Gastroesophageal Reflux Disease (GERD): Diagnosis and Management

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- Case scenarios
- case1. A woman of 50 years presented with frequent dry cough for 2 years , which is more persistent at night. She also complains of occasional chest compression, not related to exertion, no breathlessness or haemoptysis. She has occasional heartburn which appears about an hour after main meals.
- Case 2. A 36 year old college teacher consulted a renowned cardiologist for his chest discomfort which appears after heavy meals presuming the discomfort is likely to be due to heart origin. He is nonsmoker, normotensive and nondiabetic His CXR, ECG and ETT are normal

REFLUX IS A NORMAL EVENTS

It becomes abnormal when there are persistent symptoms or complication, This occurs only when there is prolonged contact of gastric contents with the oesophageal mucosa.

GERD

(Gastroesopahageal Reflux Disease)

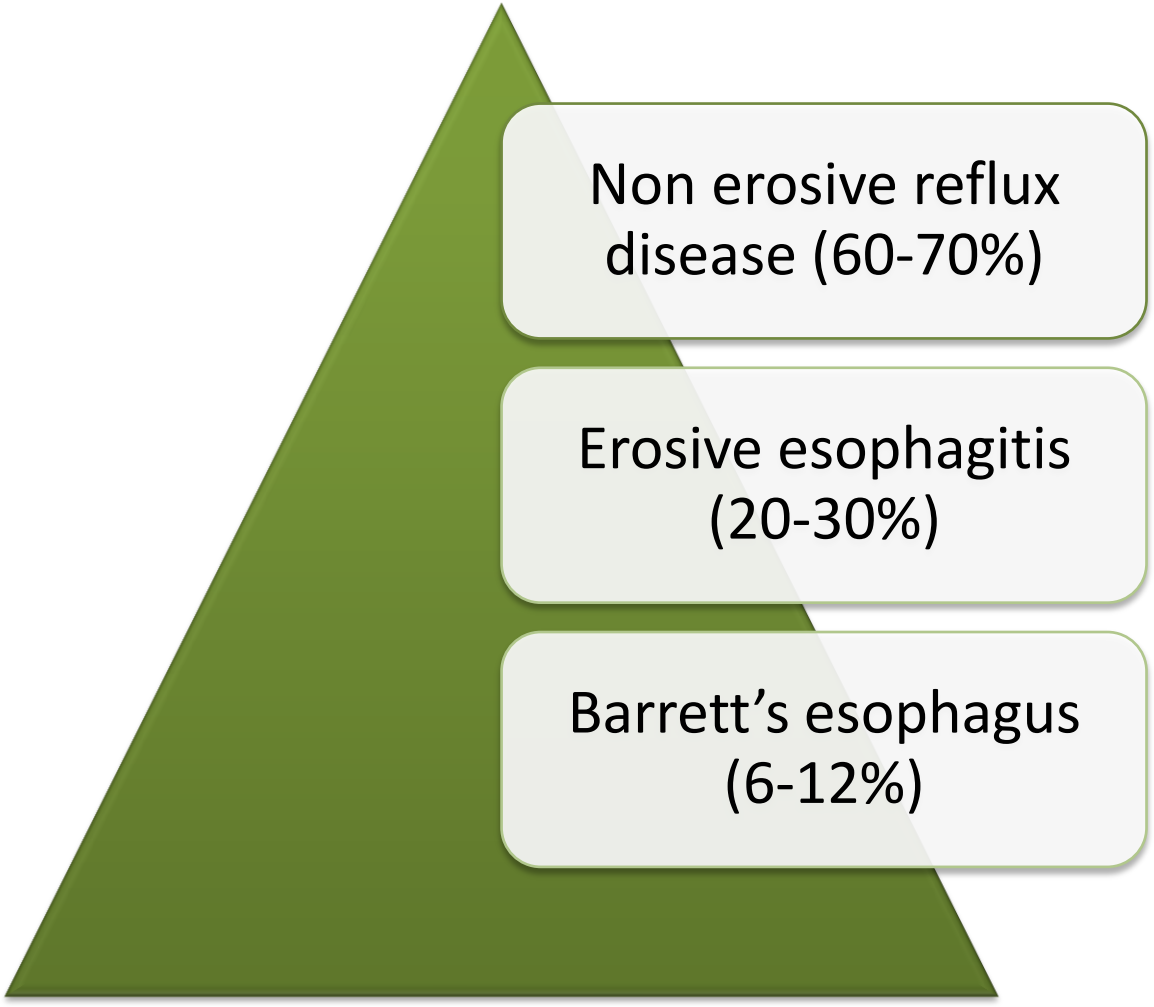
- GERD should be defined as symptoms or complications resulting from the reflux of gastric contents into the esophagus or beyond, into the oral cavity (including larynx) or lung.

