• Chapter 34
• Drugs Used to Treat Nausea and Vomiting
• Learning Objectives
• Compare the purposes of using antiemetic products
• State the therapeutic classes of antiemetics
• Discuss scheduling of antiemetics for maximum benefit
• Nausea and Vomiting
• Nausea: the sensation of abdominal discomfort that is intermittently accompanied by a desire to vomit
• Vomiting (emesis): the forceful expulsion of gastric contents up the esophagus and out of the mouth
• Regurgitation: the rising of gastric or esophageal contents to the pharynx as a result of stomach pressure
• Common Causes of Nausea and Vomiting
• Postoperative nausea and vomiting
• Motion sickness
• Pregnancy
  ■ *Hyperemesis gravidarum*: a condition in pregnancy in which starvation, dehydration, and acidosis are superimposed on the vomiting syndrome
• Common Causes of Nausea and Vomiting (cont’d)
• Psychogenic vomiting: self-induced or involuntary vomiting in response to threatening or distasteful situations
• **Chemotherapy-induced emesis (CIE)**
  - **Anticipatory nausea and vomiting:** triggered by sight and smell associated with treatment
  - **Acute CIE:** stimulated directly by chemotherapy 1 to 6 hours after treatment
  - **Delayed emesis:** occurs 24 to 120 hours after treatment; may be induced by metabolic by-products of chemotherapy

• Drug Therapy for Selected Causes of Nausea and Vomiting

• Postoperative nausea and vomiting (PONV)

• Antiemetics include:
  - Dopamine antagonists
  - Anticholinergic agents
  - Serotonin antagonists
  - H₂ antagonists (cimetidine, ranitidine)

• Nursing Process for Nausea and Vomiting

• Nausea and vomiting are associated with illnesses of the gastrointestinal tract and other body systems

• Often a side effect of medication and food intolerance

• Care must be individualized to the patient’s diagnosis

• Nursing Process for Nausea and Vomiting (cont’d)

• Assessment
  - Obtain history of symptoms, patient’s perception of precipitating factors, medications
  - Individualize assessment, monitoring vital signs, all four quadrants of the abdomen, hydration
  - Planning: schedule prescribed medicines, monitor oral hygiene, record intake and outputs, obtain orders for nutrition and further laboratory tests
Nursing Process for Nausea and Vomiting (cont’d)

Implementation

• Maintain hydration
  - Adults: discontinue solids, ingest clear fluids with gradual return to bland or normal diet
  - Children: discontinue formula, milk products, and solids, and offer fluids every 30 to 60 minutes

Learning Objectives

• Compare the purposes of using antiemetic products

Drug Therapy for Selected Causes of Nausea and Vomiting

• Motion sickness: most medications chemically related to antihistamines, probably because of anticholinergic properties

Psychogenic vomiting
  - Diagnosis made after all other causes eliminated
  - Metoclopramide or antianxiety drug may be prescribed with counseling

Drug Therapy for Selected Causes of Nausea and Vomiting (cont’d)

• Nausea and vomiting in pregnancy
  - Morning sickness controlled by diet
  - Antihistamines (diphenhydramine, dimenhydrinate, meclizine, cyclizine) recommended first
  - Phenothiazines (promethazine and prochlorperazine)
  - Metoclopramide effective in treating hyperemesis gravidarum
  - Ginger used in many cultures

Drug Therapy for Selected Causes of Nausea and Vomiting (cont’d)
Chemotherapy-induced nausea and vomiting: combination of drugs often used because emesis likely produced by more than one mechanism
- Ondansetron, dolasetron, or granisetron
- High doses of metoclopramide; dexamethasone; lorazepam and diphenhydramine often used
- Haloperidol may be substituted for metoclopramide

Should be treated prophylactically

Drug Therapy for Selected Causes of Nausea and Vomiting (cont’d)

Anticipatory nausea and vomiting: treatments include progressive muscle relaxation, mind diversion, hypnosis, self-hypnosis, and systematic desensitization

Delayed emesis: combination of prochlorperazine, lorazepam, and diphenhydramine given orally 1 hour before meals

Drug Class: Dopamine Antagonists

Actions: inhibit dopamine receptors that are part of the pathway to the vomiting center

Uses: treatment of mild to moderate nausea and vomiting associated with anesthesia, surgery, radiation therapy, and cancer chemotherapy

Drug Class: Serotonin Antagonists

Actions: block the serotonin 5-HT3 receptors located in the chemoreceptor trigger zone of the medulla and in specialized cells of the GI tract

Significantly reduce nausea and vomiting associated with cancer chemotherapy, radiation, and postoperative nausea and vomiting

Drug Class: Anticholinergic Agents

Actions: counterbalance the excessive amounts of acetylcholine thought to cause motion sickness

Uses: scopolamine and antihistamines used in the treatment of motion sickness; antihistamines used for nausea and vomiting associated with pregnancy
• Drug Class: Corticosteroids
  
  Actions: dexamethasone and methylprednisolone shown to be effective but the action is unknown
  
  Uses: a particular advantage is the lack of side effects; because fewer doses are administered, complications associated with long-term therapy do not arise

• Drug Class: Benzodiazepines
  
  Actions: combination of effects including sedation, reduction in anxiety, possible depression of the vomiting center, and an amnesic effect
  
  Uses: used clinically with a combination of other antiemetics to treat vomiting and nausea as well as anxiety associated with chemotherapy

• Drug Class: Cannabinoids
  
  Actions: act through several mechanisms to inhibit pathways to the vomiting center
  
  Uses: equally effective as prochlorperazine in patients receiving moderate emetogenic chemotherapy

• Drug Class: Neurokinin-1 Receptor Antagonists
  
  Actions: block the effects of substance P, a neuropeptide in the CNS, responsible for vomiting
  
  Uses: prevent acute and delayed chemotherapy-induced nausea and vomiting