

ease, helping the client follow the prescribed therapeutic regimen helps to promote healing and prevent complications.

- Diet therapy is of minor importance in prevention or treatment of peptic ulcer disease. Some physicians prescribe no dietary restrictions, whereas others suggest avoiding or minimizing highly spiced foods, gas-forming foods, and caffeine-containing beverages.
- With heartburn and esophagitis, helpful measures are those that prevent or decrease gastroesophageal reflux of gastric contents (eg, avoiding irritant, highly spiced, or fatty foods; eating small meals; not lying down for 1 to 2 hours after eating; elevating the head of the bed; and avoiding obesity, constipation, or other conditions that increase intra-abdominal pressure).

Evaluation

- Observe and interview regarding drug use.
- Observe and interview regarding relief of symptoms.
- Observe for signs and symptoms of complications.
- Observe and interview regarding adverse drug effects.

PRINCIPLES OF THERAPY

Drug Selection

All of the drugs used for acid-peptic disorders are effective for indicated uses; the choice of drugs may depend on etiology, acuity, severity of symptoms, cost, and convenience. General guidelines include the following:

- *Proton pump inhibitors* are the drugs of first choice in most situations. They heal gastric and duodenal ulcers more rapidly and may be more effective in erosive esophagitis, erosive gastritis, and Zollinger-Ellison syndrome than H_2 RAs. They are also effective in eradicating *H. pylori* infection when combined with two antibacterial drugs. Most PPIs are given orally only; pantoprazole (Protonix IV) is a parenteral formulation. PPIs are more expensive than H_2 RAs.
- *H. pylori* infection should be considered in most cases of peptic ulcer disease. If infection is confirmed by appropriate diagnostic tests, agents to eradicate the organisms should be drugs of first choice. The most recommended drug regimen is a combination of a PPI and two antibacterial drugs.
- H_2 RAs have been replaced as first-choice drugs by the PPIs for most indications, but are still widely used. Cimetidine may be less expensive but it may cause confusion and antiandrogenic effects. It also increases the risks of toxicity with several commonly used drugs. Compared with cimetidine, other H_2 RAs are more potent on a weight basis and have a longer duration of action, so they can be given in smaller, less frequent doses. In addition, they do not alter the hepatic metabolism of other drugs. Over-the-counter H_2 RAs are indicated for

the treatment of heartburn. In some cases, clients may depend on self-medication with over-the-counter drugs and delay seeking treatment for peptic ulcer disease or GERD. For prescription or nonprescription uses, cimetidine is preferably taken by clients who are taking no other medications.

- *Antacids* are often used as needed to relieve heartburn and abdominal discomfort. If used to treat acid-peptic disorders, they are more often used with other agents than alone and require a regular dosing schedule. The choice of antacid should be individualized to find a preparation that is acceptable to the client in terms of taste, dosage, and convenience of administration. Some guidelines include the following:
 1. Most commonly used antacids combine aluminum hydroxide and magnesium hydroxide. The combination decreases the adverse effects of diarrhea (with magnesium products) and constipation (with aluminum products). Calcium carbonate is effective in relieving heartburn, but it is infrequently used to treat peptic ulcers or GERD.
 2. Antacids may be used more often now that low doses (eg, 2 antacid tablets 4 times a day) have been shown to be effective in healing gastric and duodenal ulcers. All of the low-dose regimens contained aluminum, and the aluminum rather than acid neutralization may be the important therapeutic factor. Compared with other drugs for acid-peptic disorders, low-dose antacids are inexpensive and cause few adverse effects. In addition, tablets are as effective as liquids and usually more convenient to use.
 3. Antacids with magnesium are contraindicated in renal disease because hypermagnesemia may result; those with high sugar content are contraindicated in diabetes mellitus.
 4. Additional ingredients may be helpful to some clients. Simethicone has no effect on intragastric pH but may be useful in relieving flatulence or gastroesophageal reflux. Alginic acid may be useful in clients with daytime acid reflux and heartburn.
- *Sucralfate* must be taken before meals, and this is inconvenient for some clients.

Guidelines for Therapy With Proton Pump Inhibitors

1. Recommended doses of PPIs heal most gastric and duodenal ulcers in about 4 weeks. Large gastric ulcers may require 8 weeks.
2. The drugs may be used to maintain healing of gastric and duodenal ulcers and decrease risks of ulcer recurrence.
3. A PPI and two antimicrobial drugs is the most effective regimens for eradication of *H. pylori* organisms.
4. With GERD, higher doses or longer therapy may be needed for severe disease and esophagitis. Lower doses can maintain symptom relief and esophageal healing.