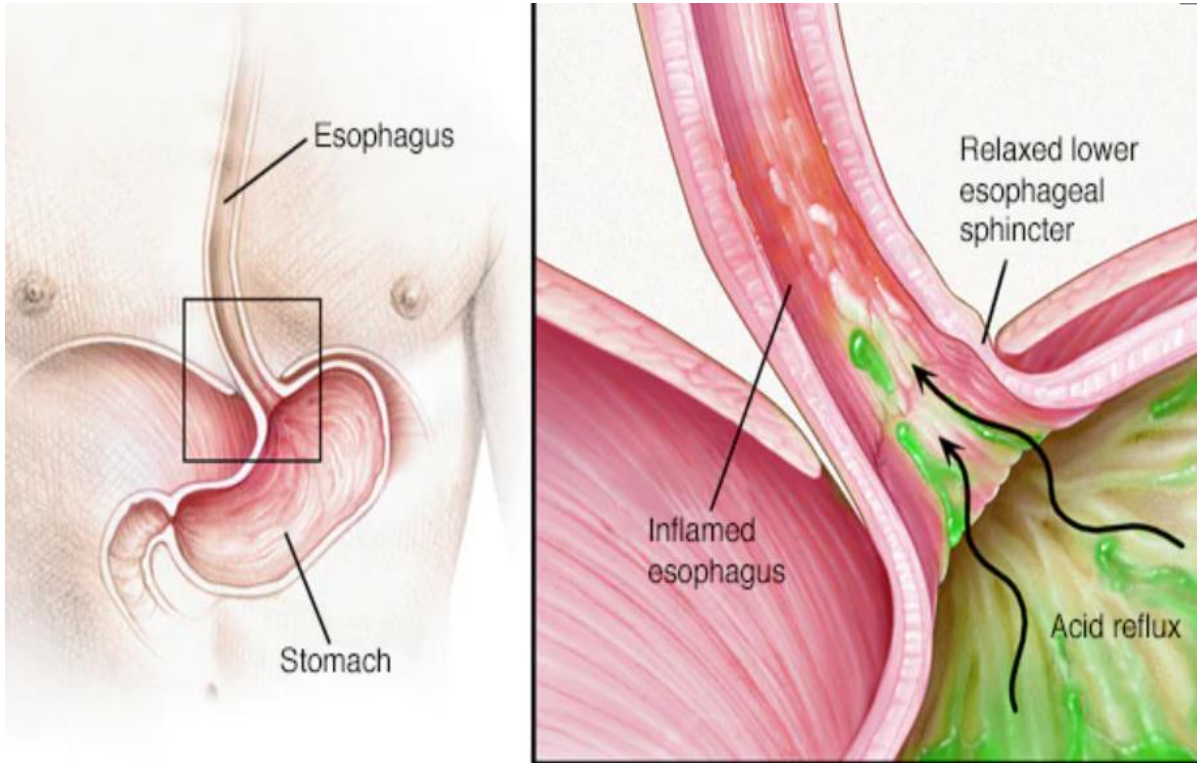
Gastroesophageal reflux disease (GERD)



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Mostafa Khomeini hospital.Ilam , 24 june 2021

- Gastroesophageal reflux disease (GERD) is notable for its high prevalence, variety of clinical presentations, under-recognized morbidity, and substantial economic consequences.

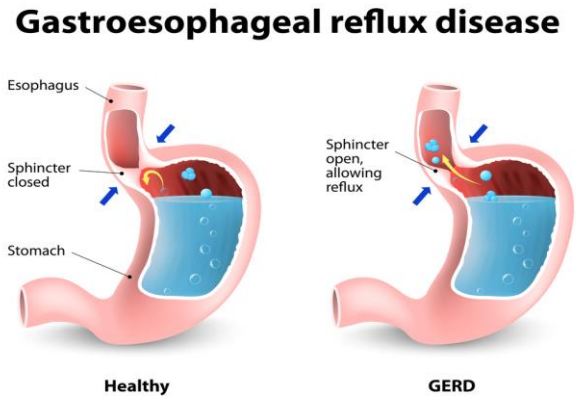
EPIDEMIOLOGY

- In a systematic review of 15 epidemiological studies, the prevalence of gastroesophageal reflux disease (GERD) was found to be 10 to 20 percent in the Western world and less than 5 percent in Asia.

