Acid Peptic Disorders

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Acid peptic disorders include a number of diseases, whose etiology can be linked to gastric secretions.

Gastroesophageal reflux disease, and peptic ulcer disease, are two most common and well-defined disease states.


Gastroesophageal
Reflux Disease (GERD)

GERD is defined as chronic symptoms or mucosal damage produced by the abnormal reflux of gastric contents into the esophagus.

Reflux esophagitis refers to a subgroup of GERD patients with histopathologically demonstrated characteristic changes in the esophageal mucosa

Nonerosive reflux disease, also know as endoscopy-negative reflux disease, refers to patients with typical GERD symptoms caused by intraesophageal acid who do not have visible mucosal injury at endoscopy.

Prevalence

Heartburn is a common problem in the United States and in the Western world, since many individuals control symptoms with over-the-counter medications and without consulting a physician, the condition is likely underreported.

Approximately 7% of the population experience symptoms of heartburn daily. 20-40% of the people who experience heartburn do indeed have GERD

No sexual predilection exists. GERD is as common in men as in women

GERD occurs in all age groups.

The prevalence of GERD increases in people older than 40 years.

Etiology

- Lower esophageal sphincter incompetence.
- Transient lower esophageal sphincter relaxation.
- Hiatal hernia
- Obesity: contributing factor in GERD

Typical Features

- Heartburn
- Regurgitation

Atypical Features

- Coughing and/or wheezing
- Hoarseness
- Pneumonia
- Belching
- Laryngitis
- Otitis media
- Enamel decay.

Alarm Symptoms That, in Presence of GERD Symptoms, Necessitate Immediate Endoscopy

- Dysphagia
- Odynophagia
- Anorexia
- Unintentional weight loss
- Hematemesis/melena
- Persistent vomiting

Differentials

- Achalasia
- Choleithiasis
- Coronary Artery Atherosclerosis
- Esophageal Spasm
- Esophageal Cancer
- Esophagitis
- Chronic Gastritis
- Irritable bowel syndrome
- Peptic Ulcer Disease

WORKUP

- Barium Esophagogram
- Esophagogastroduodenoscopy
- Esophageal manometry
- Radionuclide measurement of gastric emptying
- Ambulatory 24-hour pH monitoring
- Empiric trial of proton pump inhibitor
- Multichannel intraluminal impedance
- Bravo system

Esophagogastroduodenoscopy (EGD)

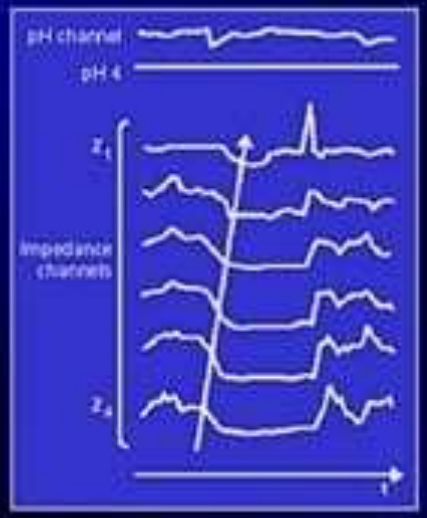
Advantages

- Enables visualization and biopsy of esophageal epithelium
- Determines presence of esophagitis, other complications
- Discriminates between reflux and non-reflux esophagitis

Limitations

- Need for sedation or anesthesia
- Endoscopic grading systems not yet validated for pediatrics
- Poor correlation between endoscopic appearance and histopathology
- Generally not useful for extra-esophageal GERD

Multiple Intraluminal Electrical Impedance Measurement



Advantages

- Detects nonacidic GER episodes
- Detects brief (<15 s) acidic GER episodes
- Useful for studying respiratory symptoms and GER in infants

Limitations

- Normal values in pediatric age groups not yet defined
- Analysis of tracings time-consuming
- Not reliable for upper esophageal GER episodes

Esophageal pH Monitoring

Advantages

- Detects episodes of reflux
- Determines temporal association between acid GERD and symptoms
- Determines effectiveness of esophageal clearance mechanisms
- Assesses adequacy of H_2RA or PPI dosage in unresponsive patients

Limitations

- Cannot detect non-acidic reflux
- Cannot detect GERD complications associated with normal range of GER
- Not useful in detecting association between GERD and apnea unless combined with other techniques

Rudolph CD, et al. *J Pediatr Gastroenterol Nutr.* 2001;32(suppl 2):S1-S31

Medical Treatment

Lifestyle Modifications

- Losing weight (if overweight)
- Avoiding alcohol, chocolate, citrus juice, and tomato-based products
- Avoiding large meals
- Waiting 3 hours after a meal before lying down
- Elevating the head of the bed 8 inches

Treatment Cont.