- Based on the presence or absence of esophageal mucosal damage seen on endoscopy, GERD can be classified as-

  - Non-erosive reflux disease (NERD) or
  - Erosive reflux disease (ERD)

Guidelines for the diagnosis and management of gastroesophageal reflux disease. Am J Gastroenterol. 2013;108:308–328; quiz 329

GERD Presentations



http://www.nature.com/gimo/contents/pt1/full/gimo42.html, accessed on October 1, 2009

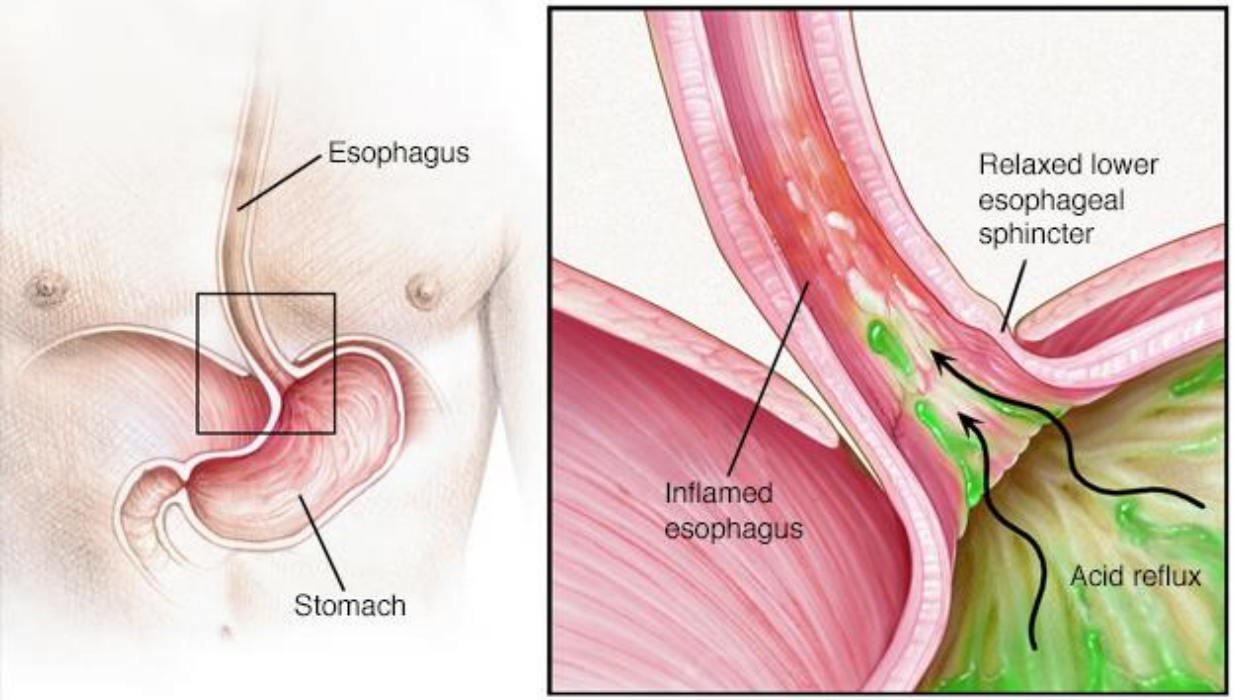
Epidemiology of GERD

- 10%-20% in the Western world
- Less than 5% in Asia
- **19.4% in Bangladesh**

Presence of heartburn and/or acid regurgitation at least once weekly

- Prevalence of GERD increasing in older age
- Prevalence of GERD is significantly more in housewives
- Frequency varies considerably among different ethnic groups

