Chapter 41

Drugs for Bowel Disorders and Other Gastrointestinal Conditions

Lower Digestive Tract

- Small intestine is location for most nutrient and drug absorption
  - Peristalsis is controlled by autonomic nervous system
  - Peptic ulcer most common disorder
- Large intestine responsible for
  - Reabsorption of water
  - Excretion of fecal matter

Constipation

- Infrequent passage of hard, small stools
- Symptom of underlying disorder
- Common condition caused by
  - Lack of exercise
  - Insufficient dietary fiber

Constipation (continued)

- Common condition caused by
  - Diminished fluid intake
  - Slow motility of waste material through large intestine
  - Certain foods, medications, diseases
Diarrhea

- Increase in frequency and fluidity of bowel movements
- Occurs when colon fails to reabsorb enough water
- Is a type of body defense
  - Eliminates toxins and pathogens
  - Eliminates certain medications and infections

Diarrhea (continued)

- If prolonged, can lead to fluid, electrolyte, and acid-base imbalance
- Monitor frequently
  - May be related to pseudomembranous colitis

Laxatives and Cathartics

- Treat or prevent constipation
- Prepare bowel for surgery or diagnostic procedures
- Promote emptying of large intestine
- Stimulants and herbal agents
  - Stimulate peristalsis
- Mineral oil
  - Lubricates fecal mass

Actions of Laxatives and Cathartics (continued)

- Bulk-forming agents, stool softeners or surfactants, saline or osmotic laxatives
  - Add more bulk or water to colon contents

Diarrhea

- Treatment depends on severity and etiology
- Opioids for severe diarrhea
  - Most effective
  - Slow peristalsis

Medications for Simple Diarrhea

- Loperamide
- Bismuth compounds
- Psyllium preparations
- Probiotic supplements
Inflammatory Bowel Disease (IBD)
- Ulcerative colitis: erosions in large intestine
- Crohn’s disease: ulceration in distal part of small intestine
- Symptoms range from mild to acute
  - Abdominal cramping and diarrhea
- Periods of remissions and exacerbations

Treatment of Inflammatory Bowel Disease
- 5-aminosalicylic acid (5-ASA) agents
  - Sulfonamide sulfasalazine (Azulfidine), olsalazine (Dipentum), mesalamine (Asacol)
- Glucocorticoids
  - Prednisone, methylprednisolone, hydrocortisone
- Immunosuppressant drugs
  - Azathioprine (Imuran), methotrexate (MTX), infliximab (Remicade)—monoclonal antibody

Irritable Bowel Syndrome (IBS)
- Also known as spastic colon or mucous colitis
- Common disorder of lower gastrointestinal tract
- Symptoms include abdominal pain, cramping, bloating, gas
  - Constipation, alternating with diarrhea

Treatment of Irritable Bowel Syndrome
- Supportive, symptomatic treatment
- Bulk laxatives used
  - Psyllium
- Anticholinergic medications
  - Reduce bowel spasms
  - Dicyclomine (Bentyl)

Irritable Bowel Syndrome (continued)
- Functional bowel disorder
  - No presence of detectable disease
  - Stress and dietary factors precipitate symptoms

Treatment of Irritable Bowel Syndrome (continued)
- Tegaserod
  - One of few drugs approved for IBS with constipation
- Serotonin agonists; stimulates peristaltic reflex
Vomiting (Emesis)

- Defense mechanism used by body to rid itself of toxic substances
- Controlled by the "vomiting center"
  - Medulla of brain
- Associated with many conditions
  - Infection, poisoning
  - Psychological factors, pain
  - Changes in body position

Vomiting (Emesis) (continued)

- Many drugs can cause nausea and vomiting as side effects
  - Common reason to discontinue a drug
  - Emetogenic potential: capacity of drug to induce vomiting

Treatment of Nausea and Vomiting (Antiemetics)

- Simple nausea treated with over-the-counter drugs and herbal options
- Serious nausea treated with prescription drugs
  - Phenothiazines, antihistamines, Anticholinergicgs
  - Cannabinoids, glucocorticoids, benzodiazepines
  - Serotonin receptor antagonists

Anorexiants

- Drugs that affect hunger and/or appetite
- For short-term management of obesity
- Produce only modest effects
- In 1970s, amphetamine and dextroamphetamine widely used
  - Addictive, now rarely prescribed

Anorexiants (continued)

- Some products taken off market after causing heart problems
  - Fen-phen in 1990s
  - Ephedra products in 2004
- Two anorexiants used today
  - Orlistat—blocks lipid absorption in the gastrointestinal tract
  - Sibutramine—selective serotonin reuptake inhibitor (SSRI)