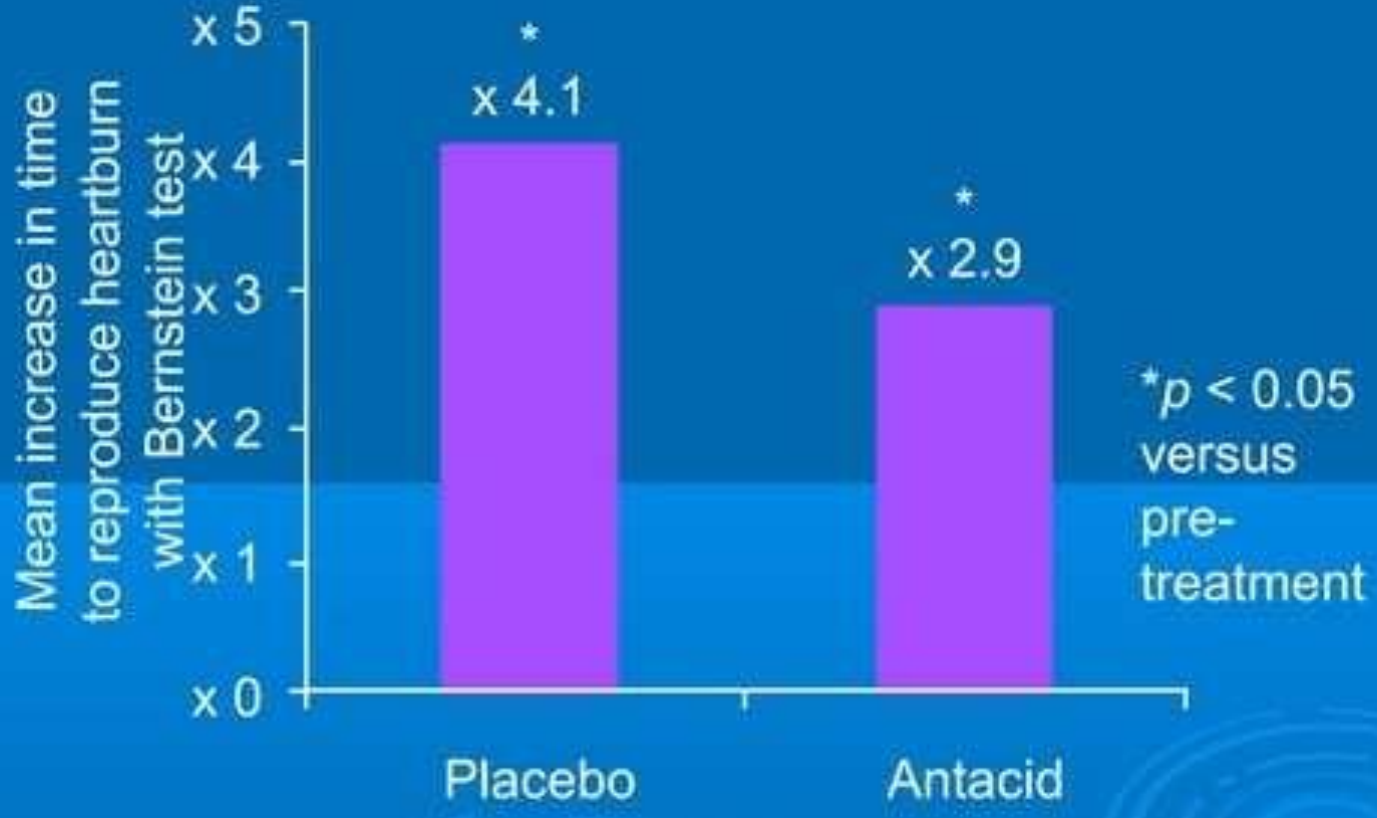
Pharmacologic Therapy

- Antacids
- Prokinetic agents: metoclopramide hydrochloride
- H2 receptor antagonists: Ranitidine, Cimetidine, Famotidine, Nizatidine
- Proton pump inhibitors: Omeprazole, Rabeprazole, Esomeprazole,