- There are limitations in the epidemiologic estimates of the prevalence of GERD, as they are based upon the assumption that heartburn and/or regurgitation are the only indicators of the disease.

Pathophysiology

- Some degree of reflux is physiologic .
- Physiologic reflux episodes typically occur postprandially, are short-lived, asymptomatic, and rarely occur during sleep.



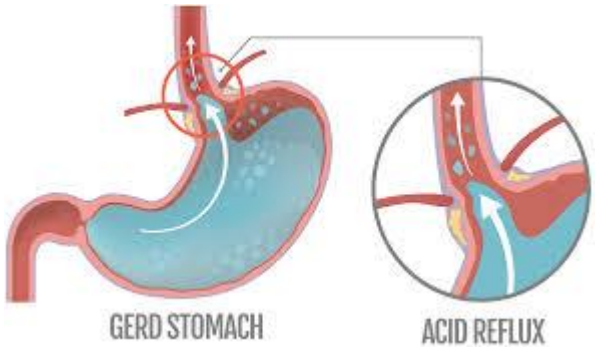
- Pathologic reflux is associated with symptoms or mucosal injury and often occurs nocturnally.

- In general, the term gastroesophageal reflux disease (GERD) is applied to patients with symptom suggestive of reflux or complications thereof, but not necessarily with, esophageal inflammation.

- Reflux esophagitis describes a subset of patients with GERD who have endoscopic evidence of esophageal inflammation.

MECHANISMS OF GASTROESOPHAGEAL REFLUX DISEASE

- The development of gastroesophageal reflux disease (GERD) reflects the balance between injurious or symptom-eliciting factors (reflux events, acidity of refluxate, esophageal hypersensitivity) and defensive factors (esophageal acid clearance, mucosal integrity).



- The extent of symptoms and of mucosal injury is proportional to the frequency of reflux events, the duration of mucosal acidifcation, and the caustic potency of refluxed fluid.

- The three dominant pathophysiologic mechanisms causing gastroesophageal junction incompetence are:

1) Transient lower esophageal sphincter relaxations (TLESRs)

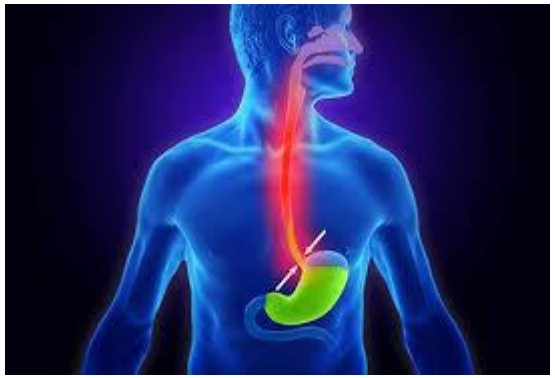
2) Hypotensive lower esophageal sphincter (LES)

3) Anatomic disruption of the gastroesophageal junction, often associated with a hiatal hernia

Clinical manifestations and diagnosis of gastroesophageal reflux in adults

TERMINOLOGY

- Gastroesophageal reflux disease (GERD) is a condition that develops when the reflux of stomach contents causes troublesome symptoms and/or complications.



- GERD is classified based on the appearance of the esophageal mucosa on upper endoscopy into the following:

1) *Erosive esophagitis* :

Erosive esophagitis is characterized by endoscopically visible breaks in the distal esophageal mucosa with or without troublesome symptoms of GERD.

