Dyspepsia & Peptic Ulcer Disease

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Dyspepsia

- A common symptom with an extensive differential diagnosis
- The presence of one or more of the following: postprandial fullness, early satiation, epigastric pain, or burning

- **ETIOLOGY:**
- 20 to 25 percent of patients with dyspepsia have an underlying organic cause :

❖ peptic ulcer disease

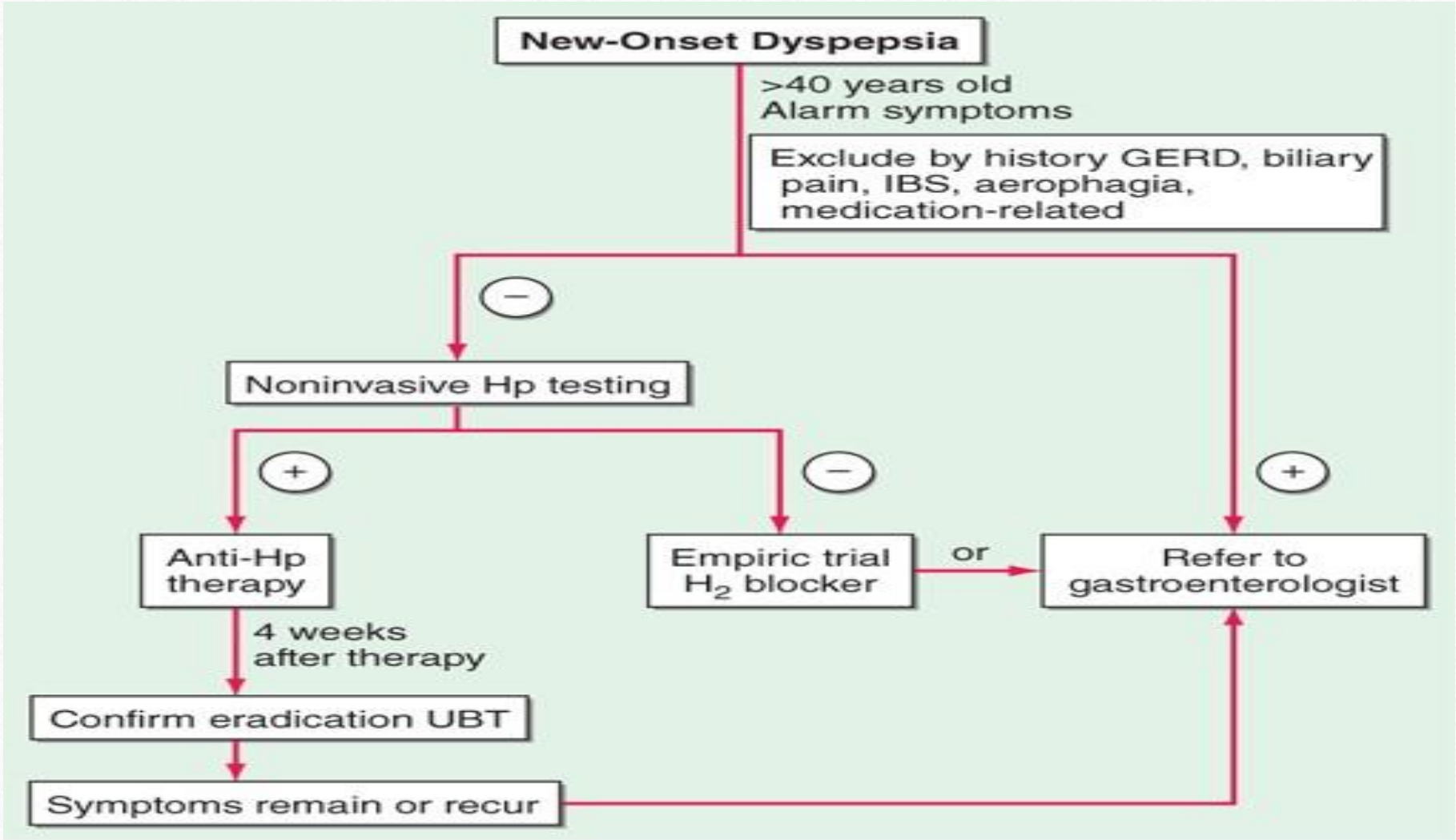
❖ *Helicobacter pylori*

❖ gastroesophageal reflux

❖ medications (nonsteroidal antiinflammatory agents being the most common offender)

❖ gastric malignancy

- up to 75 to 80 percent of patients have functional (idiopathic or nonulcer)



Peptic Ulcer Disease

- Peptic ulcers are defects in the gastric or duodenal mucosa that extend through the muscularis mucosae.