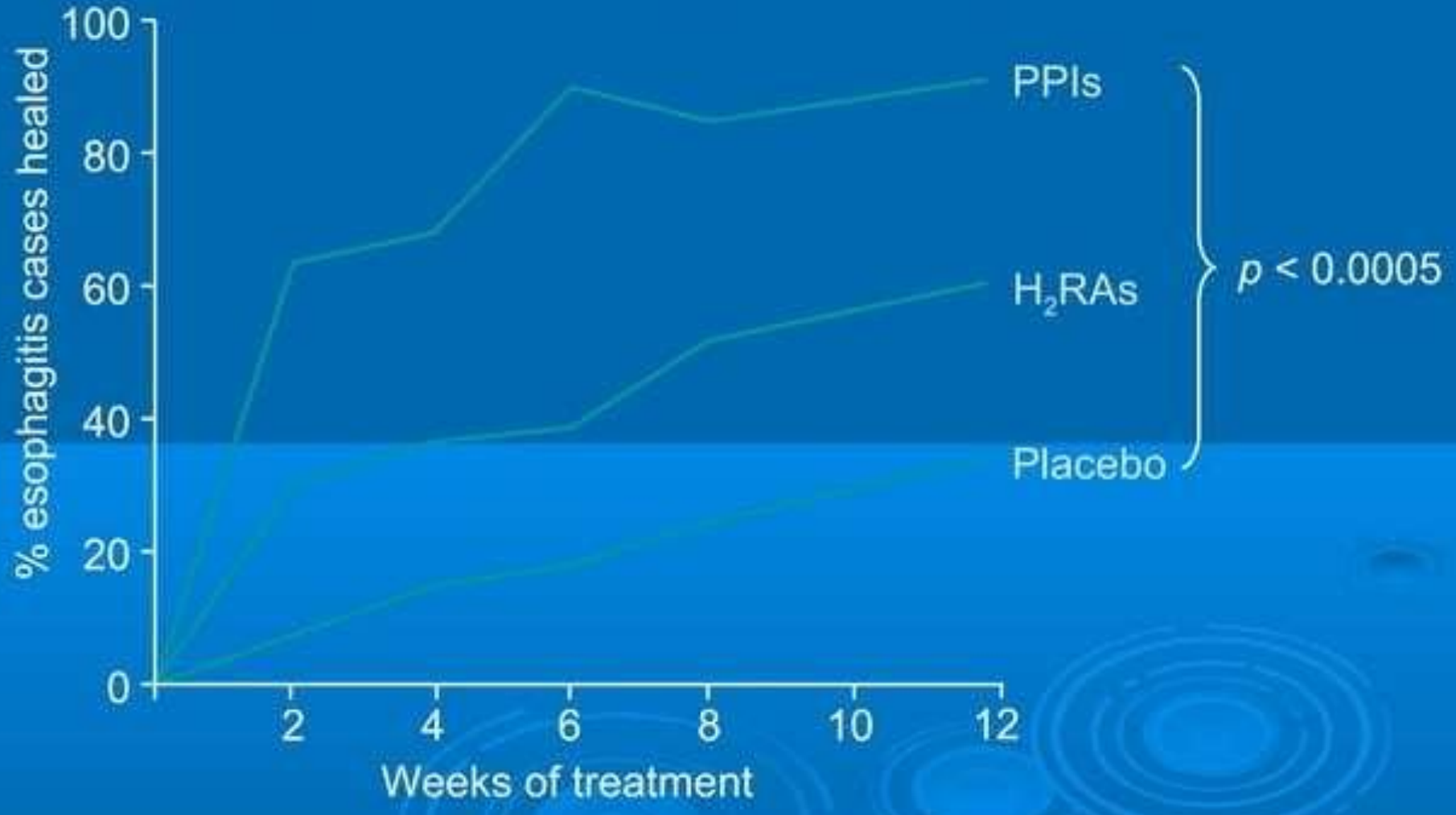
Treatments Cont.

- **Antacids**
  - Prompt but temporary relief
  - No objective proof of superiority to placebo
- **Prokinetics**
  - Improvement of symptoms in mild GERD
  - Effective for healing only mild erosive esophagitis
  - Can be useful in a select patient population
- **H_2RAs**
  - Relief of symptoms in ~50% of patients
  - Effective for healing only mild erosive esophagitis

Antacids may be no more effective than placebo



PPIs are the most effective drugs for the initial treatment of GERD



Chiba et al. Gastroenterology 1997

Complications.

- Esophagitis
- Strictures
- Barrett esophagus
- Adenocarcinoma
- Respiratory complications: pneumonia, asthma, and interstitial lung fibrosis.

