

Endoscopic and Medical Management of Upper GI Diseases

Justin L. Sewell, MD, PhD, MPH, FACP

Associate Professor of Medicine, University of California San Francisco

Medical Director for Gastroenterology, San Francisco General Hospital

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Session Objectives

By the end of this presentation participants should:

- Become familiar with professional society guidelines regarding specific upper GI diseases
- Apply evidence to inform diagnostic and therapeutic recommendations for patients with upper GI diseases

A 45-year-old woman presents with 2 years of daily heartburn. She is mildly obese but otherwise healthy. She quit smoking 15 years ago and drinks 1-2 alcoholic beverages per week. She denies dysphagia or unexplained weight loss. What do you recommend?

Trial of PPI

Upper endoscopy

Trial of H2RA

Esophageal manometry

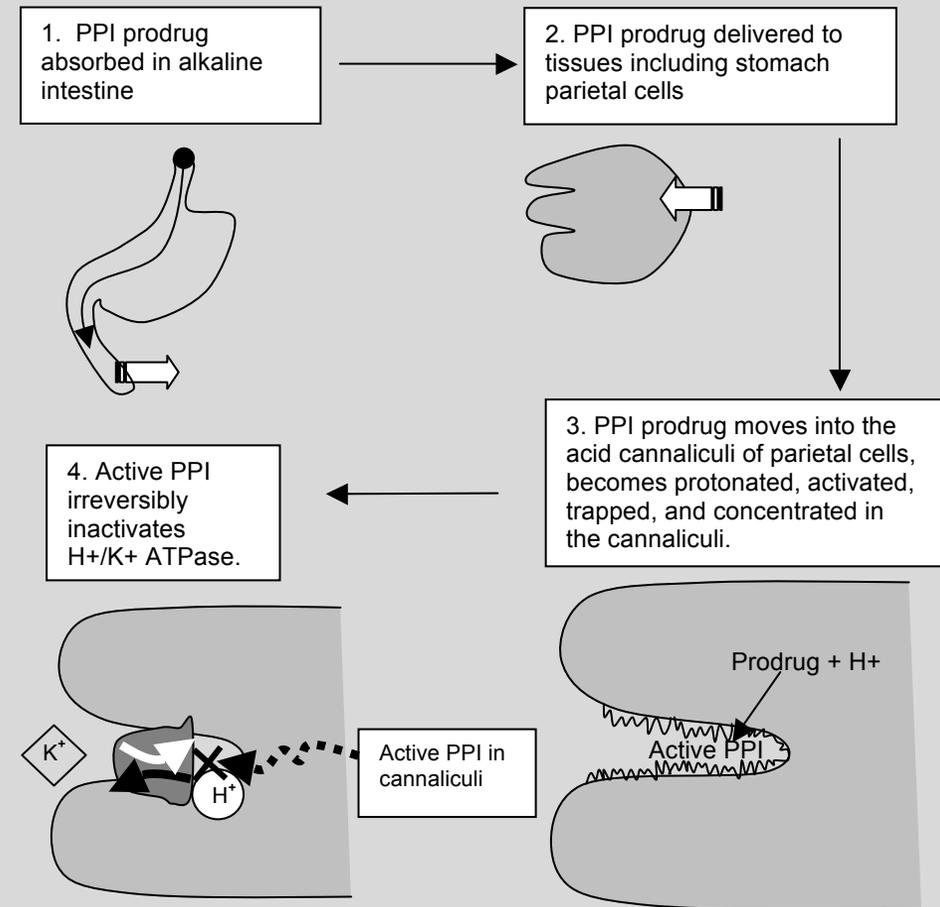
Esophageal pH study

Medical therapy for GERD

- On-demand therapy (antacids, H2RA) for occasional heartburn
- Daily therapy for more frequent symptoms (PPI more effective than H2RA)
- Start with daily PPI, increase to BID if incomplete relief
- Reasonable to try an alternate PPI
- Important to take 30 minutes before meals!