2) *Nonerosive reflux disease* :

Nonerosive reflux disease or endoscopy negative reflux disease is characterized by the presence of troublesome symptoms of GERD without visible esophageal mucosal injury.

- Classic symptoms of gastroesophageal reflux disease (GERD) are heartburn (pyrosis) and regurgitation.

- Heartburn is typically described as a burning sensation in the retrosternal area, most commonly experienced in the postprandial period .

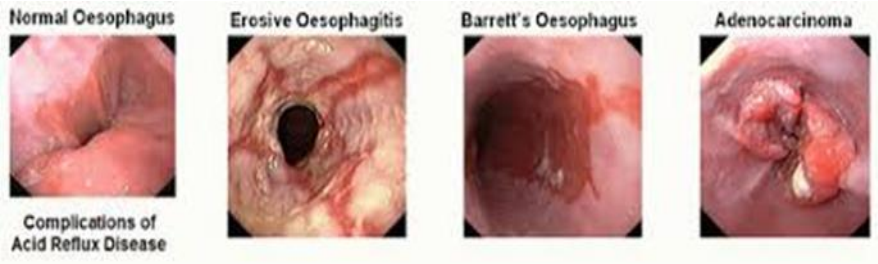
- Regurgitation is defined as the perception of flow of refluxed gastric content into the mouth or hypopharynx.
- Patients typically regurgitate acidic material mixed with small amounts of undigested food.

- Other symptoms of GERD include

- dysphagia
- chest pain
- water brash
- globus sensation
- odynophagia
- extraesophageal symptoms (eg, chronic cough, hoarseness, wheezing), and infrequently, nausea.

Complications

- Complications from GERD can arise even in patients who lack typical esophageal symptoms.



- These complications may be:

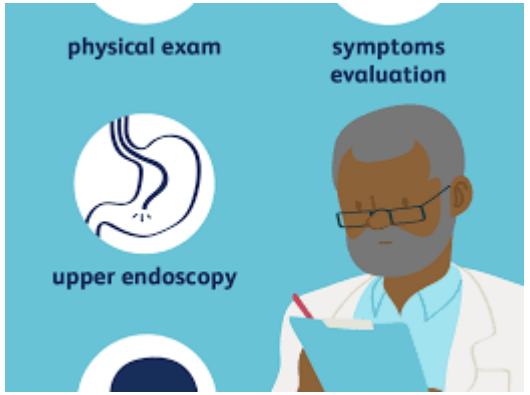
- *esophageal* (eg, Barrett's esophagus, esophageal stricture, esophageal adenocarcinoma)

- *extra-esophageal* (eg, chronic laryngitis, exacerbation of asthma)

DIAGNOSIS

Patients with classic symptoms

- The diagnosis of gastroesophageal reflux disease (GERD) can often be based on clinical symptoms alone in patients with classic symptoms such as heartburn and/or regurgitation.



- However, patients may require additional evaluation if they have alarm features, risk factors for Barrett's esophagus, or abnormal gastrointestinal imaging performed for evaluation of their symptoms.

- Although 40 to 90 percent of patients with symptoms suggestive of GERD have a symptomatic response to proton pump inhibitors (PPIs), a response to antisecretory therapy is not a diagnostic criterion for GERD.

Patients without classic symptoms

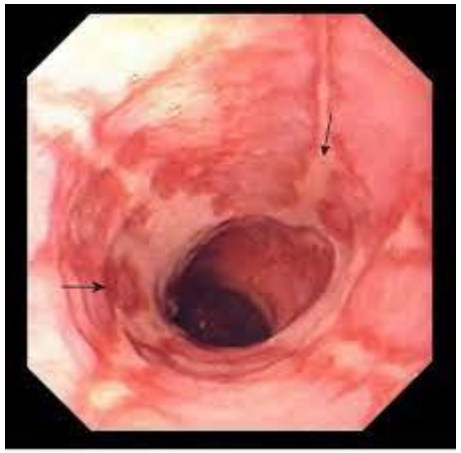
- Other symptoms (eg, chest pain, globus sensation, chronic cough, hoarseness, wheezing, and nausea) may be seen in the setting of GERD, but are not suficient to make a clinical diagnosis of GERD in the absence of classic symptoms of heartburn and regurgitation.

