GASTROESOPHAGEAL REFLUX DISEASE IN ADULTS

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Clinical manifestations and diagnosis of gastroesophageal re!ux in adults

- 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: Erosive esophagitis, Nonerosive reflux disease.

CLINICAL FEATURES

- Classic symptoms of gastroesophageal reflux disease (GERD) are heartburn (pyrosis) and regurgitation.
- Double contrast barium swallow examination is of limited diagnostic utility in patients with GERD.
- 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) or 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.
- 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 sufficient 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.

EVALUATION IN SELECTED PATIENTS

- **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.
- 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

- 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).
- Risk factors for Barrett’s esophagus include:
- Duration 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

Endoscopic findings

- Among untreated GERD patients, approximately 30 percent will have endoscopic esophagitis. The severity and duration of symptoms correlate poorly with the severity of esophagitis.

Esophageal manometry

- In patients with suspected GERD with chest pain and/or dysphagia and a normal upper endoscopy
- 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 anti reflux 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) or to monitor the adequacy of treatment in those with continued symptoms.
- Esophageal pH monitoring with impedance is preferred to wired or wireless pH studies and the traditional pH probe as it has the advantage of detecting weakly acid reflux in addition to acid reflux.

DIFFERENTIAL DIAGNOSIS

- infectious esophagitis, pill esophagitis, and eosinophilic esophagitis. Other causes of dysphagia include esophageal rings/webs, and impaired peristalsis due to an esophageal motility disorder.
- Frequent heartburn may also be due to reflux hypersensitivity or functional heartburn.

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).

Are there indications for upper endoscopy?

- Upper endoscopy is not required in the presence of typical GERD symptoms of heartburn or regurgitation.
- We recommend an upper endoscopy if the diagnosis of GERD is unclear and 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.

INITIAL MANAGEMENT

Overall approach

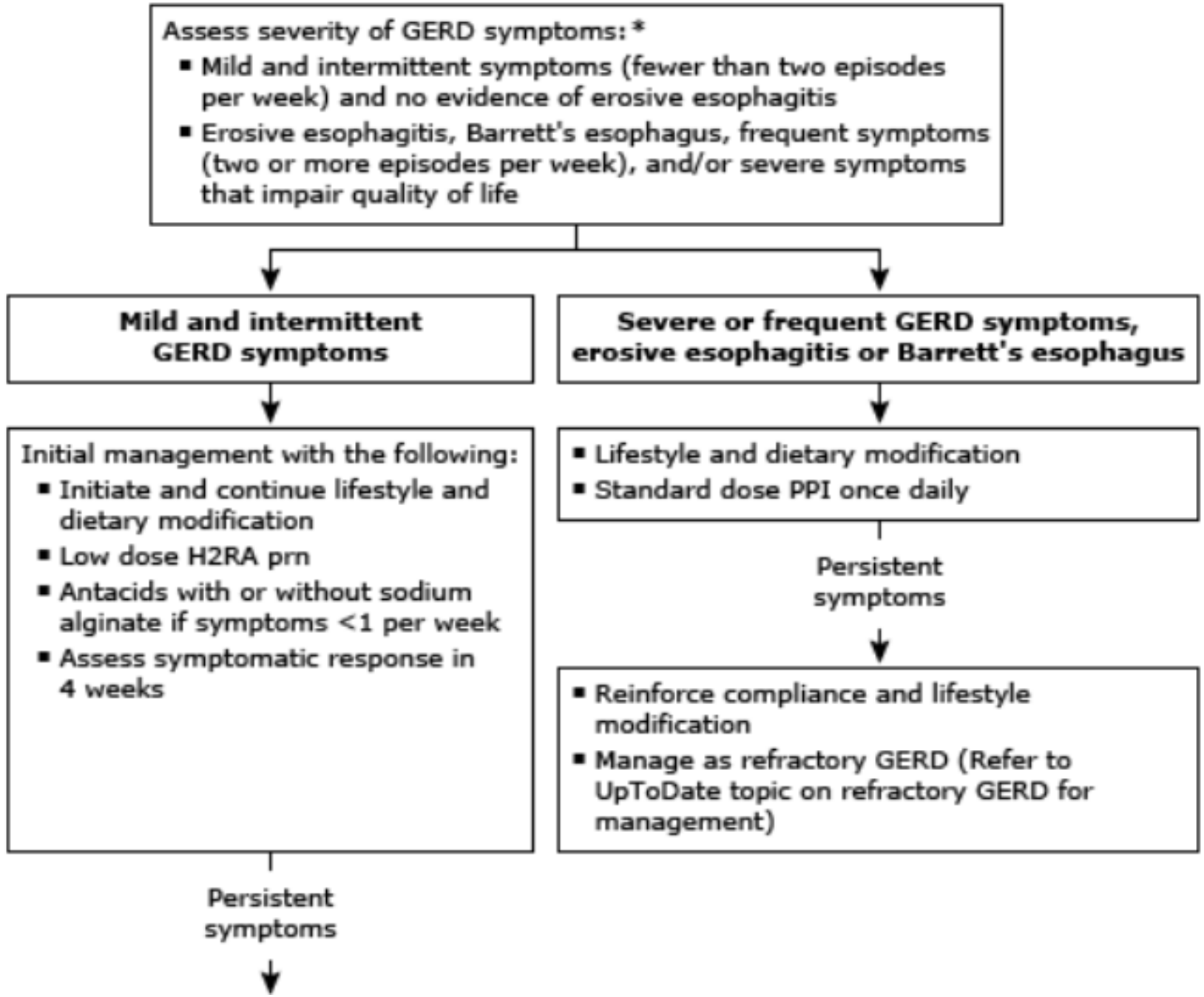
- In patients with mild and intermittent symptoms (fewer than two episodes per week) and no evidence of erosive esophagitis, we suggest step-up therapy for GERD.
- In patients who are naïve to treatment, we initially recommend lifestyle and dietary modification and, as needed, low-dose histamine 2 receptor antagonists (H2RAs). 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.

