

**PHB**



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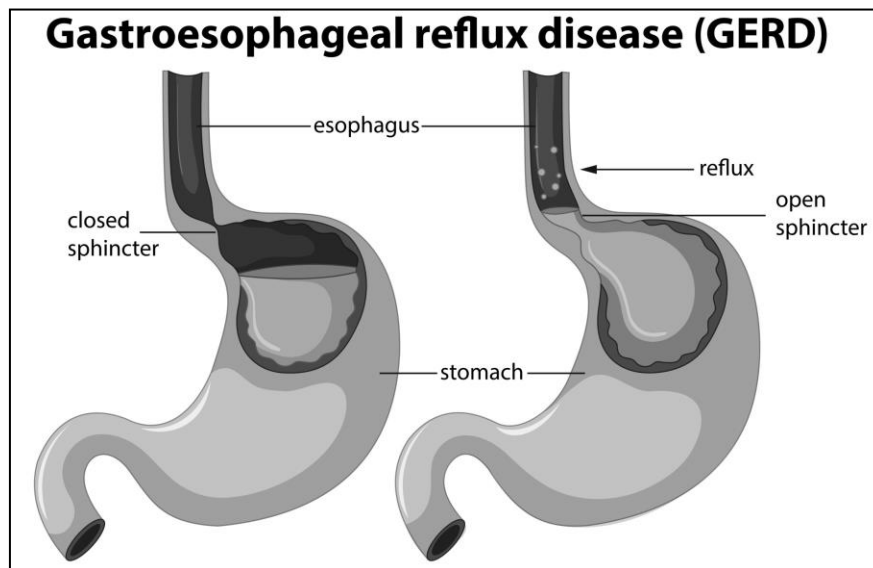
## Chapter– 6 Gastro-Intestinal Disorders

### Topic: GASTRO-OESOPHAGEAL REFLUX DISEASE

#### 6.1

#### Introduction

Gastroesophageal reflux disease (GERD) is a chronic digestive disorder characterized by the reflux of stomach contents into the esophagus, leading to symptoms and complications.



#### 6.2

#### Etiopathogenesis

The pathogenesis of gastroesophageal reflux disease (GERD) is complex and involves changes in reflux exposure, epithelial resistance, and visceral sensitivity. The gastric refluxate is a noxious material that injures the esophagus and elicits symptoms.

#### 6.3

#### Types

1. **Non-Erosive Reflux Disease (NERD):** Characterized by typical GERD symptoms without evidence of esophageal mucosal damage on endoscopy.

2. **Erosive Esophagitis:** Involves inflammation and erosion of the esophageal lining due to recurrent exposure to gastric acid.
3. **Barrett's Esophagus:** A condition in which the normal squamous epithelium of the esophagus is replaced by columnar epithelium, increasing the risk of esophageal adenocarcinoma.

**6.4****Symptoms**

The symptoms commonly includes:

- A burning sensation in the chest, often occurring after meals or when lying down.
- The sensation of acid or food coming back up into the throat or mouth.
- Difficulty swallowing, especially with solid foods.
- May mimic heart-related chest pain (angina), but typically does not worsen with physical activity.
- Changes in voice quality due to irritation of the vocal cords by gastric acid.
- Especially at night or upon waking, often due to acid reflux irritating the airways.
- Inflammation of the larynx, leading to a sore throat and voice changes.

**6.5****Diagnosis**

Diagnostic procedures may include:

- Upper Endoscopy, allows visualization of the esophagus, stomach, and duodenum to assess for erosive esophagitis.
- Esophageal pH monitoring, measures the frequency and duration of acid reflux episodes over a period of time.
- Esophageal manometry, assesses esophageal motility and function, particularly in patients with dysphagia.

**6.6****Pharmacological managements****1. Medications:**

- **Proton Pump Inhibitors (PPIs): e.g.** Omeprazole, Lansoprazole, and Esomeprazole; reduce gastric acid production and are the mainstay of treatment for GERD.
  - **H<sub>2</sub> Receptor Antagonists: e.g.** Ranitidine, Famotidine, and Cimetidine; block histamine receptors on parietal cells, reducing acid secretion.
  - **Antacids: e.g.** Calcium carbonate, Magnesium hydroxide and Aluminum hydroxide; neutralize gastric acid and provide temporary relief from heartburn symptoms.
- 2. Surgery:** In severe cases of GERD that do not respond to medical therapy, surgical interventions such as fundoplication may be considered to strengthen the lower esophageal sphincter and prevent reflux.
- 3. Endoscopic Therapy:** Options such as radiofrequency ablation (Stretta procedure) or transoral incisionless fundoplication (TIF) may be offered as minimally invasive alternatives to surgery.