- an important cause of morbidity and health care costs

- The pooled incidence of uncomplicated peptic ulcer disease (PUD) was approximately one case per 1000 person-years in the general population
- The incidence of ulcer complications was approximately 0.7 cases per 1000 person-years

- Higher rates are found in countries where *H. pylori* infection is higher .
- Ulcer incidence increases with age for both duodenal ulcers (DUs) and gastric ulcers (GUs)
- The incidence of uncomplicated PUD reached a plateau with age, whereas for complicated PUD, the incidence increases with age
- DUs occur two decades earlier than GUs, particularly in males.

ETIOLOGY

- Two major factors:

  Helicobacter pylori (*H. pylori*) infection

  The consumption of nonsteroidal anti-inflammatory drugs (NSAIDs)

Pathogenesis of Non-Hp and Non-NSAID Ulcer Disease

Infection

- Cytomegalovirus
- Herpes simplex virus
- *Helicobacter heilmannii*

Drug/Toxin

- Bisphosphonates
- Chemotherapy
- Clopidogrel
- Crack cocaine
- Glucocorticoids (when combined with NSAIDs)
- Mycophenolate mofetil
- Potassium chloride

Miscellaneous

- Basophilia in myeloproliferative disease
- Duodenal obstruction (e.g., annular pancreas)
- Infiltrating disease
- Ischemia
- Radiation therapy
- Eosinophilic infiltration
- Sarcoidosis
- Crohn's disease
- Idiopathic hypersecretory state

Abbreviations: Hp, *H. pylori*; NSAIDs, nonsteroidal anti-inflammatory drugs.

Risk factors

- chronic obstructive lung disease
- chronic renal insufficiency
- current or tobacco use
- older age
- coronary heart disease
- former alcohol use
- African-American race
- obesity
- diabetes
- Selective serotonin reuptake inhibitors (SSRIs)
- gastric bypass surgery

Genetic factors

- Genetic variations in pro-inflammatory cytokines (eg, IL-1B, IL-6, IL-8, and tumor necrosis factor (TNF)-alpha) and anti-inflammatory cytokines (IL-10)
- polymorphism of cytochrome P450 2C9 may delay the metabolism of several NSAIDs, with a prolonged duration of drug effect, enhancing the ulcerogenic effect
- Blood groups O and A, the Lewis phenotype Le (a + b-), and non-secretors of ABH in particular have been associated with an increased risk of peptic ulcers

Diet

- high consumption of fruits and vegetables, dietary fiber, and vitamin A were associated with a reduced risk of ulcer disease

