



Approach to the adult with dyspepsia

Dyspepsia



- Common symptom
- Extensive differential diagnosis
- Heterogeneous pathophysiology
- 20 percent of the population
- Most affected do not seek medical evaluation
- Substantial health care costs and significantly affects quality of life
- Overlap with GERD and IBS is common and does not exclude the diagnosis

Etiology

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graph TD; A[Etiology] --> B[With underlying organic cause]; A --> C[Functional dyspepsia];
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With underlying organic cause

- 20 to 25 percent

Functional dyspepsia

- 75 to 80 percent
- idiopathic or nonulcer dyspepsia
- exclusion of other organic causes

Dyspepsia caused by structural or biochemical disease



Peptic ulcer disease

Helicobacter pylori gastritis

Gastroesophageal reflux disease (GERD)

Biliary pain

Chronic abdominal wall pain

Gastric or esophageal cancer

Gastroparesis

Pancreatitis

Carbohydrate malabsorption

Medications (including potassium supplements, digitalis, iron, theophylline, oral antibiotics [especially ampicillin and erythromycin], nonsteroidal antiinflammatory drugs [NSAIDs], glucocorticoids, niacin, gemfibrozil, narcotics, colchicine, quinidine, estrogens, levodopa)

Infiltrative diseases of the stomach (eg, Crohn disease, sarcoidosis)

Metabolic disturbances (hypercalcemia, hyperkalemia)

Hepatocellular carcinoma

Ischemic bowel disease, celiac artery compression syndrome, superior mesenteric artery syndrome

Systemic disorders (diabetes mellitus, thyroid and parathyroid disorders, connective tissue disease)

Intestinal parasites (*Giardia*, *Strongyloides*)

Abdominal cancer, especially pancreatic cancer

Differential Diagnosis

- GERD
- *H pylori* infection
- Gastritis
- Peptic ulcer disease
- Celiac disease
- Irritable bowel syndrome
- Small intestinal bacterial overgrowth
- Chronic pancreatitis
- Gastroparesis
- Acute cholecystitis
- Gastric carcinoma

Alarm features in dyspepsia



Unintentional weight loss

Dysphagia

Odynophagia

Unexplained iron deficiency anemia

Persistent vomiting

Palpable mass or lymphadenopathy

Family history of upper gastrointestinal cancer

Functional dyspepsia defined by

One or more of the following:

- Postprandial fullness
- Early satiation
- Epigastric pain
- Epigastric burning

Postprandial distress syndrome (PDS)

Epigastric pain syndrome (EPS)

with no evidence of systemic, organic, metabolic and structural disease using imaging or endoscopy

severe enough to interfere with the usual activities, occur at least 3 days per week over the last 3 months with an onset of at least 6 months in advance



- PDS patients report loss of appetite, nausea, retching, vomiting, and bloating.

Pathophysiology



- DISTURBANCES IN GASTRIC PHYSIOLOGY
- TWO MECHANISMS
MACROSCOPIC VS MICROSCOPIC.

Macroscopic mechanisms

- Delayed gastric emptying, rapid gastric emptying, gastric dysrhythmias, antral hypomotility and decreased accommodation
- Visceral hypersensitivity

Lower threshold for pain in the presence of normal gastric compliance

Abnormal processing of afferent input in the spinal cord or brain as well as dysfunction of mechanoreceptors.

Microscopic mechanisms



- IMPAIRED BARRIER FUNCTION

ALTERED SENSITIVITY TO DUODENAL ACID OR LIPIDS
IMPAIRS MUCOSAL INTEGRITY.