Mymensingh Med J. 2011 Jul;20(3):463-71



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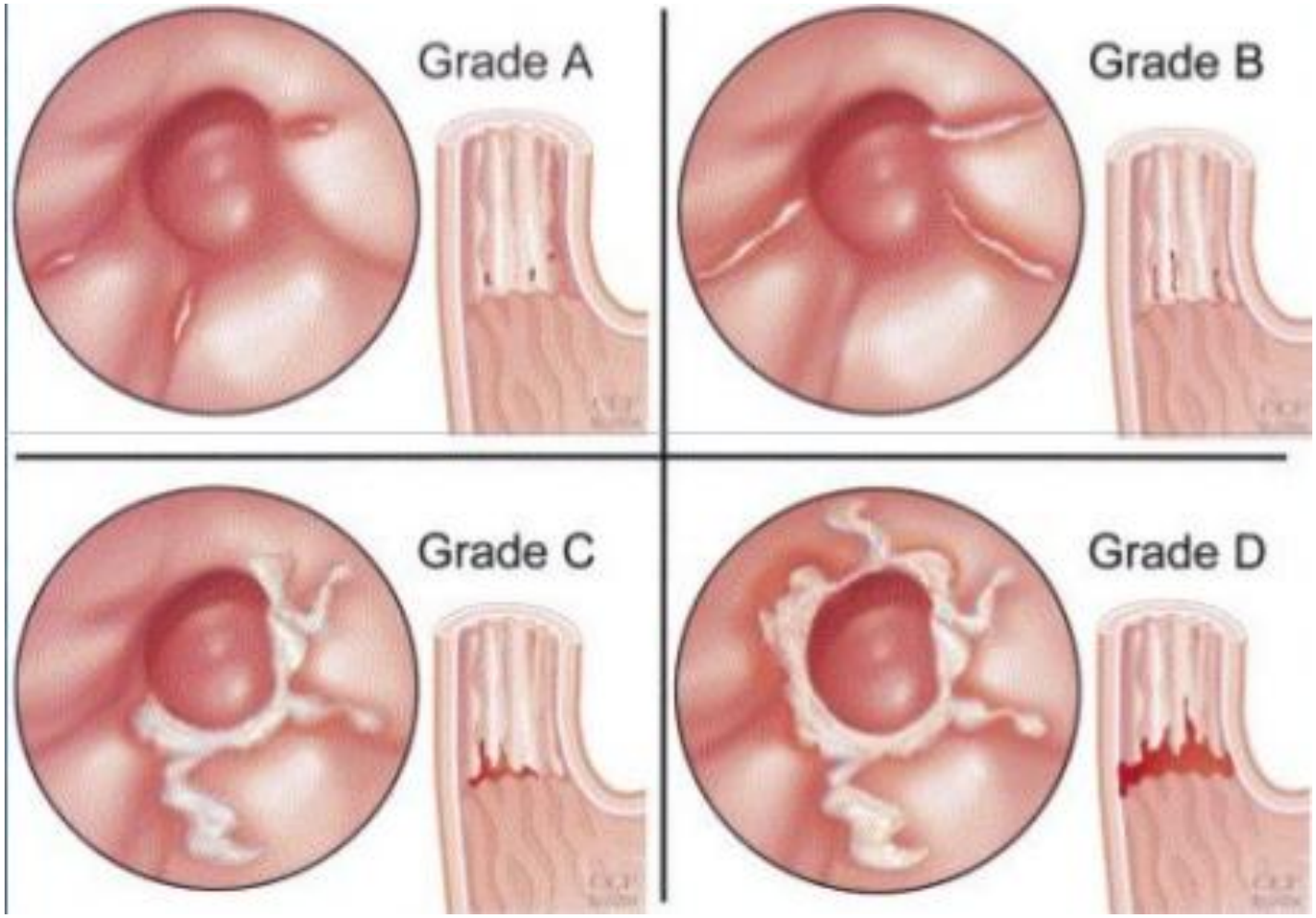
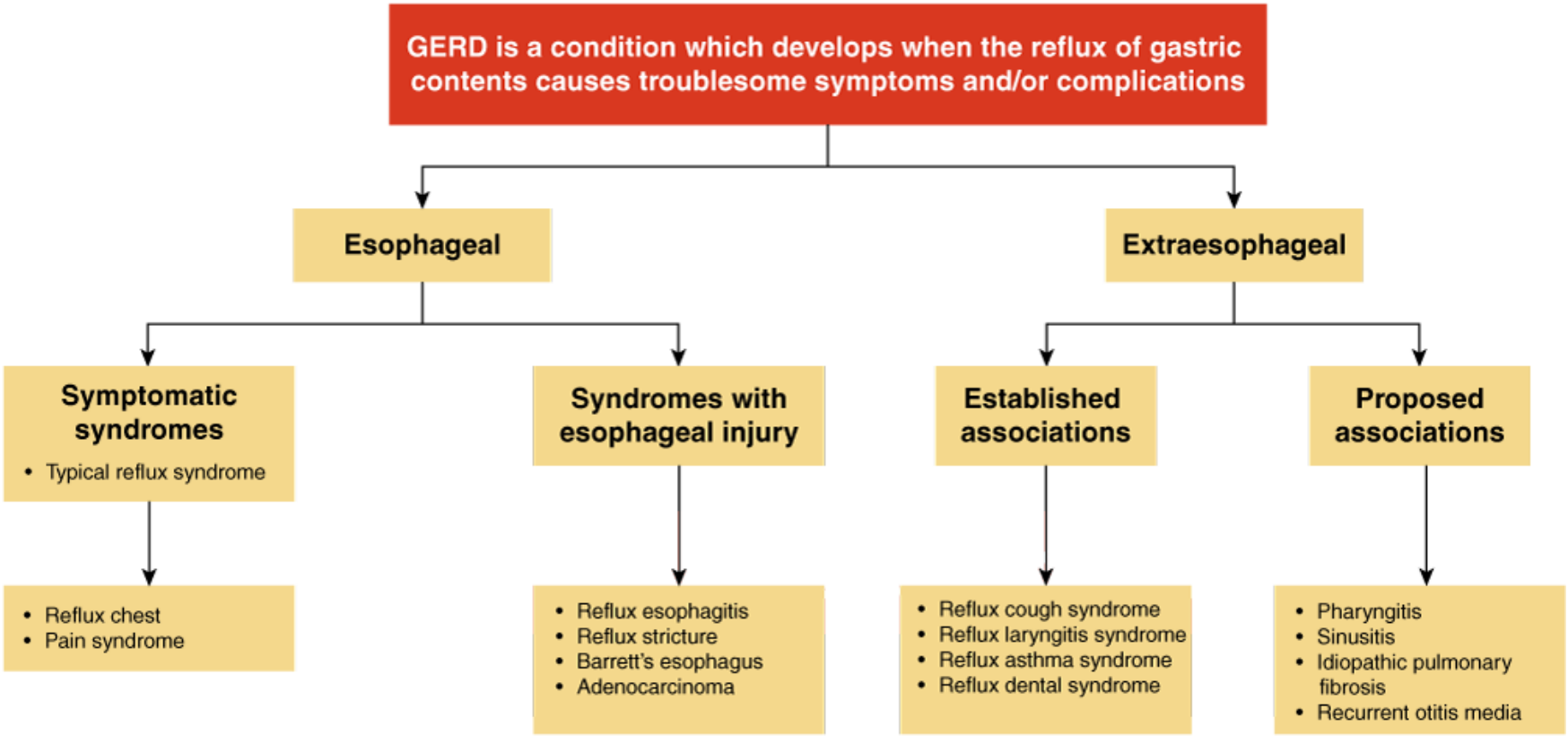
How heartburn and GERD occur