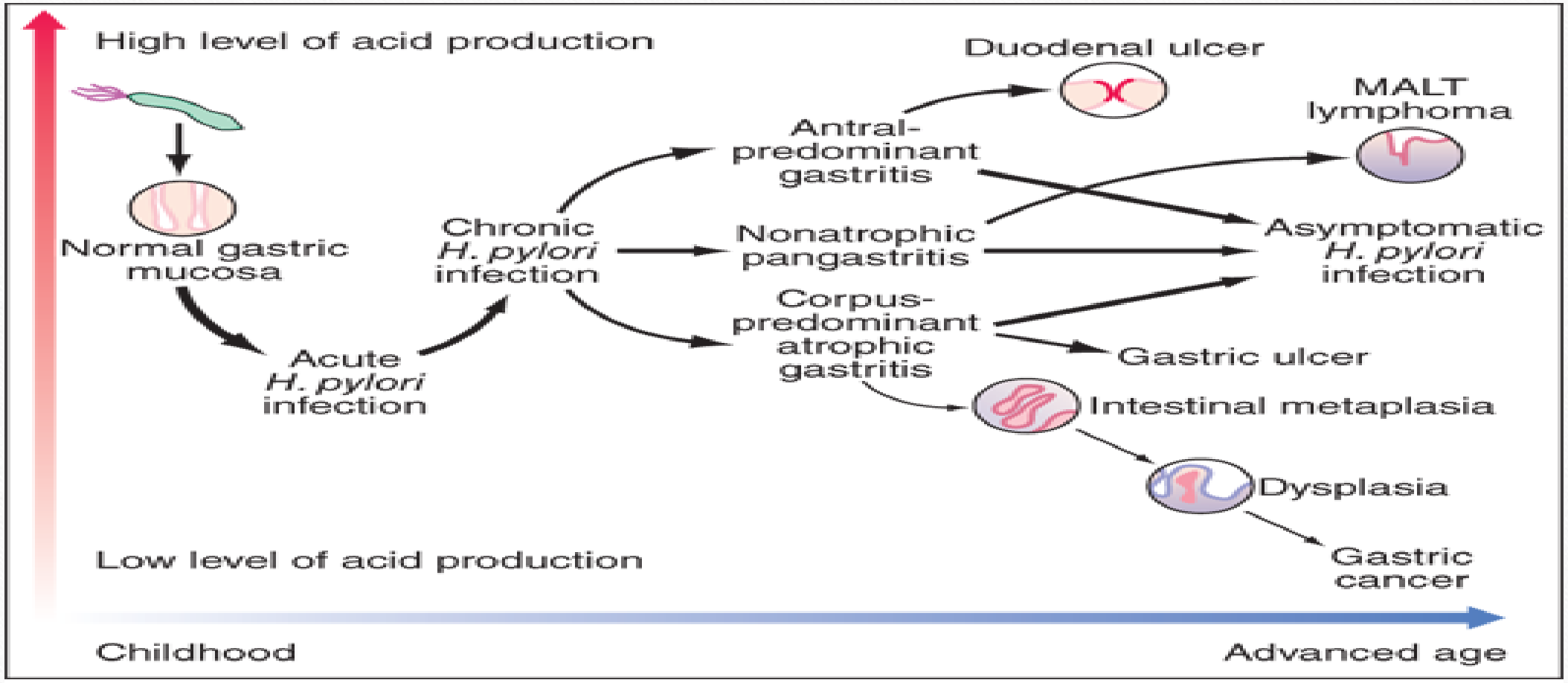
Sleep and sleep apnea

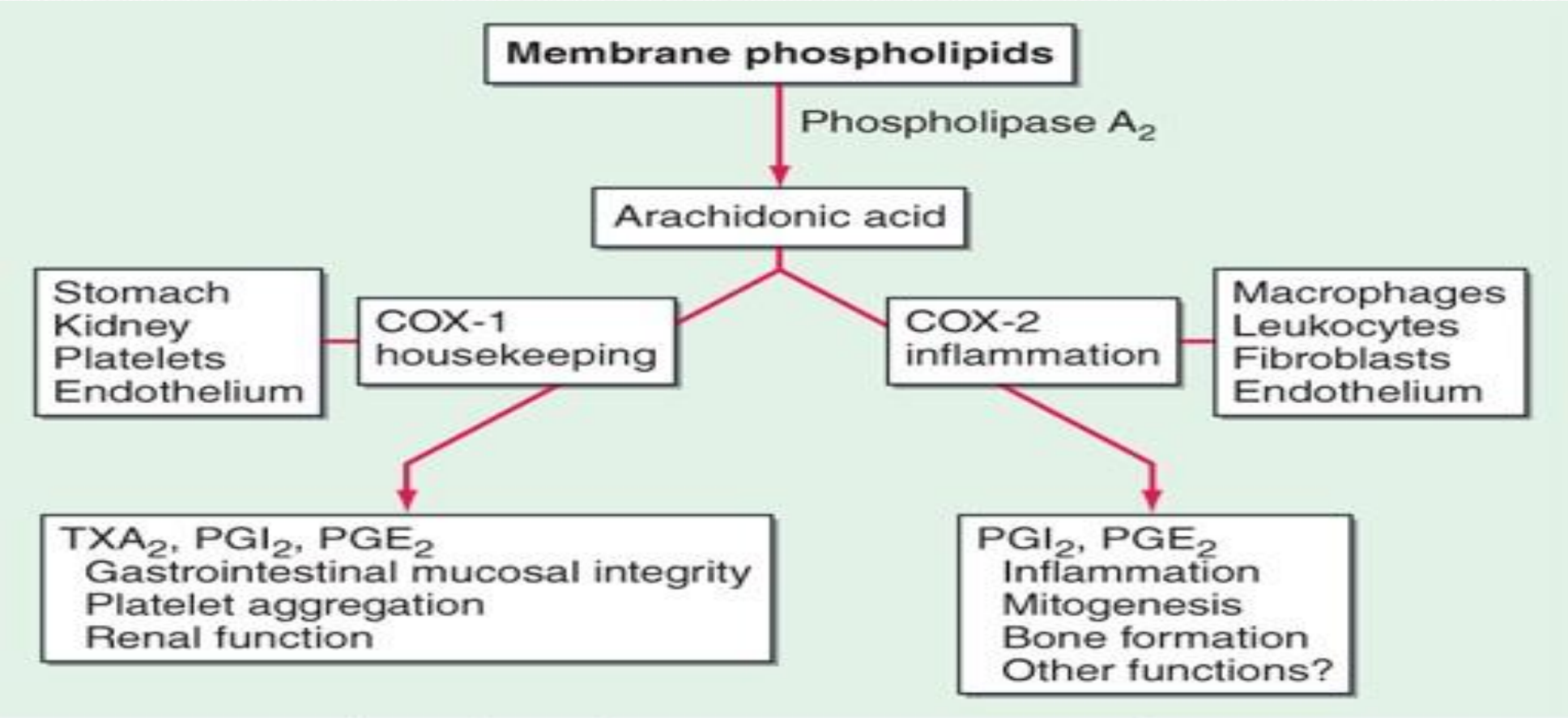
- Disturbances in sleep may be a risk factor for :

