GASTRO OESOPHAGEAL REFLUX DISEASE

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Def:

- Gastro-oesophageal reflux disease is the term used to describe a histopathological alteration resulting from episodes of reflux of acid , pepsin and occasionally bile into the oesophagus from the stomach.

TABLE 34–1 Foods and Medications That May Worsen GERD Symptoms

Decreased lower-esophageal sphincter pressure	
Foods	
Fatty meal	Garlic
Carminatives (peppermint, spearmint)	Onions
Chocolate	Chili peppers
Coffee, cola, tea	
Medications	
Anticholinergics	Ethanol
Barbiturates	Nicotine (smoking)
Caffeine	Nitrates
Dihydropyridine calcium channel blockers	Progesterone
Dopamine	Tetracycline
Estrogen	Theophylline
Direct irritants to the esophageal mucosa	
Foods	
Spicy foods	Tomato juice
Orange juice	Coffee
Medications	
Alendronate	Iron
Aspirin	Quinidine
Nonsteroidal antiinflammatory drugs	Potassium chloride

- Pathogenesis :

- abnormal reflux of gastric contents from the stomach into the esophagus.

- Decreased gastroesophageal sphincter pressures related to spontaneous transient LES relaxations, transient increases in intraabdominal pressure, all of which may lead to the development of gastroesophageal reflux.

- Other factors : mucosal resistance, gastric emptying, epidermal growth factor, and salivary buffering.
- Abnormal oesophageal acid clearence.
- Endoscopy-negative reflux disease : GORD with normal endoscopy.
- Hiatus hernia

- ***LOWER ESOPHAGEAL SPHINCTER PRESSURE***

Esophageal distention, vomiting, belching	straining, bending over, coughing, eating
↓	↓
spontaneous transient LES relaxations	Stress reflux
↓	↓
defective LES pressure not associated with swallowing	increase in intra-abdominal pressure
↓	↓
GERD	GERD

ANATOMIC FACTORS

- The size of a hiatal hernia is proportional to the frequency of transient LES relaxations. Patients with hypotensive LES pressures and large hiatal hernias are more likely to experience gastroesophageal reflux following abrupt increases in intraabdominal pressure compared to patients with a hypotensive LES and no hiatal hernia.

ESOPHAGEAL CLEARANCE

- Common in elderly patients and patients with Sjögren's syndrome or xerostomia.

- Depends on duration of contact of acid with oesophageal mucosa This contact time is, in turn, dependent on the rate at which the oesophageous clears the noxious material, as well as the frequency of reflux.

MUCOSAL RESISTANCE

- defect in the normal mucosal defenses,hydrogen ions diffuse into the mucosa, leading to the cellular acidification and necrosis that ultimately cause esophagitis.

- Intheory, mucosal resistance may be related not only to esophagealmucus, but also to tight epithelial junctions, epithelial cell turnover, mucosal blood flow, tissue prostaglandins

Signs and Symptoms

- Typical symptoms :
  - Heart burn
  - Water brash
  - Regurgitation
  - Belching
- Atypical symptoms :
  - Non-allergic asthma
  - Chronic cough
  - Pharyngitis
  - Chest pain
  - Dental erosions