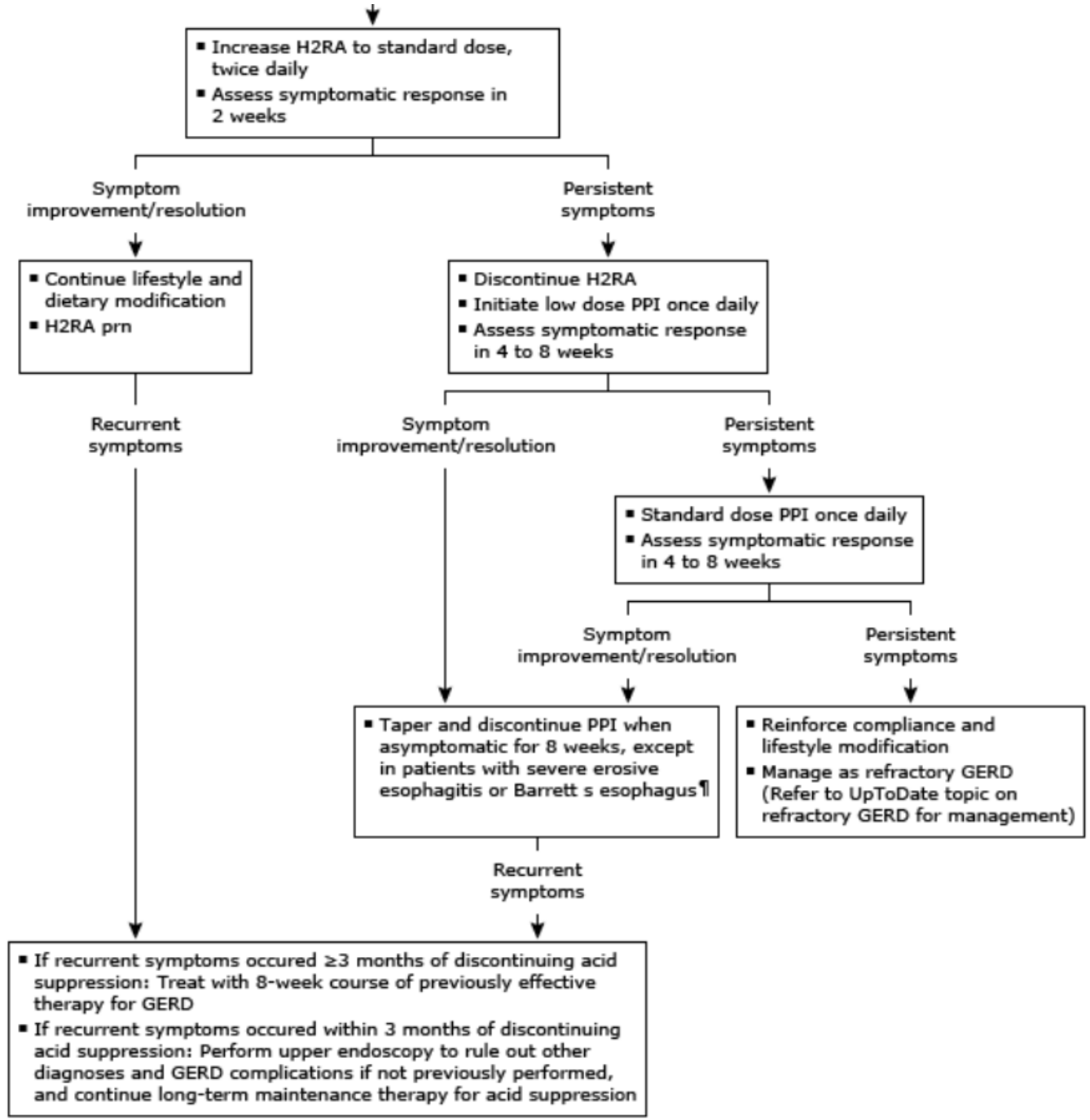
- If symptoms of GERD persist, we discontinue H2RAs and initiate once-daily proton pump inhibitors (PPIs) at a low dose and then increase to standard doses if required.
- We make incremental changes in therapy at four to eight-week intervals.
- Once symptoms are controlled, treatment should be continued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