  ulcer **disease**

  complications of peptic ulcer disease

  ulcer **recurrence**





Source: Joseph Loscalzo, Anthony Fauci, Dennis Kasper, Stephen Hauser, Dan Longo, J. Larry Jameson: Harrison's Principles of Internal Medicine, 21e

CLINICAL MANIFESTATIONS

- **Asymptomatic**

  -Approximately 70 percent of peptic ulcers

  -may later present with ulcer-related complications such as hemorrhage or perforation

  -43 and 87 percent of patients with bleeding peptic ulcers present without antecedent symptoms

  - Older adults and individuals on nonsteroidal anti-inflammatory

- **Symptomatic**

- Abdominal pain

most prominent symptom

80 percent of patients with endoscopically diagnosed ulcers

Radiation of pain to the back may occur

The "classic" pain of duodenal ulcers occurs two to five hours after a meal when acid is secreted in the absence of a food buffer, and at night (between about 11 PM and 2 AM) when the circadian pattern of acid secretion is maximal

- Pyloric channel ulcers:

-visceral sensitization and gastroduodenal dysmotility include epigastric pain that worsens with eating, postprandial belching and epigastric fullness, early satiety, fatty food intolerance, nausea, and occasional vomiting

- **Ulcer complications :**

-Bleeding: the most common complication

-penetration or fistulization

-perforation

-Gastric outlet obstruction :early satiety, bloating, indigestion, anorexia, nausea, vomiting, epigastric pain shortly after eating, and weight loss

DIFFERENTIAL DIAGNOSIS

- drug-induced dyspepsia
- biliary disease
- gastric malignancy
- less commonly, chronic pancreatitis

DIAGNOSIS

- Endoscopy is the most accurate diagnostic test for peptic ulcer

Disease with 90% sensitivity

Indications for ulcer biopsy

- **Malignant appearing ulcers**

❖ An ulcerated mass protruding into the lumen

❖ Folds surrounding the ulcer crater that are nodular, clubbed, fused, or stop short of the ulcer margin

❖ Overhanging, irregular, or thickened ulcer margins

- **Selected benign appearing ulcers**
- Routine biopsy of benign-appearing duodenal ulcers is not recommended
- In areas with high gastric cancer incidence, all gastric ulcers should be biopsied. Whether to biopsy benign-appearing gastric ulcers in areas of low gastric cancer incidence is controversial.

