

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
 - Phenothiazines
 - Prochlorperazine (Compazine)
 - Promethazine (Phenergan)
 - Butyrophenones
 - Droperidol (Inapsine)
 - MISC Dopamine antagonist
 - Metoclopramide (Reglan)
- Benzodiazepines
 - Lorazepam (Ativan)
- Serotonin receptor antagonist
 - Ondansetron (Zofran)

Nursing Process in Vomiting

- Assessment
 - Onset, duration, frequency
 - Health history
 - Question Possible factors
 - S / S infection
 - Check Vital signs
 - Bowel sounds
 - I/O
 - Electrolytes
- Interventions
 - Maintain good oral hygiene
 - Teach client alcohol intensifies the sedative effect
 - Teach client no driving / dangerous activities
 - WARNING: Drugs are not meant for pregnancy related vomiting

Emetic (Induce Vomiting)

- Activated Charcoal
 - Promotes adsorption (binding)
- Use & Considerations
 - Emergency antidote for treatment of drug overdose or chemical poisonings
 - Administration = PO, NG
 - Space 2 h apart from other oral meds
 - Often used post gastric lavage
- Side effects
 - 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
 - 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 > 48o
 - 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
 - Docusate Sodium (Colace)
 - Pericolace is docusate sodium with casanthranol
 - Mineral Oil
 - Absorbs fat soluble vitamins!
- Indication
 - Prevention, decrease straining, tx chronic constipation

- Side effects
 - Nausea, vomiting, abdominal cramping
 - Mineral oil absorbs fat soluble vitamins
- Contraindication
 - Inflammatory GI disorders
 - Ulcerative colitis, Crohn's
 - Appendicitis, Diverticulitis
 - Bowel obstruction

Nursing Process and Constipation

- Assessment
 - Bowel pattern, date of last BM
 - Health history
 - Question Possible factors
 - Check Vital signs
 - Bowel sounds
- Interventions
 - Teach client to report abdominal pain, N/V, rectal bleeding
 - Teach client that overuse can cause dependency
 - Teach client to increase fluids and activity as tolerated
 - 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
 - Tranquilizers
 - Anticholinergic drugs
 - Antacids
 - Histamine₂ (H₂)-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
 - Hyponatremia & 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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