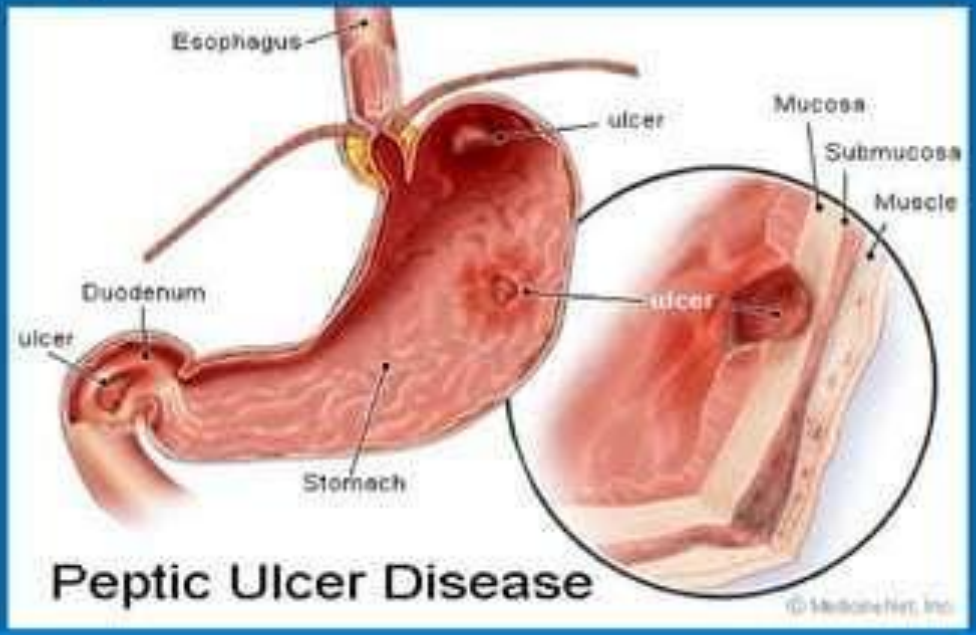
Complications cont.

Complications cont.

Points to Remember

- Endoscopy reveals that 50% of patients do not have esophagitis.
- The only way to determine if abnormal reflux is present and if symptoms are actually caused by GERD is through pH monitoring.
- Achalasia can present with heartburn. Only esophageal manometry and pH monitoring can be used to distinguish achalasia from GERD.

Peptic Ulcer Disease



Peptic ulcers are defects in the gastrointestinal mucosa that extend through the muscularis mucosa.

Prevalence

Lifetime prevalence is approximately 11-14% for men.

Lifetime prevalence is approximately 8-11% for women.

Age trends for ulcer occurrence reveal declining rates in younger men, particularly for duodenal ulcer, and increasing rates in older women.

Etiology

- *Helicobacter pylori* infection
- Consumption of NSAIDS
- *Severe physiologic stress*
- Hypersecretory states

Symptoms

- Epigastric pain
- Nausea
- Vomiting
- Dyspepsia
- Heartburn
- Chest discomfort
- Anorexia, weight loss
- Hematemesis or melena

Signs

- Epigastric tenderness
- Epigastric pain
- Guaiac-positive stool
- Succussion splash

Differentials

- Biliary Colic
- Cholecystitis
- Cholelithiasis
- Gastritis, Acute
- Gastritis, Chronic
- Gastroesophageal Reflux Disease
- Mesenteric Artery Ischemia
- Myocardial Ischemia
- Pancreatic Cancer
- Pancreatitis, Acute
- Pancreatitis, Chronic

WORKUP

- Double-contrast radiography
- Detection of *H pylori* infection
- Endoscopic tests
- Serum gastrin

Medical Treatment

- *H. pylori* eradication: Dual/Triple therapy
- Cessation of NSAIDs
- H2-receptor antagonists
- Proton Pump Inhibitors
- Prostaglandins misoprostol
- Sucralfate sucrose-aluminum complex promotes ulcer healing

FDA-Approved Treatment Regimes for *H. pylori* Infection

- Omeprazole 20 mg BID + Clarithromycin 500 mg BID + Amoxicillin 1 g BID for 10 days
- Lansoprazole 30 mg BID +Clarithromycin 500 mg BID + Amoxicillin 1 g BID for 10 days
- Bismuth subsalicylate (Pepto Bismol) 525 mg QID + Metronidazole 250 mg QID + Tetracycline 500 mg QID X 14 days + H_2 receptor antagonist x 4 wks