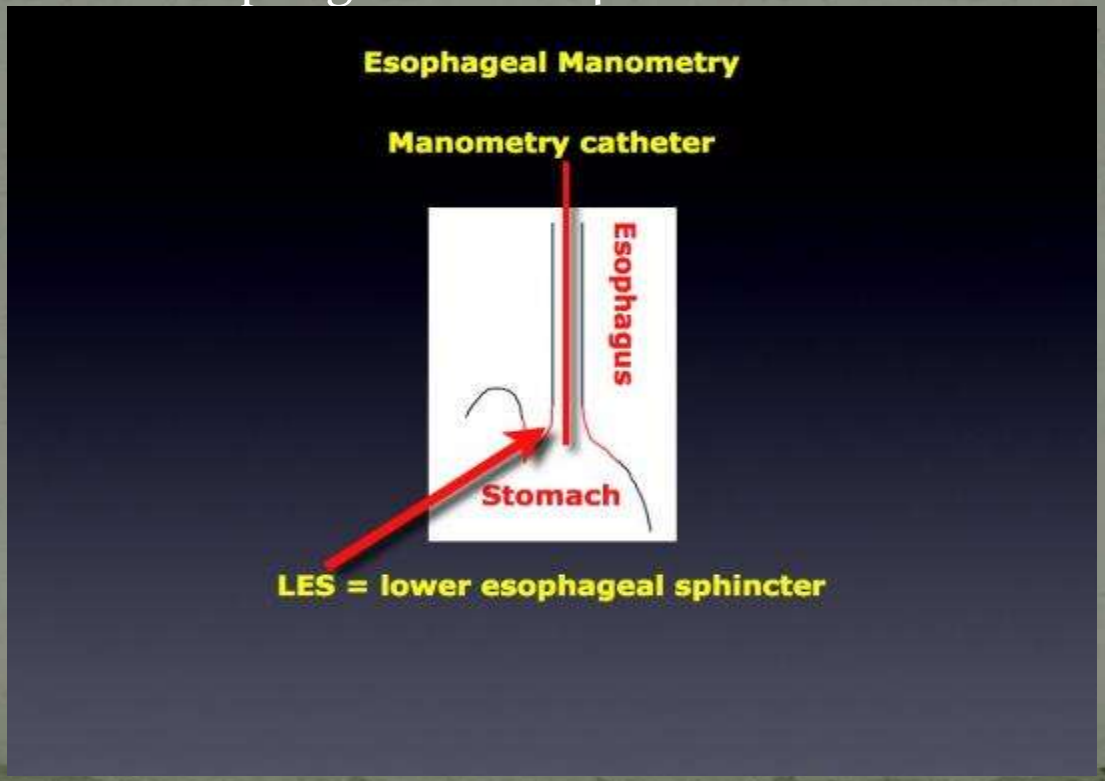
Cont…

- Alarm symptoms :
  - Dysphagia
  - Unexplained weight loss
  - Choking
  - Continual pain
  - Odynophagia

Diagnosis

1. **Ambulatory pH Monitoring :**

A small tube called a catheter, with an acid sensor at its tip, is inserted through the nose and positioned in the esophagus. The other end travels down to the waist after exiting from the nose and then attaching to a recorder. The recorder records every reflux episode in the esophagus and a 24 hour frame of data is analyzed.



- **Acid Perfusion Test or Bernstein Test:**

- **Esophageal Motility Testing:**
  Motility testing of the esophagus determines the working of muscles of the esophagus by passing a catheter through a nostril down the throat into the esophagus. The catheter contains a sensor to detect pressure inside the esophagus and the other end is attached to a recorder. The patient is then permitted to swallow sips of water to record and evaluate the esophageal contraction movements.

Therapeutic goals

- Patients should be assessed for symptoms, such as heartburn and for signs and symptoms of complications (e.g., dysphagia)that require immediate medical attention.

- The goals of GERD treatment are to alleviate symptoms, decrease the frequency of recurrent disease, promote healing of mucosal injury, and prevent complications.

- Many patients with GERD will relapse if medication is withdrawn,so long-term maintenance treatment may be required.A proton pump inhibitor is the drug of choice for maintenance of patients with moderate to severe GERD.

GENERAL APPROACH TO TREATMENT

- Lifestyle modifications and patient-directed therapy
- Pharmacologic intervention with prescription-strength acid suppression therapy
- Interventional therapies (ant reflux surgery or endoscopic therapies

TABLE 34-5 Nonpharmacologic Treatment of GERD with Lifestyle Modifications

- Elevate the head of the bed (increases esophageal clearance). Use 6- to 8-inch blocks under the head of the bed. Sleep on a foam wedge.
- Dietary changes
  - Avoid foods that may decrease lower esophageal sphincter pressure (fats, chocolate, alcohol, peppermint, and spearmint)
  - Avoid foods that have a direct irritant effect on the esophageal mucosa. (spicy foods, orange juice, tomato juice, and coffee)
  - Include protein-rich meals in diet (augments lower esophageal sphincter pressure)
  - Eat small meals and avoid eating immediately prior to sleeping (within 3 hours if possible; decreases gastric volume)
  - Weight reduction (reduces symptoms)
- Stop smoking (decreases spontaneous esophageal sphincter relaxation)
- Avoid alcohol (increases amplitude of the lower esophageal sphincter, peristaltic waves, and frequency of contraction)
- Avoid tight-fitting clothes
- Discontinue, if possible, drugs that may promote reflux (calcium channel blockers, β-blockers, nitrates, theophylline)
- Take drugs that have a direct irritant effect on the esophageal mucosa with plenty of liquid if they cannot be avoided (bisphosphonates, tetracyclines, quinidine, and potassium chloride, iron salts, aspirin, nonsteroidal antiinflammatory drugs)