PPI timing

- 1-2 hour half-life but duration ~24 hours
- In fasting state only ~10% of pumps are active
- 30 minute pre-meal dosing → maximum serum levels at time when pumps are most active
- Pre-meal dosing can increase effectiveness 3-fold



The patient takes pantoprazole 40 mg BID 30 minutes before meals but still reports heartburn, mostly during the day. EGD shows a normal esophagus. What next steps should be taken?

Switch to a different PPI

Add nocturnal H2RA

Esophageal pH testing

Esophageal manometry

Newer GERD medications

- PPI: Dexlansoprazole
 - Two drug peaks: 1-2 hours and 4-5 hours
 - Longer duration of acid suppression
 - Less meal-dependent
- Potassium competitive acid blocker: Vonoprazan
 - More rapid onset of action
 - Not meal-dependent
 - Higher rate of erosive esophagitis healing
 - Approved in Japan, currently phase 3 trials in US

Endoscopic testing for GERD

EGD

- Lack of response to BID PPI
- Dysphagia or other alarm symptoms

pH study

- Lack of response to BID PPI
- No evidence of erosive esophagitis

Manometry

- Lack of response to BID PPI
- To prepare for antireflux surgery

Esophageal manometry is normal. pH study shows high-normal DeMeester score with good symptom correlation.

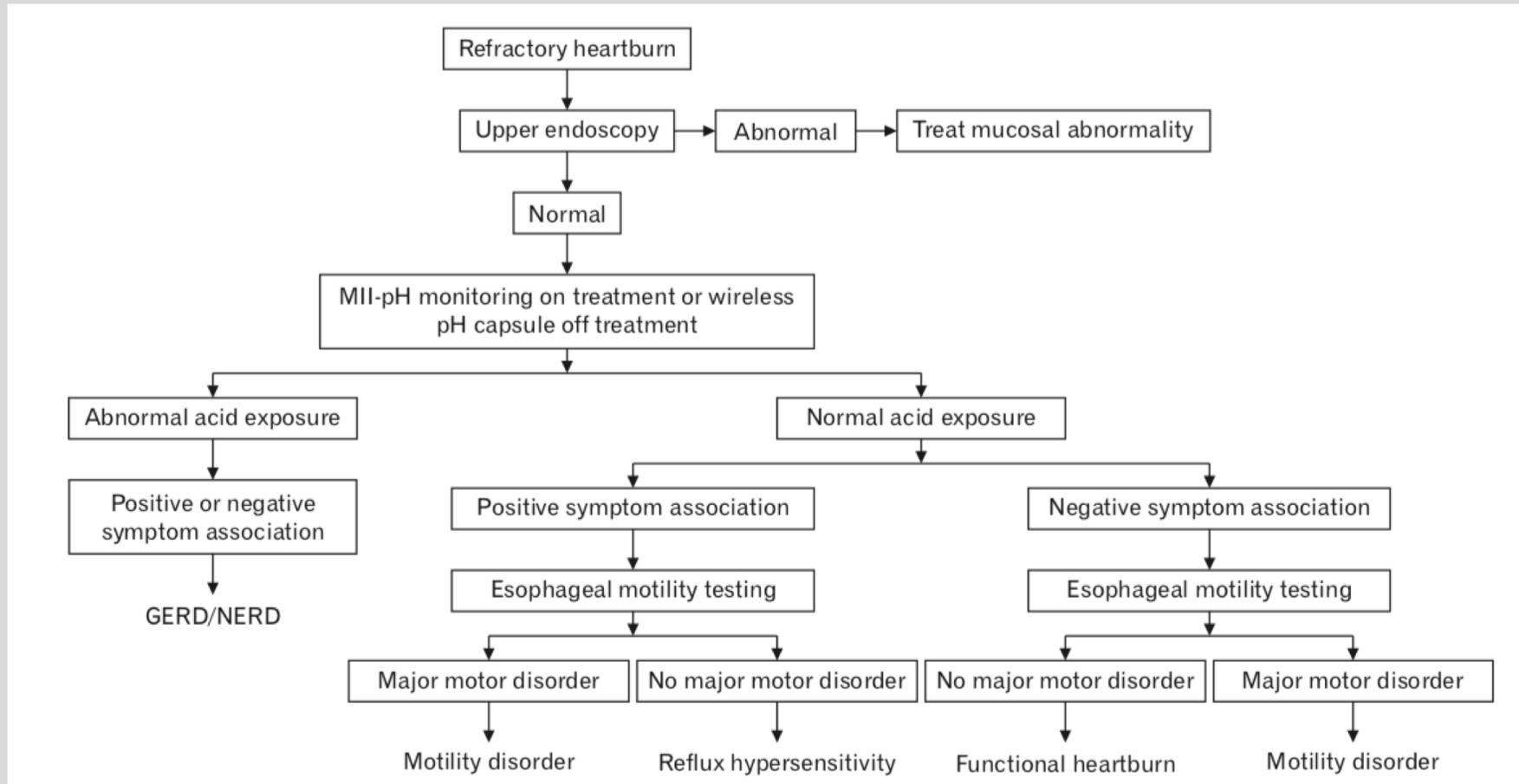
What should we do now?