- **Specific etiology suspected**

In patients with some systemic infiltrative or inflammatory conditions (eg, sarcoidosis, Crohn disease, eosinophilic gastroenteritis)

ESTABLISHING THE ETIOLOGY

- All patients diagnosed with peptic ulcer disease should undergo testing for *H. pylori* infection.
- Drug (NSAID ,…) HX
- Other causes of peptic ulcer disease should be considered when *H. pylori* and use of NSAIDs have been excluded.

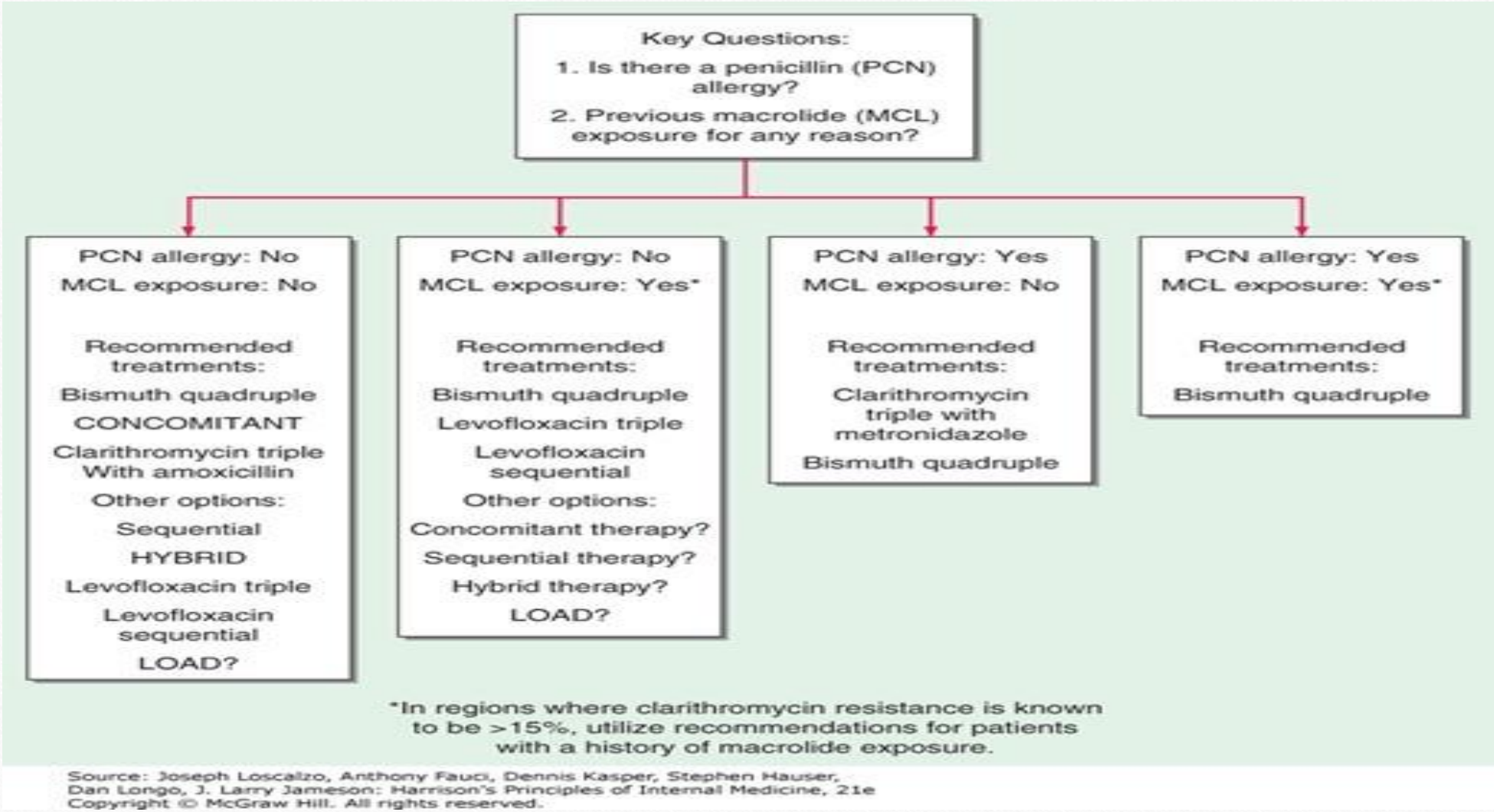
TREATMENT

- **Treat the underlying etiology**
- H-pylori eradication consist with :