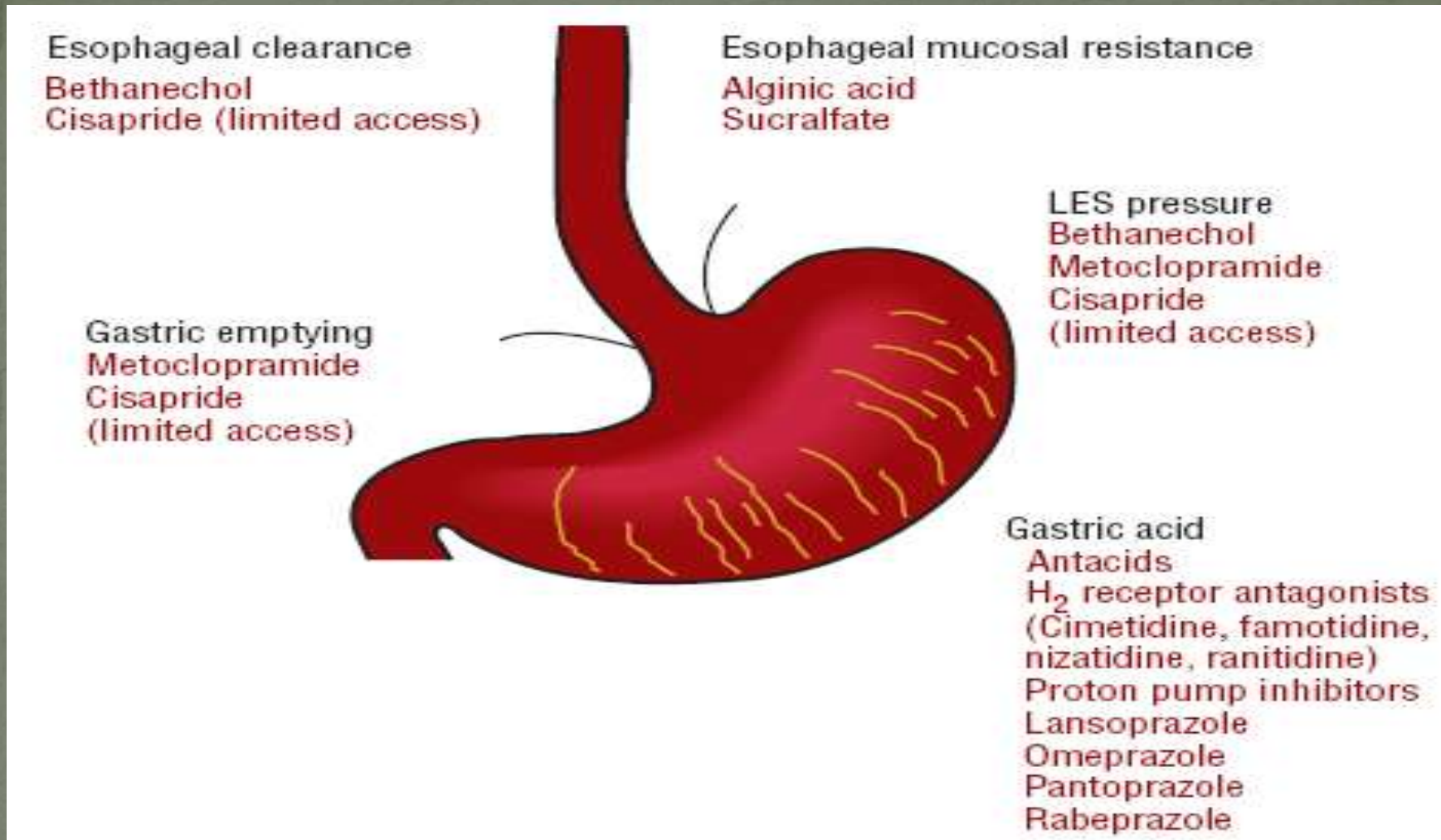


FIGURE 34-1. Therapeutic interventions in the management of gastroesophageal reflux disease. Pharmacologic interventions are targeted at improving defense mechanisms or decreasing aggressive factors. (LES, lower esophageal sphincter.)