Acid reflux occurs when the sphincter muscle at the lower end of your esophagus relaxes at the wrong time, allowing stomach acid to back up into your esophagus. This can cause heartburn and other signs and symptoms. Frequent or constant reflux can lead to GERD.

LA classification of GERD



Montreal Classification of GERD



Source: Bishop WP: *Pediatric Practice Gastroenterology*: www.accesspediatrics.com

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SYMPTOMS

Typical Symptoms

- **Acid regurgitation**
- **Heartburn**

Atypical Symptoms

- Epigastric fullness
- Epigastric pressure
- Epigastric pain
- Dyspepsia
- Nausea,
- Bloating,
- Belching

Extraesophageal Symptoms

- Chronic cough
- Bronchospasm
- Wheezing
- Hoarseness
- Sore throat
- Asthma
- Laryngitis
- Dental erosions

Extraesophageal Symptoms and Signs Associated with GERD

Ear, Nose and Throat	*Pulmonary*	*Others*
Hoarseness	Asthma	Noncardiac chest pain
Cough	Bronchitis	Dental erosion
Globus	Bronchiectasis	Sleep apnea
Pharyngitis	Aspiration pneumonia	
Otitis	Idiopathic pulmonary	
Laryngitis	fibrosis	
Sinusitis		
Vocal cord granuloma		
Subglottic stenosis		
Laryngeal cancer		

Gastroenterol Clin North Am 1999; 28:861-873.