Continue PPI

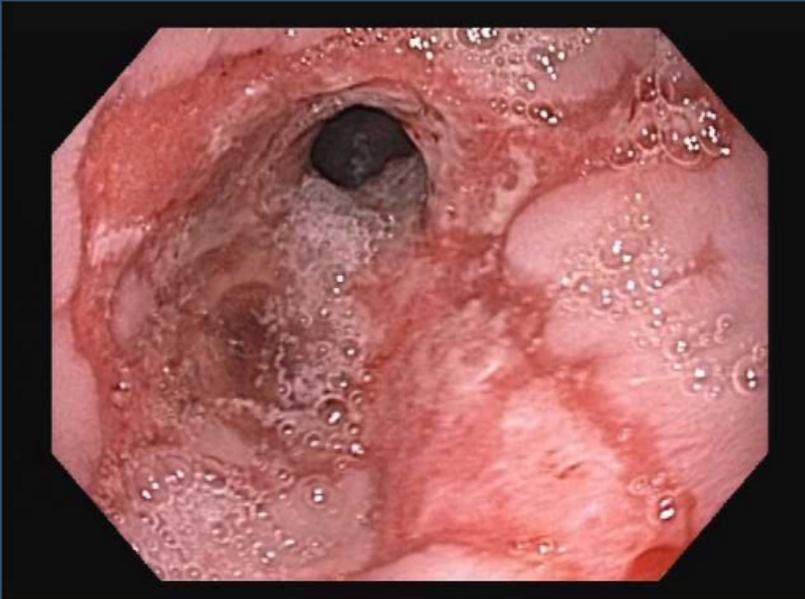
Add or switch to amitryptiline,
venlafaxine or buspirone

Refer to a surgeon for
fundoplication

Approach to GERD



A 65-year-old man presents with years of heartburn and mild dysphagia. EGD reveals the following. Should he have repeat EGD?