- Other disorders need to be excluded before attributing the symptoms to GERD.
- As an example, unexplained chest pain should be evaluated with an electrocardiogram and exercise stress test prior to a gastrointestinal evaluation.

Upper gastrointestinal endoscopy

Indications

- Upper endoscopy is indicated in patients with suspected GERD to evaluate alarm features or abnormal imaging if not performed within the last three months.
- Upper endoscopy should also be performed to screen for Barrett's esophagus in patients with risk factors.

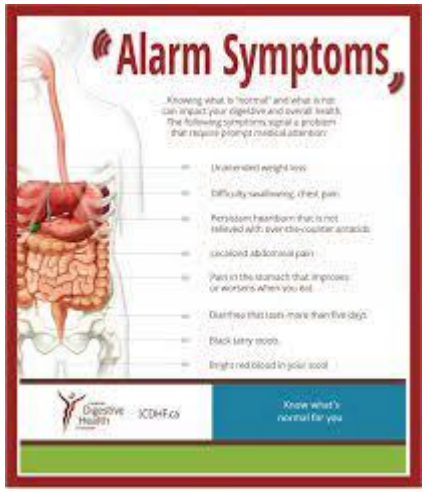


- On upper endoscopy, biopsies should target any areas of suspected metaplasia, dysplasia, or, in the absence of visual abnormalities, normal mucosa to evaluate for eosinophilic esophagitis.

- Upper endoscopy can also rule out other etiologies in patients with GERD symptoms that are refractory to a trial of proton pump inhibitor therapy.

- ***Alarm features that are suggestive of a gastrointestinal malignancy include***:

- New onset of dyspepsia in patient ≥60 years
- Evidence of gastrointestinal bleeding (hematemesis, melena, Hematochezia, occult blood in stool)
- Iron deficiency anemia
- Anorexia
- Unexplained weight loss
- Dysphagia
- Odynophagia
- Persistent vomiting
- Gastrointestinal cancer in a first-degree relative



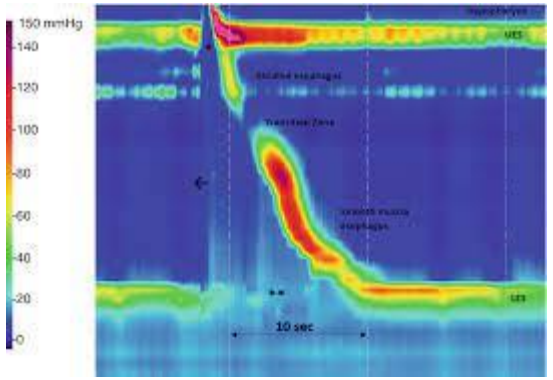
- ***Risk factors for Barrett's esophagus include***:

- Duration of GERD of at least 5 to 10 years
- Age 50 years or older
- Male sex
- White race
- Hiatal hernia
- Obesity
- Nocturnal reflux
- Tobacco use (past or current)
- First-degree relative with Barrett's esophagus and/or adenocarcinoma

- Screening for Barrett’s esophagus is typically recommended for patients with multiple risk factors (one of which must be duration of GERD of at least 5 to 10 years).

Esophageal manometry

- In patients with suspected GERD with chest pain and/or dysphagia and a normal upper endoscopy, an esophageal manometry should be performed to exclude an esophageal motility disorder.