Role of the Nurse

- Monitor client’s condition
- Provide client education
- Obtain medical, surgical, drug history
- Assess lifestyle and dietary habits
- Obtain description of symptomology and current therapies
Laxative Therapy for Bowel Evacuation

- Assess abdomen for distension, bowel sounds, bowel patterns
- Peristalsis must be restored prior to laxative therapy
- Assess for colon cancer, esophageal obstruction, intestinal obstruction, fecal impaction, undiagnosed abdominal pain
- If diarrhea occurs, discontinue laxative use

Laxative Therapy for Bowel Evacuation (continued)

- Use with caution during pregnancy and lactation
- Take with one to two glasses of water
- Assess client’s ability to swallow
- Assess for diarrhea and cramping
- Assess for and educate clients about proper use of laxatives and stool softeners

Antidiarrheal Therapy

- Assess fluid and electrolyte status
- Assess for blood in stool
- Do not use if constipation should be avoided
- Assess client’s ability to get out of bed safely

Antidiarrheal Therapy (continued)

- Antidiarrheals contraindicated in some clients
  - Those with severe dehydration, electrolyte imbalance
  - Clients with liver and renal disorders, glaucoma

Tegaserod (Zelnorm) Therapy for IBD

- Monitor liver and renal function
- Monitor cardiovascular status
- Contraindicated in severe hepatic or renal impairment, bowel obstruction, gallbladder disease, abdominal pain

Tegaserod (Zelnorm) Therapy for IBD (continued)

- Administer drug just prior to meal, with full glass of water
- Tablets may be crushed
- Do not give drug to clients with frequent diarrhea
# Antiemetic Therapy

- Assess symptoms that precipitated vomiting
- If sedation and continued vomiting occur, nasogastric tube with suction may be indicated
- Client safety is a concern because of drowsiness

# Antiemetic Therapy (continued)

- Assess for risk for falls
- Immediately report vomiting of blood
- Do not use OTC antiemetics for prolonged periods

# Drugs Used to Stimulate Emesis

- Should only be used in emergency situations
- Used only when client is alert because of risk of aspiration
- When client is comatose, gastric lavage tube is placed and attached to suction to empty gastric contents
- Some poisons and caustic chemicals should not be vomited

# Anorexiant Therapy

- Focus on lifestyle changes that will have effect on long-term weight reduction
- Drugs for weight loss have limited effectiveness
  - Potentially serious side effects

# Anorexiant Therapy (continued)

- Education of clients essential
  - Should not take OTC or herbal medications without notifying health-care provider
  - If taking orlistat, take multivitamin each day
    - Omit dose if no fat present in meal or meal is skipped
    - Know that excessive flatus and fecal leaking may occur

# Pancreatic Enzyme Replacement Therapy

- Assess for use of foods that stimulate gastric and pancreatic secretions
- Assess for and monitor presence, amount, type of pain
- Assess respiratory status
Pancreatic Enzyme Replacement Therapy (continued)

- Monitor for elevated serum and urinary amylase and elevated serum bilirubin
- Monitor client's nutritional and hydration status and for signs of infection
- Check for pork allergy

Pancreatitis

- Pancreatic enzymes (amylase and lipase) trapped in pancreas
  - Not released into duodenum
- Associated with gallstones in women and alcoholism in men
- Pharmacotherapy includes
  - Replacement enzymes
  - Supportive drugs for reduction of pain and gastric-acid secretion

Laxatives

- **Prototype drug:** psyllium mucilloid (Metamucil)
- **Mechanism of action:** swells and increases size of fecal mass
- **Primary use:** to promote passage of stool
- **Adverse effects:** rare; less cramping than stimulant-type laxatives
  - With insufficient water, may cause obstructions in esophagus or intestine

Antidiarrheals, Opioids

- **Prototype drug:** diphenoxylate with atropine (Lomotil)
- **Mechanism of action:** slows peristalsis
- **Primary use:** for moderate to severe diarrhea
- **Adverse effects:** dizziness and drowsiness

Drugs for IBD and IBS

- **Prototype drug:** tegaserod (Zelnorm)
- **Mechanism of action:** as serotonin receptor agonist that causes an increase stool formation and number of bowel movements

Drugs for IBD and IBS (continued)

- **Primary use:** for clients who have constipation-dominant form of irritable bowel syndrome
- **Adverse effects:** diarrhea, which usually occurs as single episode
  - Resolves as therapy progresses
Antiemetics, Phenothiazines and Phenothiazide-like Drugs

- Prototype drug: prochlorperazine (Compazine)
- Mechanism of action: blocks dopamine receptors in brain
  - Inhibits signals to vomiting center in medulla
- Primary use: for severe nausea and vomiting

