Gastroesophageal Reflux Disease

Description/Etiology
Gastroesophageal reflux disease (GERD), one of the most common gastrointestinal disorders, is defined as abnormal reflux of stomach contents into the esophagus. It occurs with the loss of the normal pressure gradient between the lower esophageal sphincter (LES) and the stomach. Pregnancy, ineffective peristalsis, scleroderma, delayed gastric emptying, and recumbency may also contribute to symptoms. First-line treatment includes lifestyle modifications and the initiation of antacids, proton pump inhibitors (PPIs), and/or acid reducers to neutralize acid (H\textsubscript{2} blockers). If symptoms persist after conservative treatment after beginning first line of treatment, the patient may need endoscopic evaluation and possible surgery.

Facts and Figures
GERD affects approximately 10–20% of adults in the United States. The prevalence of reflux symptoms increases approximately 5% each year and disproportionately affects persons who are obese (Levy et al., 2014; Kim et al., 2014). It is one of the costliest digestive diseases: more than $9 billion per year is spent on GERD in the United States (Levy et al., 2014; Serna-Gallegos et al., 2014). Between 10% and 40% of patients with GERD do not respond adequately to medical treatment and require surgical intervention to control symptoms (Reynolds et al., 2014).

Risk Factors
› Obesity
› Caffeine use
› Alcohol use
› Smoking
› Hiatal hernia
› Delayed gastric emptying

Signs and Symptoms/Clinical Presentation
Symptoms include heartburn and/or regurgitation and epigastric pain. Some patients may experience dysphagia. Associated conditions include aspiration, chronic cough, laryngitis, sinusitis, otitis media, and halitosis. Potentially severe associated conditions include Barrett esophagus, peptic stricture, and esophageal adenocarcinoma.

Nutritional Assessment
› Patient Medical History
• Ask patient and/or the patient’s family about a family history of GERD or esophageal adenocarcinoma
• Ask patient to describe dominant digestive symptoms and when they occur
• Determine if the patient is currently using any treatments to relieve symptoms
› Patient Dietary History
• Obtain a 3-day diet recall (i.e., patient/patient’s family recall of all foods and beverages consumed in a 3-day period) that includes 1 weekend day
Determine if patient is consuming foods that typically contribute to reflux symptoms (See What Do I Need to Tell the Patient/Patient's Family?)

**Anthropometric Data**
- Calculate the patient’s BMI by dividing body weight (kilograms) by height (meters squared); or 703 multiplied by weight (pounds) and divided by height (inches squared)
- Underweight: < 18.5; **normal:** 18.5–24.9; overweight: 25–29.9; obese: > 30

**Laboratory and Diagnostic Tests of Particular Interest to the Nutritionist**
- Complete blood count (CBC) may show anemia
- B12 levels of patients on PPI therapy may show poor absorption

**Other Diagnostic Tests/Studies**
- 24-hour pH monitoring that records number of reflux episodes
- Endoscopy to check for visible abnormalities and to biopsy tissue

**Treatment Goals**
- The main goal of lifestyle modifications and pharmacological treatment is to reduce GERD symptoms, avoid or treat esophagitis, and treat GERD-associated conditions. Therapy should be tailored to each patient for increased likelihood of success
  - Encourage the patient to take medications as prescribed
  - Encourage the patient to achieve and maintain a healthy weight, as this is the single most important lifestyle measure to reduce symptoms
- Promote overall wellness to reduce risk of long-term complications of GERD or associated conditions

**Food for Thought**
- In a large cohort of Iranian adults, researchers found an inverse association between fruit and fruit and vegetable intake and GERD. Persons who had high intakes of fruit and fruit and vegetables had lower risk of developing GERD in comparison with those who consumed less fruit or fruits and vegetables (Keshteli et al., 2017)
- Patients with GERD may have intolerances to a number of food items. In a study assessing patterns of food intolerances, researchers found that food items such as lettuce, brewer’s yeast, tuna, rice, sole, and asparagus that were not previously associated with gastroesophageal reflux symptoms were not well-tolerated by persons with GERD (Caselli et al., 2017)
- Investigators found that meal composition impacts esophageal and intragastric pH in patients with GERD. High-fat meals especially appear to increase esophageal acid exposure in patients with reflux esophagitis and non-erosive reflux disease (Fan et al., 2018). Meals containing large amounts of carbohydrate also appear to lead to more acid reflux symptoms by causing more acid reflux in the lower portion of the esophagus (Wu et al., 2018). Total protein and individual meals also seem to have an impact on symptoms in patients with GERD. In a case-control study, researchers found that the amount of fat consumed at lunch had a positive association with GERD, whereas the amount of protein consumed in evening snacks was inversely associated with GERD (Ebrahimi-Mameghani et al., 2017)
- A plant-based diet combined with alkaline water appears to be similar in efficacy to the traditional approach of using a PPI and standard reflux protocol for treatment of laryngopharyngeal reflux (LPR). Researchers suggest that in patients with LPR, a plant-based diet should be attempted prior to pharmacological intervention (Zalvan et al., 2017). However, authors of a systematic review of diet modification for LPR found that the studies available were insufficient to make recommendations (Min et al., 2019)
- In 2012, the U.S. Food and Drug Administration approved laparoscopic magnetic sphincter augmentation of the gastroesophageal junction with the LINX RMS to treat GERD. This is an alternative to fundoplication. Fundoplication is a gastrointestinal surgery used to treat GERD and hiatal hernia. The procedure involves wrapping the upper portion of the stomach around the lower end of the esophagus that allows the lower portion of the esophagus to pass through the stomach muscle. The LINX RMS is not recommended for patients with large hiatal hernias, motility disorders, esophageal stricture, or anatomic abnormality (Reynolds et al., 2014)

**Red Flags**
The following may be signs of a more serious condition:
- Unintentional weight loss
- Progressive dysphagia
- GI bleeding
What Do I Need to Tell the Patient/Patient’s Family?

› Educate the patient/patient’s family on the following:
  • Avoid alcohol and smoking
  • Decrease caffeine
  • Avoid lying down for at least 2 hours after a meal
  • Elevate the head of the bed if experiencing nocturnal symptoms
  • Achieve a healthy weight
  • Eat smaller, more frequent meals
  • Reduce or eliminate acidic foods (e.g., citrus, tomato, coffee, spicy foods)
  • Reduce or eliminate foods that contribute to reflux (e.g., fatty foods, chocolate, peppermint)

References