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

- 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.
- 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 or Barrett’s esophagus, in whom we suggest maintenance PPI therapy.


Assess severity of GERD symptoms:*
Mild and intermittent symptoms (fewer than two episodes per week) and no evidence of erosive esophagitis
Erosive esophagitis, Barrett's esophagus, frequent symptoms (two or more episodes per week), and/or severe symptoms that impair quality of life
Mild and intermittent GERD symptoms
Severe or frequent GERD symptoms, erosive esophagitis or Barrett's esophagus
Initial management with the following:
Initiate and continue lifestyle and dietary modification
Low dose H2RA prn
Antacids with or without sodium alginate if symptoms <1 per week
Assess symptomatic response in 4 weeks
Lifestyle and dietary modification
Standard dose PPI once daily
Persistent symptoms
Reinforce compliance and lifestyle modification
Manage as refractory GERD (Refer to UpToDate topic on refractory GERD for management)
Persistent symptoms


Increase H2RA to standard dose, twice daily
Assess symptomatic response in 2 weeks
Symptom improvement/resolution
Persistent symptoms
Continue lifestyle and dietary modification
H2RA prn
Discontinue H2RA
Initiate low dose PPI once daily
Assess symptomatic response in 4 to 8 weeks
Recurrent symptoms
Symptom improvement/resolution
Persistent symptoms
Standard dose PPI once daily
Assess symptomatic response in 4 to 8 weeks
Symptom improvement/resolution
Persistent symptoms
Taper and discontinue PPI when asymptomatic for 8 weeks, except in patients with severe erosive esophagitis or Barrett s esophagus¶
Reinforce compliance and lifestyle modification
Manage as refractory GERD (Refer to UpToDate topic on refractory GERD for management)
Recurrent symptoms
If recurrent symptoms occured ≥3 months of discontinuing acid suppression: Treat with 8-week course of previously effective therapy for GERD
If recurrent symptoms occured within 3 months of discontinuing acid suppression: Perform upper endoscopy to rule out other diagnoses and GERD complications if not previously performed, and continue long-term maintenance therapy for acid suppression