Antiemetics, Phenothiazines and Phenothiazide-like Drugs (continued)

- Adverse effects: dose-related anticholinergic side effects
  - Dry mouth, sedation, constipation
  - Orthostatic hypotension, tachycardia
  - Extrapyramidal symptoms are serious concern with prolonged therapy

Anorexiants

- Prototype drug: sibutramine (Meridia)
- Mechanism of action: as selective serotonin reuptake inhibitor (SSRI)
- Primary use: most widely prescribed appetite suppressant for short-term control of obesity
- Adverse effects: headache, insomnia, dry mouth
  - May cause tachycardia and raise blood pressure

Pancreatic-Enzyme Replacement

- Prototype drug: pancrelipase (Lipancreatin, Pancrease, Zymase)
- Mechanism of action: contains lipase, protease, and amylase of pork origin
  - Facilitate conversion of lipids into glycerol and fatty acids
  - Convert starches into dextrin and sugars
  - Convert proteins into peptides

Pancreatic-Enzyme Replacement (continued)

- Primary use: as replacement therapy for clients with insufficient pancreatic exocrine secretions
- Adverse effects: GI symptoms of nausea, vomiting, and/or diarrhea
  - Can cause metabolic symptom of hyperuricosuria
Laxatives

- Promote bowel movements
- Available OTC for self-treatment of simple constipation

Types of Laxatives

- Bulk-forming agents absorb water, adding size to fecal mass
- Stool softeners or surfactants cause more water and fat to be absorbed into stools
- Stimulants irritate bowel to increase peristalsis

Types of Laxatives (continued)

- Saline or osmotic laxatives are not absorbed in intestine
  - Pull water into fecal mass to create more watery stool
- Herbal agents are natural products available OTC
  - Most commonly used herbal laxative is senna
- Miscellaneous agents include mineral oil
  - Acts by lubricating stool and colon mucosa

Antidiarrheals

- For mild diarrhea
- Effective at returning elimination patterns to normal
- For severe cases, the opioids are the most efficacious of the antidiarrheal agents

Drugs for Inflammatory Bowel Disease

- Medications from several classifications
- Mild-to-moderate treated with 5-aminosalicylic acid (5-ASA) agents
- Corticosteroids used in more persistent cases
- Particularly severe disease may require immunosuppressant drugs

Drugs for Irritable Bowel Syndrome

- Treatment is supportive
- Targeted at symptomatic treatment
- Medications include bulk laxatives, anticholinergic drugs, serotonin agonists
**Antiemetics**

- Drugs from at least eight different classes
- Used to prevent nausea and vomiting
- Act by inhibiting dopamine or serotonin receptors in brain

**Anorexients**

- Used to induce weight loss by suppressing appetite and hunger
- Few such drugs on market
- Approved agents produce only modest effects

**Pancreatic-Enzyme Replacement**

- Pancreas secretes essential digestive enzymes
  - Carboxypeptidase, chymotrypsin, trypsin
- Lipase, amylase, and nuclease require presence of bile
- Lack of secretion results in malabsorption disorders
  - Replacement therapy sometimes warranted

**Clients Receiving Antidiarrheal Therapy**

- Assessment
  - Obtain complete health history
  - Assess sodium, chloride, potassium levels
  - Evaluate results of stool culture
  - Assess for presence of dehydration
  - Obtain vital signs and ECG

- Nursing diagnoses
  - Risk for imbalanced fluid volume: less than body requirements, related to fluid loss secondary to diarrhea
  - Risk for injury (falls), related to drowsiness secondary to drug therapy

- Planning—client will
  - Report relief of diarrhea
  - Demonstrate understanding of drug’s action
  - Immediately report effects
    - Persistent diarrhea, constipation
    - Abdominal pain, blood in stool
    - Confusion, dizziness, fever
Clients Receiving Antidiarrheal Therapy

• Implementation
  – Monitor frequency, volume, and consistency of stools
  – Minimize risk of dehydration and electrolyte imbalance
  – Prevent accidental overdosage
  – Monitor for dry mouth
  – Initiate safety measures to prevent falls
  – Monitor electrolyte levels

• Evaluation
  – Client reports relief of diarrhea
  – Client accurately states drug’s action and side effects
  – Client accurately states signs and symptoms to be reported

Laxatives and Cathartics

Table 41.1 Laxatives and Cathartics

Table 41.1b Laxatives and Cathartics

Antidiarrheals

Table 41.2 Antidiarrheals

Selected Antiemetics

Table 41.3 Selected Antiemetics
### Selected Antiemetics

#### Table 41.3b Selected Antiemetics

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<th>Route</th>
<th>Effect</th>
<th>Side Effects</th>
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#### Table 41.3c Selected Antiemetics

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