1.higher healing rates in patients with duodenal and gastric ulcers

2. lower ulcer recurrence rates

- Patients with peptic ulcers should be advised to avoid NSAIDs, including aspirin



Initial antisecretory therapy

- All patients with peptic ulcers should receive antisecretory therapy with a **proton pump inhibitor** (PPI) (eg, omeprazole 20 to 40 mg daily or equivalent) to facilitate ulcer healing
- PPI use results in faster control of peptic ulcer disease symptoms and higher ulcer healing rates as compared with H2RA.

duration

- **Complicated ulcer:**
- **high-dose twice-daily** PPI treatment is reasonable to enhance healing (eg, oral omeprazole 40 mg twice daily), but dosing should generally be **reduced to once daily after four weeks**. In patients with complicated duodenal ulcers, we suggest antisecretory treatment for **four to eight** weeks. In patients with complicated gastric ulcers, we suggest antisecretory therapy for a total duration of **8 to 12 weeks**. In patients with gastric ulcers, we discontinue antisecretory therapy only after ulcer healing has been **confirmed by upper endoscopy**.

- **Uncomplicated ulcer H. pylori-positive ulcer :**

-PPI (eg, omeprazole 20 mg twice daily) given for 14 days, along with the antibiotic regimen to treat *H. pylori*

-Additional antisecretory therapy is not needed in the absence of persistent or recurrent symptoms

- **Uncomplicated NSAID-induced ulcer** :

- should be treated with a PPI (eg, omeprazole 20 to 40 mg daily) for four to eight to weeks

-In patients with peptic ulcers who need to remain on NSAIDs or aspirin, maintenance antisecretory therapy with a PPI (eg, omeprazole 20 mg daily)

- **Non-H. pylori, non-NSAID ulcer:**

- initial PPI therapy for four weeks for uncomplicated duodenal ulcers, and eight weeks for a gastric ulcer or any complicated ulcer before repeat endoscopic evaluation to assess for ulcer healing

- **continue long-term acid inhibitory therapy with PPIs**

SUBSEQUENT MANAGEMENT

Repeat upper endoscopy in selected patients

- **Duodenal ulcers:**

❖repeat upper endoscopy is not routinely recommended

❖Endoscopy should be repeated in: patients with signs of ongoing bleeding , symptom persist or recure

Gastric ulcers:

-surveillance endoscopy (with biopsies of the ulcer if still present) be performed after 8 to 12 weeks :

- Symptoms persist despite medical therapy
- Unclear etiology
- Giant ulcer (>2 cm)
- Biopsies not performed or inadequate sampling on the index upper endoscopy

- Ulcer appears suspicious for malignancy on index upper False-negative biopsy specimen results have been reported to occur in 2 percent to 5 percent of malignant ulcers.
- Patients with bleeding ulcers at initial presentation who show signs of continued bleeding .

- Risks factors for gastric cancer (eg, age >50 years, *Helicobacter pylori*, immigrants from a region with high prevalence of gastric cancer ,family history of gastric cancer, the presence of gastric atrophy, adenoma, dysplasia, intestinal metaplasia).

PREVENTION OF RECURRENCE

- **Drug (NSAID) avoidance**
- **H. pylori eradication**
- **Maintenance antisecretory therapy**

- **Maintenance antisecretory therapy: standard dose of PPI**

❖ Giant (>2 cm) peptic ulcer and age >50 years or multiple co-morbidities

❖ *H. pylori*-negative, NSAID-negative ulcer disease

❖ Failure to eradicate *H. pylori* (including salvage therapy)

❖ Frequently recurrent peptic ulcers (>2 documented recurrences a year)

❖ Continued NSAID use

TREATMENT DURING PREGNANCY AND LACTATION

- Acid suppression with a proton pump inhibitor

- If *Helicobacter pylori* (*H. pylori*) is present, antimicrobial treatment is typically deferred until after delivery **unless** hyperemesis gravidarum is present