- GASTRODUODENAL INFLAMMATION

CHARACTERIZED BY ALTERED LYMPHOCYTES, INCREASED
EOSINOPHILS, AND MAST CELLS

- ALTERED GUT MICROBIOME

AND *HELICOBACTER PYLORI* INFECTION

Additional mechanisms



- Environmental insults: food, infections, allergen
food-inducing gastroduodenal physiologic changes
infections causing inflammation
allergen exposure can lead to eosinophil recruitment
in genetically predisposed patients
- Psychological factors: can cause increased activation of the amygdala, and the dysregulation of the HPA axis suggests that there is central processing of visceral stimuli

Initial evaluation of new onset dyspepsia



- History
- Physical examination
- Laboratory evaluation

Evaluation



- laboratory tests: CBC, complete metabolic panel, TFT, and ESR. *H pylori* Ag
- Instrumental examinations: EGD with biopsy and abdominal US
- More specialized testing if not respond to treatment
- Confirmation of the diagnosis based on the patient's history by excluding other diseases

Additional evaluation



- Based on symptoms (jaundice or pain suggestive of a biliary/pancreatic source).
- Patients with continued symptoms of dyspepsia for 3 months with symptom onset at least 6 months before diagnosis and no evidence of structural disease to explain the symptoms should be diagnosed and treated as functional dyspepsia.
- Allow 8 to 12 weeks before reassessing symptomatic response.

Management



- Symptom control: by changing acid secretion or modifying intestinal microbiota
- Explaining the diagnosis
- *H pylori* eradication: first treatment for all, improves symptoms and decreases the risk of peptic ulcers and gastric cancer
- TCA or prokinetic, if symptoms persist

Proton Pump Inhibitors (PPIs)



- Decrease mast cells, duodenal eosinophils, and mucosal permeability
- If symptoms improve discontinued 6 to 12 months to reduce the long-term risk of therapy

Antidepressants



- Refractory to the PPI
- partial response to PPIs in initial 8 weeks of PPI, (combined with PPI)
- Start with low-dose TCAs at night, Nortriptyline 10 mg, titrated up modestly according to symptoms.
- For 8 to 12 weeks and then continued for 6 months, then slowly tapered
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Prokinetic Agents



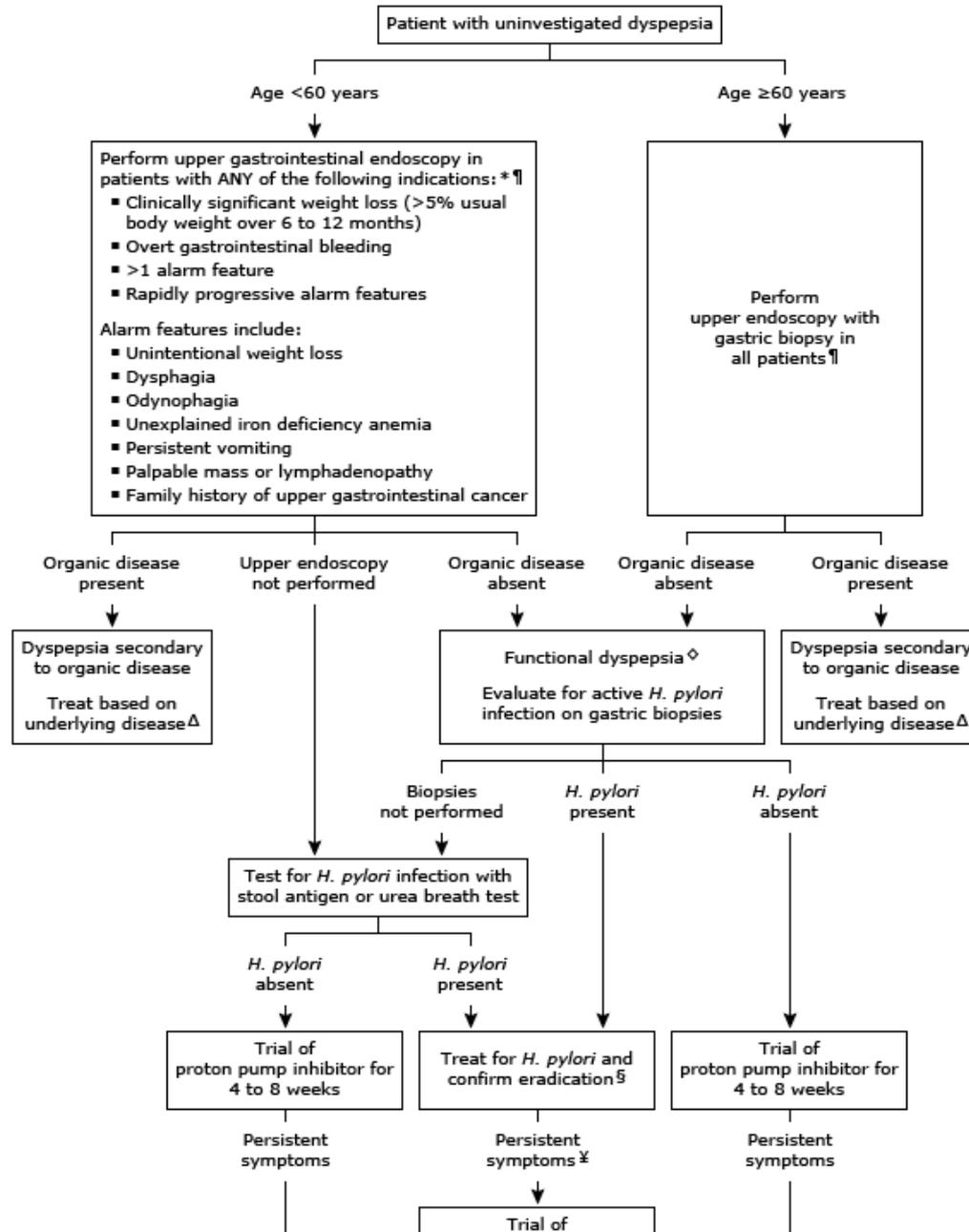
- A 4- to 8-week course is recommended when the above therapies fail