Mild and intermittent symptoms

Lifestyle and dietary modification

- 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 (cough, hoarseness, throat clearing). 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 (caffeine, 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.

- 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 refluxed 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.
- **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.**

Antacids

- As antacids do not prevent GERD, their role is limited to intermittent (on demand) use for relief of mild GERD symptoms that occur less than once a week.
- Antacids usually contain a combination of magnesium trisilicate, aluminum hydroxide, or calcium carbonate, which neutralize gastric pH.
- Antacids begin to provide relief of heartburn within five minutes, but have a short duration of effect of 30 to 60 minutes.

Surface agents and alginates

- the use of sucralfate is limited to the management of GERD in pregnancy.
- Sodium alginate may be beneficial, especially for post-prandial symptoms in individuals with relatively mild reflux disease.
- They are also used as add on therapy in patients with refractory GERD.

Histamine 2 receptor antagonist

- The development of tachyphylaxis within two to six weeks of initiation of H2RAs limits their use in the management of GERD.
- H2RAs are ineffective in patients with severe esophagitis.

Severe or frequent symptoms or erosive esophagitis

- We use step-down therapy in patients with erosive esophagitis, frequent symptoms (two or more episodes per week), and/or severe symptoms that impair quality of life in order to optimize symptom relief.
- We begin with standard-dose PPI once daily for eight weeks in addition to lifestyle and dietary modification.

Proton pump inhibitors

- PPIs should be used in patients who fail twice-daily H2RA therapy and in patients with erosive esophagitis and/or frequent (two or more episodes per week) or severe symptoms of GERD that impair quality of life.
- 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.

SUBSEQUENT MANAGEMENT

PPI refractory symptoms

- Patients who fail to respond to once-daily proton pump inhibitors (PPI) therapy are considered to have refractory GERD.

Duration of acid suppression

- Patients with severe erosive esophagitis or Barrett's esophagus require maintenance acid suppression with a PPI at standard dose.
- PPIs should be prescribed at the lowest dose and for the shortest duration appropriate to the condition being treated.
- 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

- 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. Patients with recurrent symptoms within three months of discontinuing acid suppression require long-term maintenance therapy with a PPI for acid suppression.
- The role of surgery and endoscopic therapy are in patients with GERD who cannot tolerate long-term PPIs or want to discontinue therapy due to concerns about long-term side effects.

Indications for referral

- Referral to a subspecialist is warranted for patients who fail to respond to once daily PPI therapy (refractory GERD), and patients who cannot tolerate long-term PPIs or want to discontinue therapy.

No role for empiric eradication of H. pylori

- It is uncertain whether chronic acid suppression with PPIs increases the risk for atrophic gastritis in patients with H. pylori. Therefore, routine screening for H. pylori infection and empiric eradication of H. pylori are not recommended in patients with GERD.

PREGNANCY AND LACTATION

- Initial management of gastroesophageal reflux disease (GERD) in pregnancy consists of lifestyle and dietary modification (elevation of the head end of the bed, avoidance of dietary triggers).
- In patients with persistent symptoms, pharmacologic therapy should begin with antacids followed by sucralfate.
- In patients who fail to respond, similar to nonpregnant patients, histamine 2 receptor antagonists (H2RAs) and then proton pump inhibitors (PPIs) should be used to control symptoms.
- Most antacids are considered safe in pregnancy and are compatible with breastfeeding. However, antacids containing sodium bicarbonate and magnesium trisilicate should be avoided in pregnancy.

Thanks for your attention