RISK FACTORS

- Gastric acid and other refluxed materials (e.g., bile, pepsin, enzymes)
- Structural and physiologic antireflux mechanisms at the gastroesophageal junction (LES, diaphragm, hiatus hernia, phreno-esophageal ligament)
- Transient lower esophageal sphincter relaxations (TLESR)
- Esophageal clearance mechanisms (esophageal motility, gravity, salivary bicarbonate)
- Mucosal integrity and defense mechanisms
- Ingested irritants (e.g., NSAIDs, certain antibiotics)
- Ingested substances and drugs that affect esophageal, LES, or gastric motility (e.g. alcohol, medications)
- Sensory mechanisms
- Other (delayed gastric emptying, inflammation-esophagitis, genetics, psycho-behavioral factors)

CLINICAL PRESENTATION

- The most common symptoms- **heartburn, regurgitation, and dysphagia.**
- As many as 80% of patients with GERD may have at least one extraesophageal symptom.
- The common atypical symptoms are asthma like symptom**, chest pain, cough, laryngitis and sinusitis**.

Aliment Pharmacol Ther. 2008; 27: 249–256; JCOM. 2008; 15(8):402-410

Complications of GERD

- Strictures
- Barrett Esophagus (BE)
- Hemorrhage
- Perforation

DIFFERENTIAL DIAGNOSIS

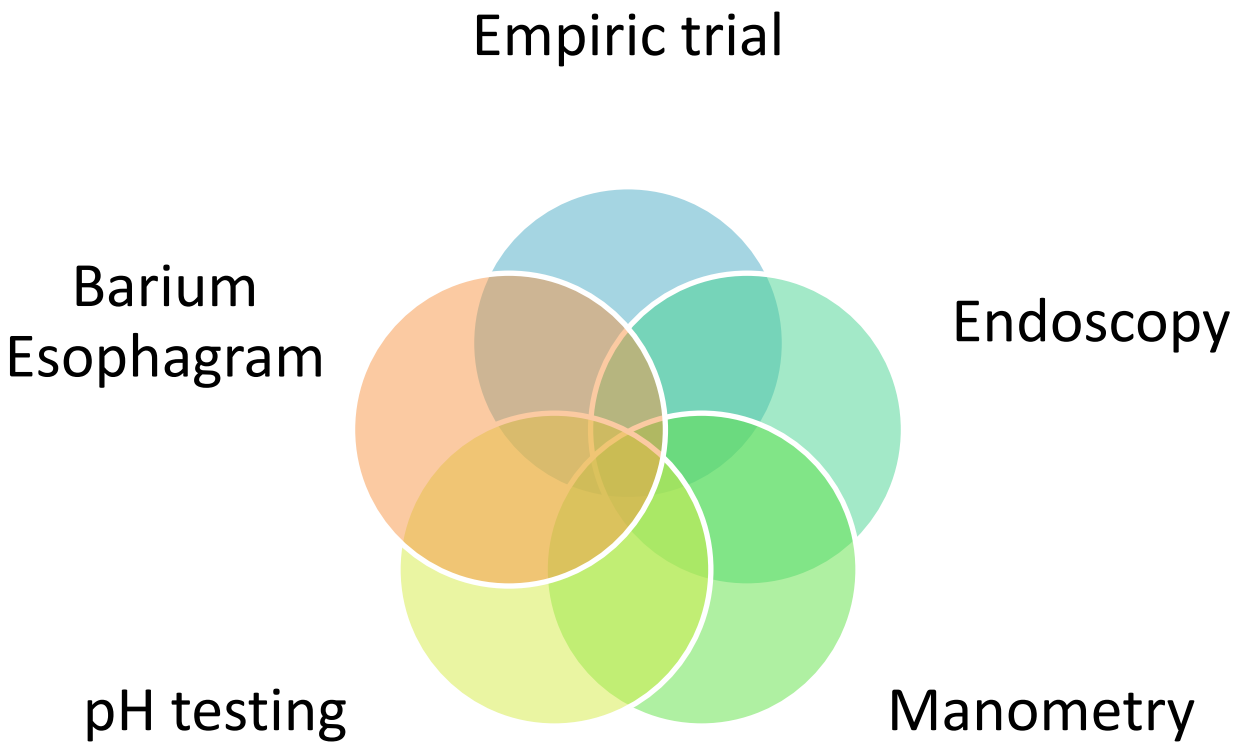
- Achalasia
- Acute Gastritis
- Antral Web Cholelithiasis
- Chronic Gastritis
- Coronary Artery Atherosclerosis
- Esophageal Cancer
- Esophageal Motility Disorders
- Esophageal Spasm
- Esophagitis
- Gallstones (Cholelithiasis)
- Helicobacter Pylori Infection
- Hiatal Hernia
- Intestinal Malrotation
- Intestinal Motility Disorders
- Irritable Bowel Syndrome
- Peptic Ulcer Disease

https://emedicine.medscape.com/article/176595-differential

DIAGNOSTIC EVALUATION

- The diagnosis of GERD is made by a combination of (in the absence of "alarm symptom"):
  - — Clinical symptoms
  - — Response to acid suppression
  - — As well as objective testing with upper endoscopy and esophageal pH monitoring