**6.7****Non - Pharmacological managements**

Non-pharmacological interventions for migraine may include:

- **Lifestyle Modifications:** Dietary changes (e.g., avoiding trigger foods, eating smaller meals), weight loss, elevating the head of the bed, and avoiding lying down after meals can help reduce reflux symptoms.

**6.8****Complications**

Complications of migraine may include:

- Inflammation and erosion of the esophageal lining, leading to pain, discomfort, and potential bleeding.
- Narrowing of the esophagus due to scarring and fibrosis from chronic inflammation.
- A precancerous condition that increases the risk of developing esophageal adenocarcinoma.
- Chronic aspiration of gastric contents can lead to respiratory issues such as asthma, bronchitis, and pneumonia.
- Acid reflux can erode tooth enamel, leading to dental erosion, cavities, and other oral health issues.

## Practice Questions

### MULTIPLE CHOICE QUESTIONS

1. Gastroesophageal reflux disease (GERD) is characterized by:
  - A) Inflammation of the colon
  - B) Damage to the lining of the stomach
  - C) Backflow of stomach acid into the esophagus
  - D) Blockage of the bile duct
2. Which of the following is a common symptom of GERD?
  - A) Constipation
  - B) Dysuria
  - C) Heartburn
  - D) Shortness of breath
3. The lower esophageal sphincter (LES) plays a key role in preventing GERD by:
  - A) Relaxing during swallowing to allow food to enter the stomach
  - B) Contracting to prevent stomach acid from entering the esophagus
  - C) Regulating the production of gastric acid
  - D) Secreting mucus to protect the esophageal lining
4. A diagnostic test commonly used to assess the severity of GERD and detect complications such as esophageal erosion is:
  - A) Colonoscopy
  - B) Barium swallow test
  - C) Upper endoscopy (esophagogastroduodenoscopy or EGD)
  - D) Magnetic resonance imaging (MRI)
5. Lifestyle modifications that may help manage GERD include:
  - A) Eating large meals before bedtime
  - B) Smoking cigarettes
  - C) Elevating the head of the bed while sleeping
  - D) Excessive consumption of spicy foods

6. Proton pump inhibitors (PPIs) are a class of medications commonly used to treat GERD by:
- A) Neutralizing stomach acid
  - B) Reducing the production of gastric acid
  - C) Increasing the motility of the gastrointestinal tract
  - D) Strengthening the lower esophageal sphincter
7. Which of the following dietary factors is commonly associated with exacerbating GERD symptoms?
- A) High-fiber foods
  - B) Carbonated beverages
  - C) Lean protein sources
  - D) Whole grains
8. Barrett's esophagus is a complication of GERD characterized by:
- A) Ulceration of the esophageal lining
  - B) Narrowing of the esophagus
  - C) Metaplastic changes in the esophageal lining
  - D) Diverticula formation in the esophagus
9. GERD-related cough is often characterized by:
- A) Dry, non-productive cough
  - B) Productive cough with greenish sputum
  - C) Wheezing and shortness of breath
  - D) Hemoptysis (coughing up blood)
10. Surgical intervention may be considered for GERD patients who:
- A) Have mild symptoms controlled with medications
  - B) Experience complications such as Barrett's esophagus or strictures
  - C) Prefer lifestyle modifications over pharmacological therapy
  - D) Are pregnant and unable to take medications

**FILL IN THE BLANKS**

1. GERD is a chronic.....condition. (***Digestive***)
2. Persistent.....in the throat is a common symptom of GERD. (***Hoarseness***)
3. Over-the-counter medications like.....can provide relief for mild GERD. (***Antacids***)

4. ....is a diagnostic test for GERD that measures acid levels in the esophagus. (**pH monitoring**)
5. Untreated GERD can increase the risk of..... (**Esophageal cancer**)

### SHORT ANSWER TYPE QUESTIONS

1. Define gastroesophageal reflux disease (GERD).
2. What are the typical symptoms of GERD?
3. Discuss the role of the lower esophageal sphincter (LES) in the pathophysiology of GERD.
4. How are proton pump inhibitors (PPIs) used in the management of GERD?
5. Mention some potential complications of untreated GERD.

### LONG ANSWER TYPE QUESTIONS

1. Explain the pathophysiology of GERD.
2. Describe the typical symptoms experienced by individuals with GERD.
3. Give the outline the diagnostic approach to GERD.
4. Explore the various treatment options available for GERD.
5. Discuss the potential long-term complications of untreated GERD and the importance of timely management.

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#### MCQ Answer

1.	C	3.	B	5.	C	7.	B	9.	A
2.	C	4.	C	6.	B	8.	C	10.	B

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