Yes, definitely **A**

Yes, if biopsies reveal intestinal metaplasia **B**

Yes, if symptoms are not controlled by BID PPI **C**

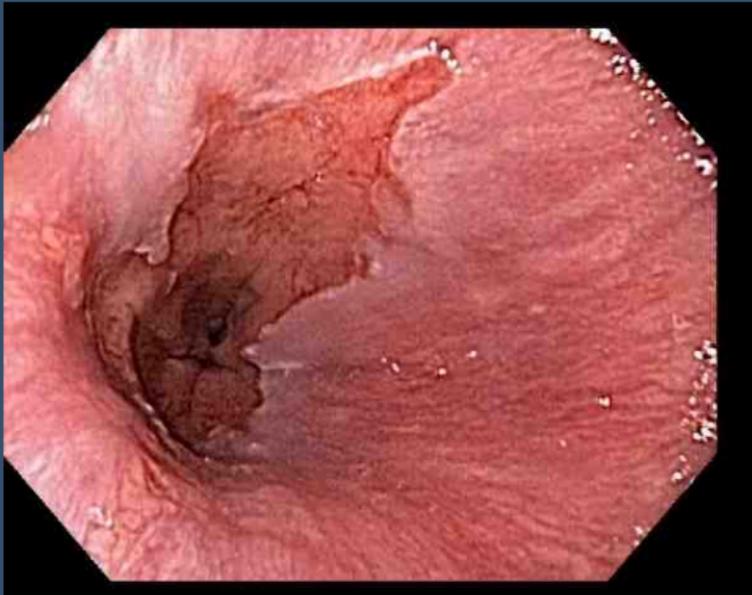
No **D**

EGD to assess for esophagitis healing

- AGA, ACG, ASGE guidelines lacking
- As many as 12% of patients may have Barrett's esophagus found once EE heals
- My own practice
 - Mild esophagitis (LA grade A or B) → symptomatic management
 - Moderate or severe esophagitis (grade C or D) → assess for healing, lifelong PPI unless significant lifestyle change

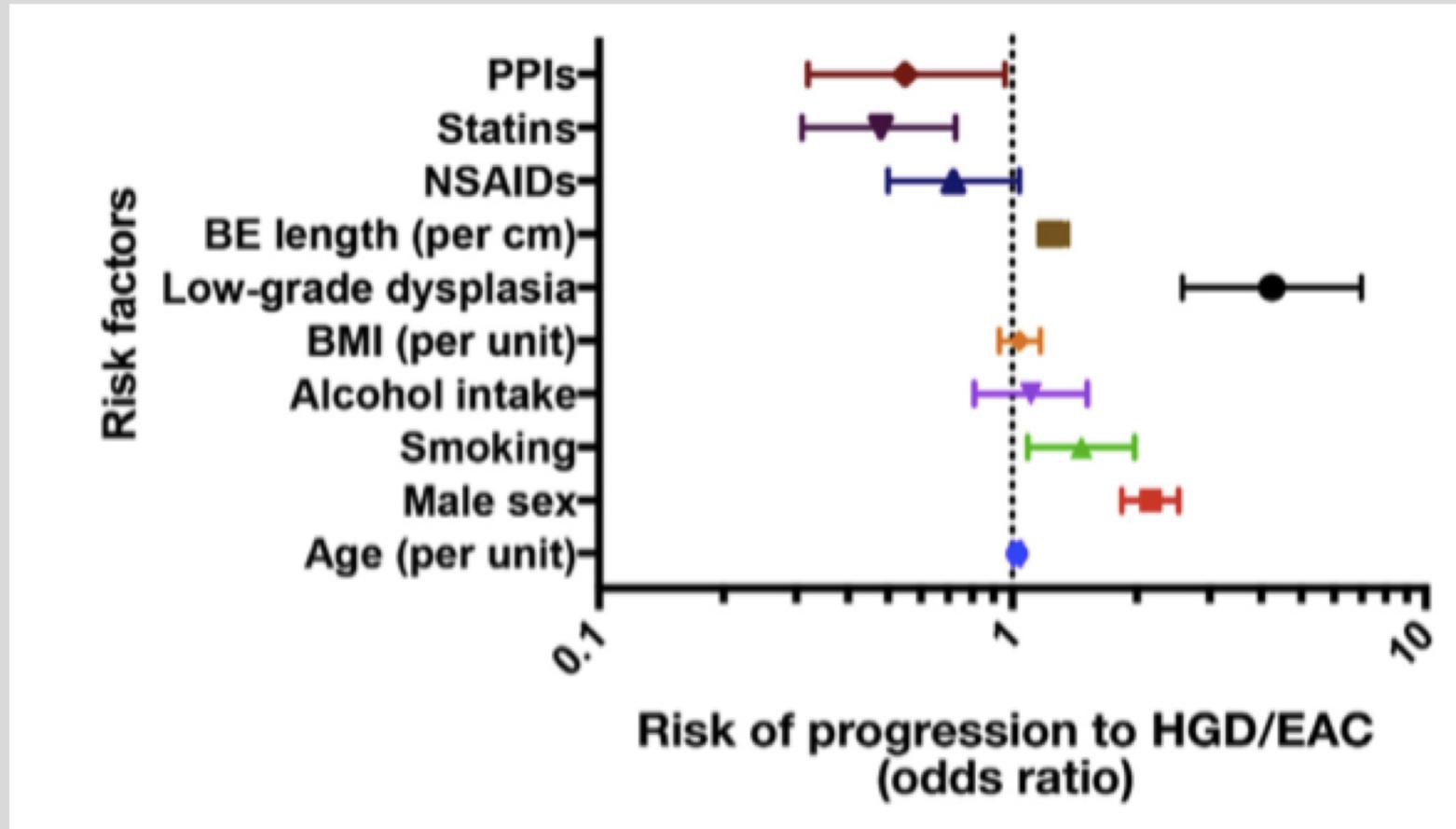
The patient returns after 12 weeks of BID PPI and the following is seen. Biopsies confirm expected histology.