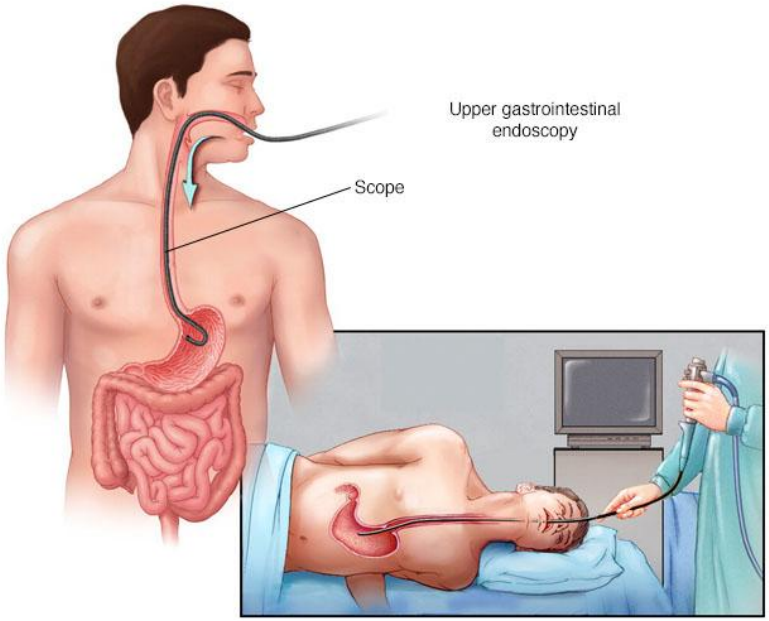
GERD Diagnosis: Menu



Empiric Therapy

- Patient with a history of typical symptoms of heartburn and/or regurgitation can be offered empiric treatment
- Typical symptoms that are responsive to acid suppression
- Patients with atypical symptoms or non-cardiac chest pain as their primary complaint should be considered for further diagnostic evaluation prior to empiric therapy
- It should be remember that a minority of patients on even high dose proton pump inhibition will continue to have objective evidence of pathologic esophageal acid exposure on ambulatory pH monitoring

ENDOSCOPY



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- An endoscopy procedure involves inserting a long, flexible tube (endoscope) down throat and into esophagus.
- A tiny camera on the end of the endoscope lets examine esophagus, stomach and the beginning of small intestine (duodenum).

INDICATIONS FOR ENDOSCOPY AND FURTHER INVESTIGATIONS

Alarm Features for GERD

- Dysphagia (solid food, progressive),
- Odynophagia (painful swallowing)
- choking, chest pain
- Bleeding/anemia
- Weight loss
- Persistent vomiting

Other Indications for Further Investigation

- GERD symptoms that could be cardiac in origin.
- Respiratory symptoms secondary to reflux

Esophageal PH Monitoring

- Most accurate test for measuring pattern frequency and duration of reflux episodes
- Document correlation between reflux episodes and symptoms
- Most useful when diagnosis is still unclear