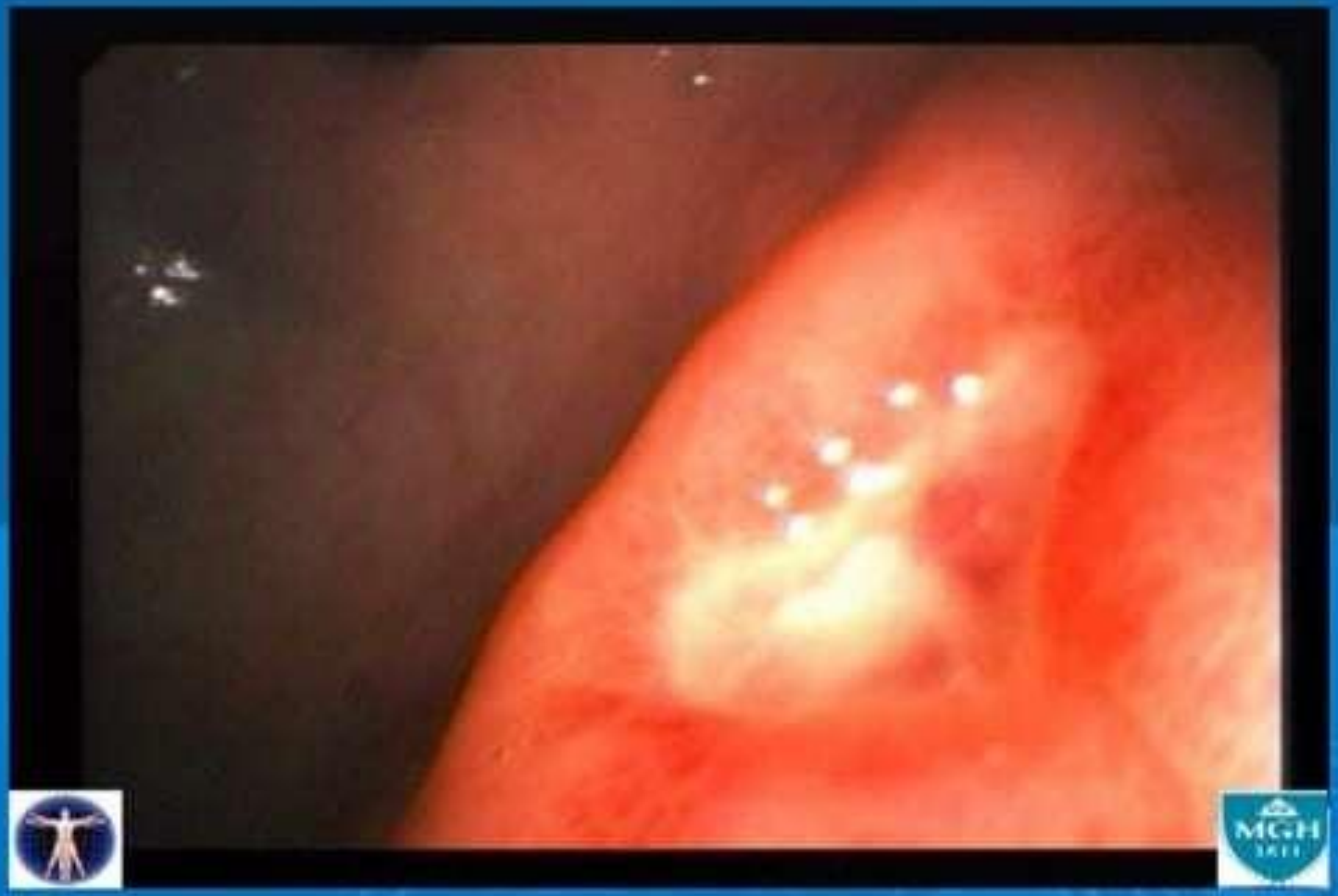
Adjunctive Treatment

- **Caffeine and Alcohol** - Both of these stimulate the secretion of stomach acid and should be avoided in the acute phase of an ulcer.
- **Cigarettes** - Nicotine will delay the healing of an ulcer.
- **Antacids** - These agents, can be used for relief of peptic ulcer symptoms. Except for bismuth (Pepto Bismol),- they do not help heal ulcers.

Complications

- Hemorrhage
- Confined Perforation
- Open Perforation
- Gastric outlet obstruction
- Recurrence
- Stomach cancer: Adenocarcinoma, Gastric/MALT lymphomas

Clean Ulcer Induced by Aspirin



Gastric Ulcer H.Pylori & Aspirin

MCQS

1) Gold standard for investigating GERD?
   A) Endoscopic Tests
   B) Esophageal manometer
   C) Multichannel intraluminal impedance
   D) Bravo System
   E) None of the above

2) Which of the following statements is false?

A) Antacids are not clearly superior to placebos

B) NSAIDS most common cause of PUD

C) Dysphagia is an alarm symptoms

D) H2RA Effective healing only mild esophagitis

E) Nicotine delays healing of an ulcer

Thanks