What should we do now?



Repeat
EGD in 1
year
Repeat
EGD in 3
years
Repeat
EGD in 5
years
Continue
lifelong PPI

Risk factors for progression



Endoscopic surveillance of Barrett's esophagus – guidelines

- Risk around 0.3-0.6% per year in all-comers
- Surveillance intervals
 - Non-dysplastic BE: 3-5 years
 - Low-grade dysplasia: 1 year
 - High-grade dysplasia without eradication: 3 months
- Chromoendoscopy now recommended
- Characterize extent, expert pathology review
- **Screening** indicated for patients with multiple risk factors: age>50, male, Caucasian, hiatal hernia, elevated BMI, longstanding symptoms, abdominal obesity

Barrett's management – practical approach

- PPI reduces risk of progression by around 50%
- Role for statins not clear
- Smoking cessation
- Discuss surveillance options with patients
- Refer any patient with dysplastic BE to an esophageal center
 - EMR
 - RFA
 - Esophagectomy

A 45-year-old woman undergoes EGD and colonoscopy for iron deficiency anemia, where the following abnormality is seen. What should you do?



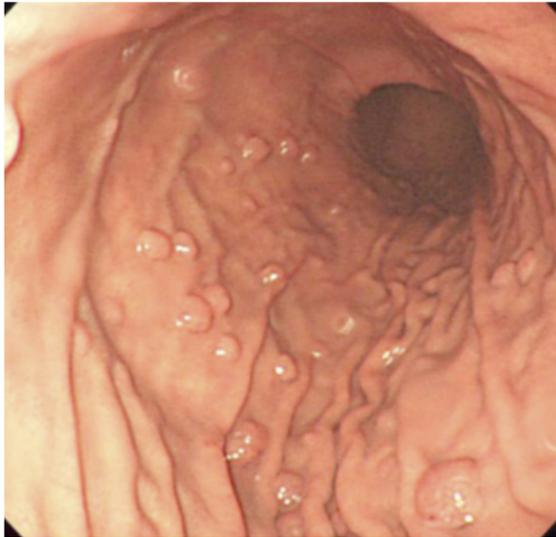
Biopsy the
polyp

Cold snare
the polyp

Hot snare
the polyp

Do nothing

A 32-year-old man with chronic PPI use undergoes EGD for GERD, and the following is seen. What do you do?



Biopsy several polyps

Cold snare several polyps

Cold snare all the polyps

Hot snare several polyps

Hot snare all the polyps

Do nothing

Types of gastric polyps

| Type | Etiology | Malignant potential | Management |
|---|--|---|--|
| Fundic gland | Hypergastrinemia (PPI, ZES) Polyposis syndromes | Very low if due to PPI | Resect >1 cm If >20 consider colonoscopy No surveillance |
| Hyperplastic | Chronic inflammation | Low unless >1 cm or pedunculated | Resect >1 cm Test/treat for <i>H pylori</i> None unless high gastric cancer risk |
| Adenomatous (raised intracellular neoplasia) | Chronic atrophic gastritis <i>H pylori</i> | Moderate | Resect all Test/treat for <i>H pylori</i> Surveillance at 1 year then ??? |
| Neuroendocrine tumors | Type 1 – hypergastrinemia w/ achlorhydria (atrophic gastritis, high pH) Type 2 – ZES, MEN-1 (low pH) Type 3 – sporadic | Type 1 – low Type 2 – low Type 3 – high | Type 1 and 2 – resect and EGD q6-12 months Type 3 – surgery with LN dissection Multiple type 1 lesions – consider antrectomy |