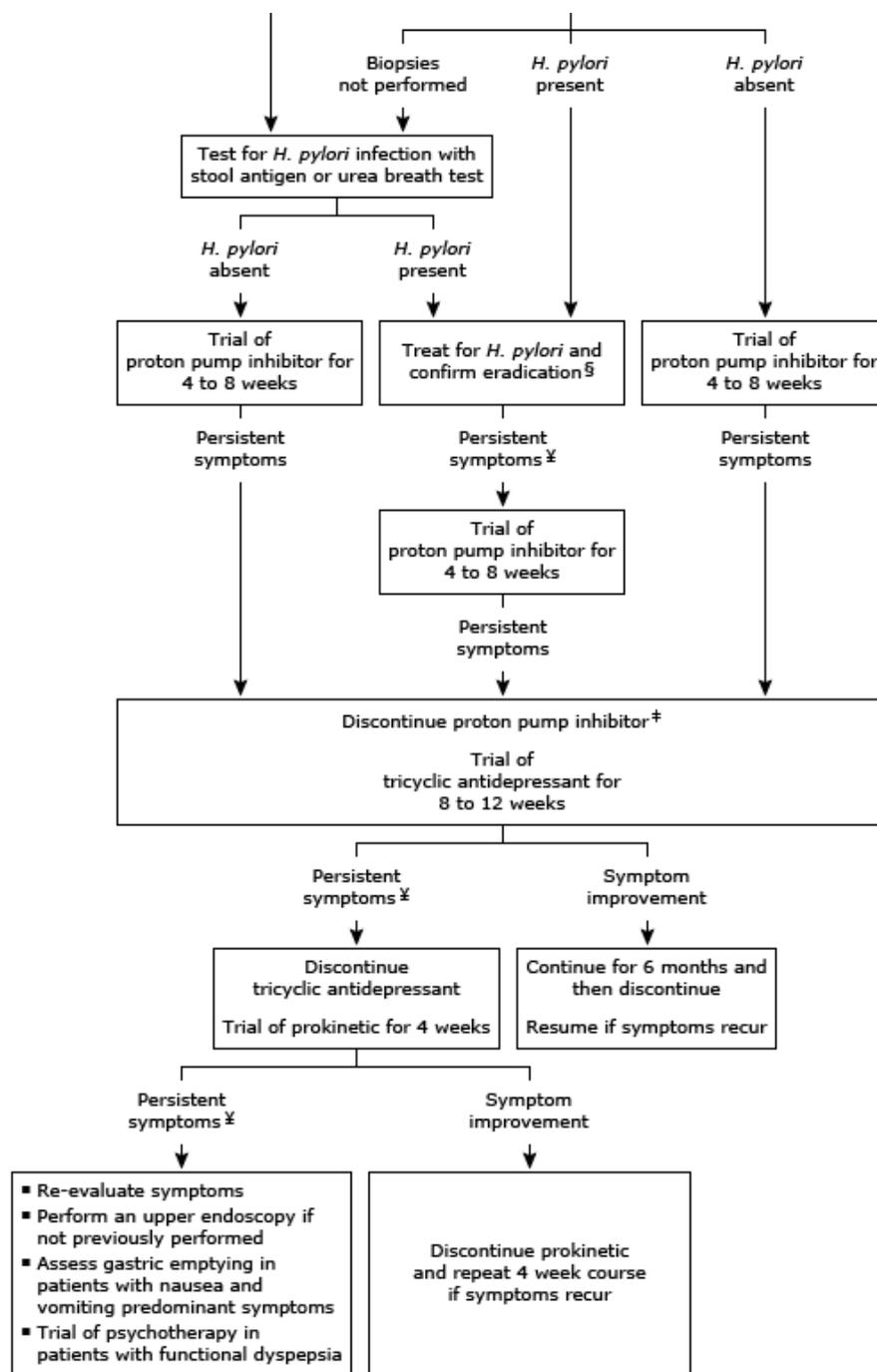
Optional Therapies



- Insufficient data
- Psychotherapy: for patients with associated stressors
fail to respond
- Buspirone: 10 mg, 3 times daily for 4 weeks
- Diet modification
- Herbal supplementation
- Lifestyle modification

Approach to the evaluation and management of dyspepsia in adults





Patient age ≥ 60 years



- **Upper endoscopy** The diagnostic yield of upper endoscopy increases with age
- In the absence of warning signs, upper endoscopy in younger patients is unlikely to find a worrisome cause
- **Additional evaluation and management** Most patients with a normal upper endoscopy and routine laboratory tests have functional dyspepsia.



- age cutoff of 45 or 50 years may be more appropriate for Asian Americans, Hispanic Americans, and Afro-Caribbean Americans due to an increased risk for gastric cancer
- European consensus statement recommends endoscopy in adults older than 45 years old who present with persistent dyspepsia
- diagnostic evaluation of the patient with dyspepsia need to be individualized based on symptoms, age, ethnic background, family history, nationality, and regional incidence of gastric cancer

Patient age <60 years



- **Upper endoscopy in selected patients** prior guidelines have recommended upper endoscopy for all patients with alarm features regardless of age
- Mucosal biopsies for *H. pylori* should be obtained use the Sydney protocol