TABLE 34-4 Therapeutic Approach to GERD in Adults

Patient Presentation	Recommended Treatment Regimen	Comments
Intermittent, mild heartburn	**Lifestyle modifications** **plus** **patient-directed therapy** Antacids • Maalox or Mylanta 30 mL as needed or after meals and at bedtime • Gaviscon 2 tabs after meals and at bedtime • Calcium carbonate 500 mg, 2–4 tablets as needed **and/or** Nonprescription H_2-receptor antagonists (taken up to twice daily) • Cimetidine 200 mg • Famotidine 10 mg • Nizatidine 75 mg • Ranitidine 75 mg **or** Nonprescription proton pump inhibitor (taken once daily) • Omeprazole 20 mg	Lifestyle modifications should be started initially and continued throughout the course of treatment. If symptoms are unrelieved with lifestyle modifications and nonprescription medications after 2 weeks, patient should seek medical attention.

Symptomatic relief of GERD	**Lifestyle modifications** **plus** **prescription-strength acid suppression therapy**	For typical symptoms, treat empirically with prescription-strength acid-suppression therapy. If symptoms recur, consider maintenance therapy (MT). Note: Most patients will require standard doses for MT.
	H_2-receptor antagonists (for 6–12 weeks) • Cimetidine 400 mg twice daily • Famotidine 20 mg twice daily • Nizatidine 150 mg twice daily • Ranitidine 150 mg twice daily	Mild GERD can usually be treated effectively with H_2-receptor antagonists.
	or	
	Proton pump inhibitors (for 4–8 weeks); all are given once daily • Esomeprazole 20 mg • Lansoprazole 15 mg • Omeprazole 20 mg • Pantoprazole 40 mg • Rabeprazole 20 mg	Patients with moderate to severe symptoms should receive a proton pump inhibitor as initial therapy.

Healing of erosive esophagitis or treatment of patients presenting with moderate to severe symptoms or complications	**Lifestyle modifications** **plus** Proton pump inhibitors for 4–16 weeks (up to twice daily) • Esomeprazole 20–40 mg daily • Lansoprazole 30 mg daily • Omeprazole 20 mg daily • Rabeprazole 20 mg daily • Pantoprazole 40 mg daily **or** High-dose H_2-receptor antagonist (for 8–12 weeks) • Cimetidine 400 mg four times daily or 800 mg twice daily • Famotidine 40 mg twice daily • Nizatidine 150 mg four times daily • Ranitidine 150 mg four times daily	For atypical or alarm symptoms, obtain endoscopy (if possible) to evaluate mucosa. Give a trial of a proton pump inhibitor. If symptoms are relieved, consider MT. Proton pump inhibitors are the most effective maintenance therapy in patients with atypical symptoms, complications, and erosive disease. Patients not responding to pharmacologic therapy, including those with persistent atypical symptoms, should be evaluated via ambulatory reflux monitoring to confirm the diagnosis of GERD (if possible).
Interventional therapies	Antireflux surgery or endoscopic therapies	

Adverse Effects

- Bethanechol and Metoclopramide :
  - ✓ Extra pyramidal effects
  - ✓ Sedation
  - ✓ Irritability
  - ✓ cardiac arrhythmias

- Metoclopramide contraindicated in Parkinson's disease,mechanical obstruction, concomitant use of other dopamine antagonists or anticholinergic agents, and pheochromocytoma.

PATIENT COUNSELING

- Weight loss
- elevation of the head of the bed
- consumption of smaller meals and not eating 3 hours prior to sleeping
- smoking cessation
- Avoid alcohol
- Avoid Spicy foods, orange juice, tomato juice, and coffee
- Avoid fats,chocolate, , peppermint, and spearmint

References

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- http://www.omnimedicalsearch.com/conditions-diseases/gerd-diagnosis.html

THANK YOU