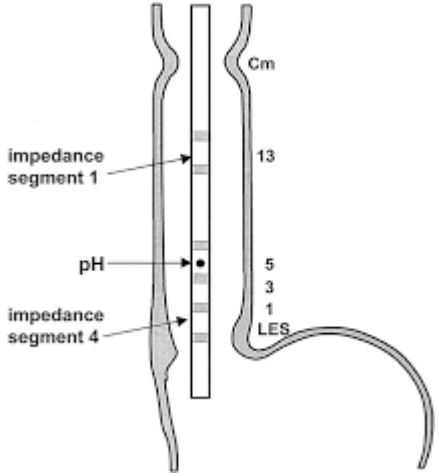
- Manometry is useful in ensuring that ambulatory pH probes are placed correctly but cannot diagnose GERD.
- It is also used to evaluate peristaltic function before antireflux surgery for GERD.

Ambulatory esophageal pH monitoring

- Ambulatory pH monitoring is also used to confirm the diagnosis of GERD:

- In those with persistent symptoms (whether typical or atypical, particularly if a trial of twice-daily PPI has failed)

- To monitor the adequacy of treatment in those with continued symptoms



Medical management of gastroesophageal reflux disease in adults

PRETREATMENT EVALUATION

Assessment of clinical severity

- The frequency and severity of symptoms can guide the management of GERD.

- Symptoms are considered mild or moderate/severe based on whether they impair quality of life.
- Symptoms may be intermittent (less than two episodes per week) or frequent (two or more episodes per week).

INITIAL MANAGEMENT

- In patients with mild and intermittent symptoms (fewer than two episodes per week) and no evidence of erosive esophagitis, we suggest step-up therapy for GERD.
- The step-up approach involves incrementally increasing the potency of therapy until symptom control is achieved.

- In patients who are naïve to treatment, we initially recommend lifestyle and dietary modification and, as needed, low-dose histamine 2 receptor antagonists (H2RAs).

Initial treatment of gastroesophageal reflux disease

Medication	Low dose (adult, oral)	Standard dose (adult, oral)
Histamine 2 receptor antagonists*		
Famotidine	10 mg twice daily ¶	20 mg twice daily Δ
Nizatidine	75 mg twice daily ¶	150 mg twice daily
Cimetidine	200 mg twice daily ¶	400 mg twice daily Δ
Proton pump inhibitors		
Omeprazole	10 mg daily ◊	20 mg daily ¶
Lansoprazole	15 mg daily ¶	30 mg daily
Esomeprazole	10 mg daily ◊	20 mg daily ¶
Pantoprazole	20 mg daily ¶	40 mg daily
Dexlansoprazole	Not available	30 mg daily
Rabeprazole	10 mg daily ◊	20 mg daily

- We suggest concomitant antacids and/or sodium alginate as needed if symptoms occur less than once a week.
- For patients with continued symptoms despite these measures, we increase the dose of H2RAs to standard dose, twice daily for a minimum of two weeks.

- If symptoms of GERD persist, we discontinue H2RAs and initiate once-daily proton pump inhibitors (PPIs) at a low dose and then increase to standard doses if required.
- We make incremental changes in therapy at four to eight-week intervals.
- Once symptoms are controlled, treatment should be continued for at least eight weeks.

- In patients with:

- Erosive esophagitis

- Frequent symptoms (two or more episodes per week), and/or severe symptoms that impair quality of life

we use step-down therapy in order to optimize symptom relief.

- The step-down approach starts with potent antisecretory agents and then involves incrementally, decreasing the potency of therapy until breakthrough symptoms define the treatment necessary for symptom control.
- We begin with standard-dose PPI once daily for eight weeks in addition to lifestyle and dietary modification

- We subsequently decrease acid suppression to low-dose PPIs and then to H2RAs if patients have mild or intermittent symptoms.

- We discontinue acid suppression in all asymptomatic patients with the exception of patients with:

- severe erosive esophagitis
- Barrett's esophagus

in whom we suggest maintenance PPI therapy.