Am J Gastroenterol 2005; **100**: 190-200

PH Monitoring

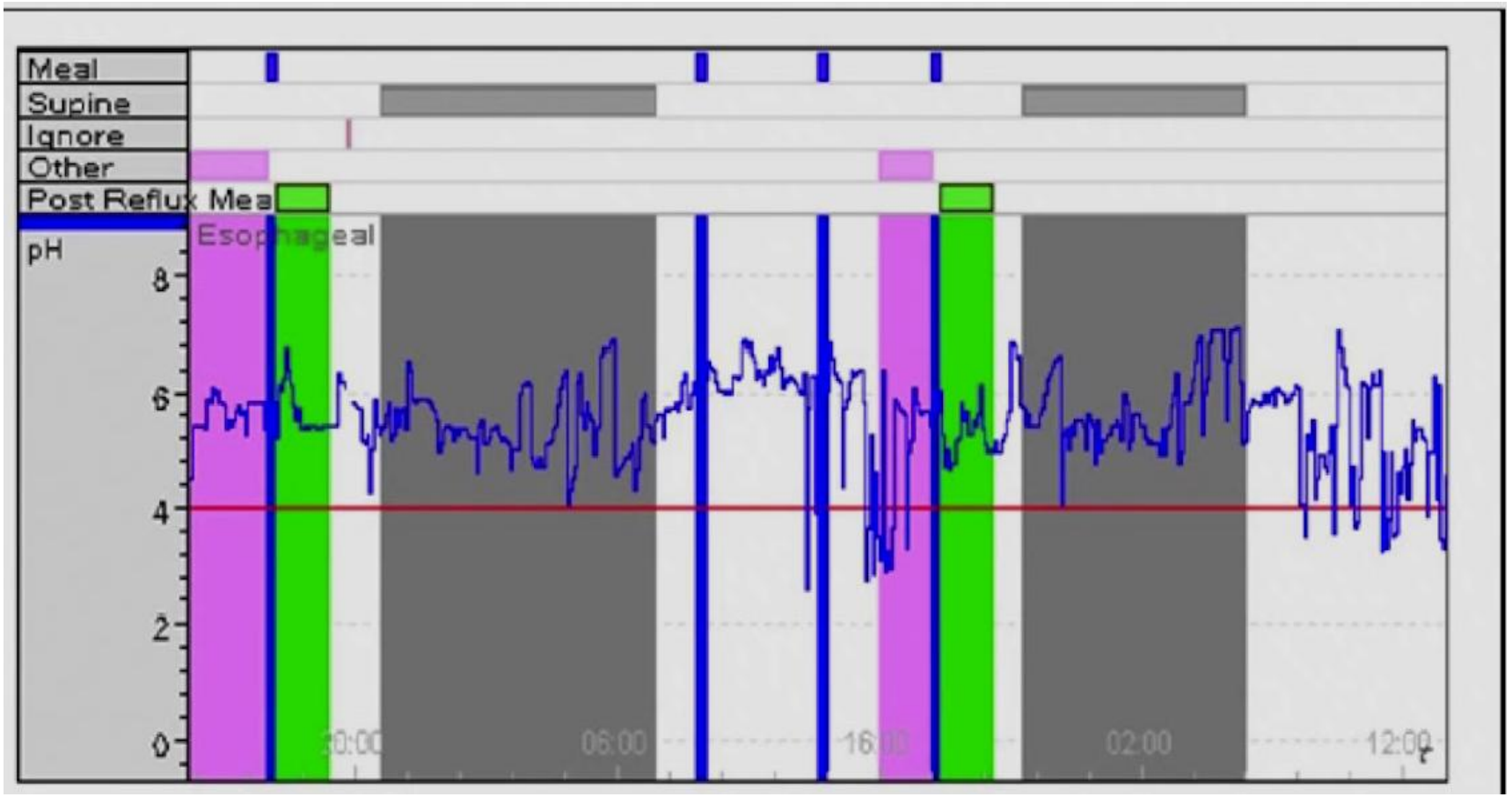
Cont…..

- Reflux monitoring is typically performed using either a wireless capsule or a transnasal catheter (pH alone or combined pH-impedance) with the patient either on or off acid suppression.

- There is no uniform consensus regarding the most optimal method,

- For either study, diet and activity should remain unchanged in order to capture an accurate depiction of day to day esophageal acid exposure.

Bravo Tracing



AGA Esophageal GERD Practice Guidelines: Manometry

- GERD despite therapy
- Negative endoscopy
- Goals
  - — LES location
  - — Peristaltic function preoperatively
  - — Detection of subtle motility abnormalities
- **Test uses high resolution manometry catheter Placed into stomach that measures function of LES**

Barium Esophagram

- Frequently used in the evaluation of complications related to GERD. (*e.g.,* peptic Stricture)

- Used in the evaluation of dysphagia in the post anti-reflux surgery patient

Limitations

- Detailed mucosal exam for erosive esophagitis, Barrett's esophagus

Am J Gastroenterol 1996; **91**: 1181-1185 [PMID: 8651167]

DIAGNOSTIC TESTING FOR GASTROESOPHAGEAL REFLUX DISEASE

Diagnostic test	Indication
PPI trial	Classic GERD symptoms with no alarm symptoms.
Esophageal pH monitoring	Refractory symptoms where GERD diagnosis is in question, pre-operative evaluation for non-erosive disease
Upper endoscopy	Alarm symptoms (e.g., dysphagia), PPI unresponsive patients, high risk for Barrett's esophagus
Barium esophagram	Evaluation of dysphagia, otherwise not recommended for GERD evaluation
Esophageal manometry	Prior to anti-reflux surgery to rule out esophageal dysmotility (e.g., achalasia, scleroderma), otherwise not recommended for GERD evaluation

- GERD: Gastroesophageal reflux disease;
- PPI: Proton pump inhibitor.

