances, hypotension, weakness
• Contraindication
  o Congestive Heart Failure
  ▪ Golytely preferred

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

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

Emollients (Stool Softeners)
• Action
  o Increase water retention and act as a lubricant
    ▪ Ducosate Sodium (Colace)
      • Pericolace is ducosate sodium with casanthranol
    ▪ Mineral Oil
      • Absorbs fat soluble vitamins!
• Indication
  o 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, Chrohn’s
    ▪ 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 Histamine\(_2\) (H\(_2\))-blockers
- Proton pump inhibitors
- Pepsin inhibitor
- Prostaglandin E₁ analog

**Antacids**

- **Action**
  - Neutralize hydrochloric acid

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

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

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

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

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

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

**H₂-Blockers**

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

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

**Proton Pump Inhibitors (PPIs)**
- Action
  - Suppress gastric acid secretion by inhibiting the enzyme system in gastric cells blocking final step in acid production
- Common Use
  - 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
  - Daily Tx with reduced dosing for maintenance/prophylaxis
  - Give before food (preferably breakfast)
- Cautious use
  - Hepatic and renal insufficiency

**Pepsin Inhibitor**
- Action
  - Inhibits secretion of pepsin
  - 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

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