Lifestyle and dietary modification

- Although several lifestyle and dietary modifications have been used in clinical practice, a systematic review of 16 randomized trials that evaluated the impact of these measures on GERD concluded that only weight loss and elevation of the head end of the bed improved esophageal pH-metry and/or GERD symptoms.

• We suggest the following lifestyle and dietary measures:

- Weight loss for patients with GERD who are overweight or have had recent weight gain.

- Elevation of the head of the bed in individuals with nocturnal or laryngeal symptoms (eg, cough, hoarseness, throat clearing).

- We also suggest a corollary to this recommendation: refraining from assuming a supine position after meals and avoidance of meals two to three hours before bedtime.

- We suggest selective elimination of dietary triggers (cafeine, chocolate, spicy foods, food with high fat content, carbonated beverages, and peppermint) in patients who note correlation with GERD symptoms and an improvement in symptoms with elimination.

Other measures that have a physiologic basis but have not consistently been demonstrated to improve reflux symptoms include:

- Avoidance of tight-fitting garments to prevent increasing intragastric pressure and the gastroesophageal pressure gradient.
- Promotion of salivation through oral lozenges/chewing gum to neutralize refuxed acid and increase the rate of esophageal acid clearance.

- Avoidance of tobacco and alcohol, as both reduce lower esophageal sphincter pressure and smoking also diminishes salivation.
- Abdominal breathing exercises to strengthen the antireflux barrier of the lower esophageal sphincter.

Repeat endoscopy for severe erosive esophagitis

- Patients with severe erosive esophagitis (Los Angeles classification Grade C and D) on initial endoscopy should undergo a follow-up endoscopy after a two-month course of PPI therapy to assess healing and rule out Barrett's esophagus.

Duration of acid suppression

- Patients without severe erosive esophagitis and Barrett's esophagus PPIs should be prescribed at the lowest dose and for the shortest duration appropriate to the condition being treated.

- Patients with severe erosive esophagitis or Barrett's esophagus require maintenance acid suppression with a PPI at standard dose as they are likely to have recurrent symptoms and complications if acid suppression is decreased or discontinued.

- In patients on PPIs for longer than six months, we taper the PPI dose before discontinuing it and use H2RAs for mild or intermittent symptoms.
- We discontinue acid suppression completely in all asymptomatic patients.

Recurrent symptoms

- Approximately two-thirds of patients with nonerosive reflux disease relapse when acid suppression is discontinued.

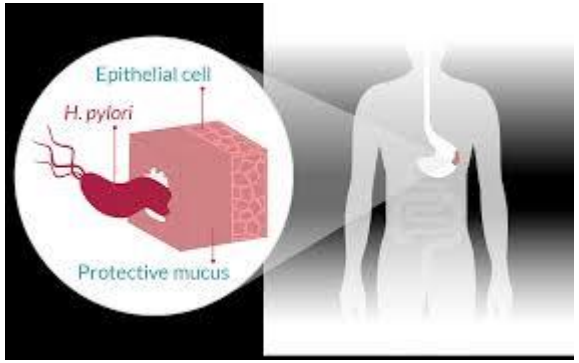
- In patients with recurrent symptoms ≥3 months after discontinuing acid suppression, we use repeated eight-week courses of acid suppressive therapy.

- In patients with recurrent symptoms <3 months of discontinuing acid suppression who have not previously undergone an upper endoscopy, we perform an upper endoscopy to rule out other etiologies and complications of GERD.

- Patients with recurrent symptoms within three months of discontinuing acid suppression require long-term maintenance therapy with a PPI for acid suppression.
- However, PPI therapy should be used at the lowest effective dose necessary to control GERD symptoms.

No role for empiric eradication of H. pylori…

- Routine screening for H. pylori infection and empiric eradication of H. pylori are not recommended in patients with GERD.
- However, if H. pylori is diagnosed in the setting of GERD, eradication of H. pylori has been associated with an improvement of symptoms in patients with antral-predominant gastritis.

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