World J Gastrointest Pharmacol Ther 2014 August 6; 5(3): 105-112

Life Style And Dietary Modification

ACG Esophageal GERD Practice Guidelines:

- Weight loss is recommended for GERD patients who are overweight or have had recent weight gain.
- Head of bed elevation and avoidance of meals 2 – 3 h before bedtime should be recommended for patients with nocturnal GERD.
- Routine global elimination of food that can trigger refl ux (including chocolate, caffeine, alcohol, acidic and / or spicy foods) is not recommended in the treatment of GERD.

Antacids and alginates

- These acid suppressants are appropriate, initial patient-directed therapy for GERD.
- More effective than placebo in the relief of daytime GERD symptoms.

Gastroenterology. 2008; 135:1383–1413.; Rockville (MD): 2008 May. Available: http://www.guideline.gov/
Am J Gastroenterol, 1999;94(6):1434-1442

H2 Receptor Antagonist

- Cimetidine, Ranitidine, Famotidine
- Inhibits H2 receptors in the parietal cell
- Most useful for GERD of mild to moderate severity who have occasional symptoms within 12 weeks (1/2 to 2/3 patients)
- Heal mild esophagitis
- H 2 -receptor antagonist can be used as a maintenance option in patients without erosive disease.
- Healing rates are poor for those with severe reflux esophagitis
- Bedtime H 2 RA therapy can be added to daytime PPI therapy in selected patients with objective evidence of night-time reflux if needed

Proton Pump Inhibitors (PPI)

Use When

- BID H2 blockers fail
- There is erosive esophagitis
- Persistent more than twice a week
- Symptoms impair the quality of life

ACG Recommendation for PPI

- An 8-week course of PPIs is the therapy of choice for symptom relief and healing of erosive esophagitis.
- Traditional delayed release PPIs should be administered 30 – 60 min before meal.
- PPI therapy should be initiated at once a day dosing, before breakfast.
- Non-responders to PPI should be referred for evaluation.
- Partial response to PPI therapy, increasing the dose to twice daily therapy or switching to a different PPI may provide additional symptom relief
- Maintenance PPI therapy should be administered in patients having symptoms after PPI is discontinued, and in patients with complications including erosive esophagitis and Barrett's esophagus.

Potential risks associated with PPIs

- Switching PPIs can be considered in the setting of side-effects.
- Patients with known osteoporosis can remain on PPI therapy. Concern for hip fractures and osteoporosis should not affect the decision to use PPI long-term except in
- patients with other risk factors for hip fracture
- PPI therapy can be a risk factor for *Clostridium* difficile infection, and should be used with care in patients at risk.
- Short-term PPI usage may increase the risk of community-acquired pneumonia. The risk does not appear elevated in long-term users.
- PPI therapy does not need to be altered in concomitant clopidogrel users as there does not appear to be an increased risk for adverse cardiovascular events.

Am J Gastroenterol 2013; 108:912 – 914

OTHER THERAPY

- Therapy for GERD other than acid suppression, including prokinetic therapy and / or baclofen, should not be used in GERD patients without diagnostic evaluation.

- There is no role for sucralfate in the non-pregnant GERD patient.

Mechanism of Treatment Failure

- Improper dosing
- Non compliance
- Functional Heart burn
- Non acid reflux
- Bile acid reflux
- Nocturnal acid back through
- Esophageal Hypersensitivity

Surgical options for GERD

- Surgical therapy is a treatment option for long-term therapy in GERD patients.
- Surgical therapy is generally not recommended in patients who do not respond to PPI therapy.
- Preoperative ambulatory pH monitoring is mandatory in patients without evidence of erosive esophagitis. All patients should undergo preoperative manometry to rule out achalasia or scleroderma-like esophagus.
- Surgical therapy is as effective as medical therapy for carefully selected patients with chronic GERD when performed by an experienced surgeon.
- Obese patients contemplating surgical therapy for GERD should be considered for bariatric surgery. Gastric bypass would be the preferred operation in these patients.
- The usage of current endoscopic therapy or transoral incisionless fundoplication cannot be recommended as an alternative to medical or traditional surgical therapy.

SUMMARY

- PPIs are cornerstone of therapy
  —Goal of therapy: lowest dose to control
- Lifestyle changes should be used selectively
- Anti-reflux surgery reserved for nocturnal regulation and PPI intolerance

Thank
you