- **Test and treat for Helicobacter pylori**
- **Antisecretory therapy**
- **Other therapies**
 - Tricyclic antidepressants and azapirones
 - Prokinetics

Endoscopy



- Clinically significant weight loss(>5% over 6-12 mo)
- Overt GIB
- > Alarm feature
- Rapidly progressive alarm feature

Alarm symptoms



- Unintended weight loss
- Persistent vomiting
- Dysphagia
- Odynophagia
- unexplained anemia or iron deficiency
- Palpable abdominal mass or lymphadenopathy
- Family history of upper gastrointestinal cancer

Evaluation of persistent symptoms



- Persistent *H. pylori* infection,
- Alternate diagnosis
- Functional dyspepsia
 - ongoing symptoms
 - the degree to which symptoms have improved or worsened
 - compliance with medications.
- Upper endoscopy
 - biopsies for *H. pylori* while culture and sensitivity testing & rule out celiac disease

Management of functional dyspepsia



H. pylori negative functional dyspepsia
(normal endoscopy) and failed and
adequate trial of PPI



1. Re-evaluate the symptoms and diagnosis
2. Consider other sources of abdominal pain: pancreas, colon, biliary tract
3. Does the patient have symptoms of delayed gastric emptying?
4. Does the patient have IBS?
5. Does the patient have panic disorder or other psychological issues?



Persistent symptoms
No other cause established



Consider: Antidepressants, hypnotherapy,
behavior therapy, prokinetic agents