Management of gastric polyps

- If suggestive of fundic gland polyps: biopsy a few to confirm
- If > 1 cm: resect with hot snare and consider clip
- Submucosal lift not very effective
- Address underlying cause when possible

Duodenal carcinoids

- Usually incidental and indolent
- Risks for metastatic disease:
 - Size >2 cm
 - Invasion of muscularis propria
 - Presence of mitotic figures on histology
- If ≤ 1 cm, can usually be endoscopically resected
- Consider EUS to confirm lack of invasion first
- If risk for metastatic disease consider CT or PET-CT

A 70-year-old man undergoes EGD for dyspepsia. All mucosa appears endoscopically normal. Where do you biopsy?

Antrum

Antrum + duodenum

Antrum + body

Antrum + body + duodenum

Antrum + body + incisura

Antrum + body + incisura + duodenum

Updated Sydney System

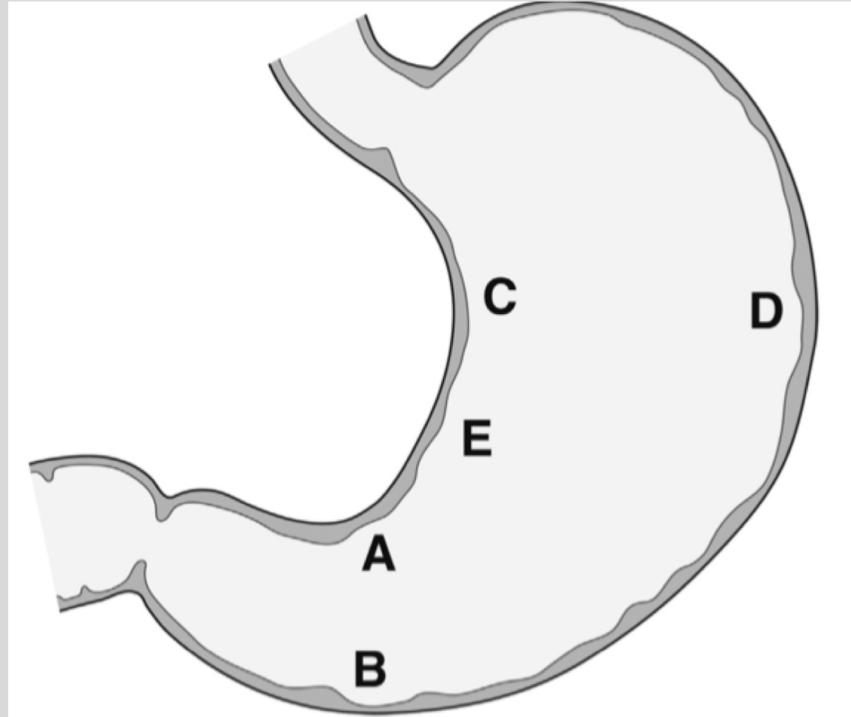


Figure 1. Locations of gastric biopsy recommended by the updated Sydney System. (A) Lesser curvature of the antrum; (B) greater curvature of the antrum; (C) lesser curvature of the body; (D) greater curvature of the body; and (E) incisura angularis. Adapted with permission from Dixon et al.⁶

The patient's gastric biopsies show chronic gastritis in the antrum but are otherwise normal including negative for *H pylori*. What do you do now?

Perform alternate H pylori testing **A**

Treat empirically for H pylori **B**

Trial of PPI **C**

Trial of carafate **D**

Trial of amitryptiline **E**

H pylori-negative gastritis

- Gastric mapping biopsies among 491 patients
- 41 had *HP*-negative gastritis (159 *HP*-positive)
 - Mostly chronic gastritis
 - Gastritis was more localized, less diffuse
 - More likely to have past (rather than current) alcohol or smoking
 - No difference in PPI, H2RA, NSAID use
- Chronic inactive gastritis likely represents prior injury
- Chronic AND active – possibly *HP* missed by biopsy, also consider NSAIDs, Crohn's disease

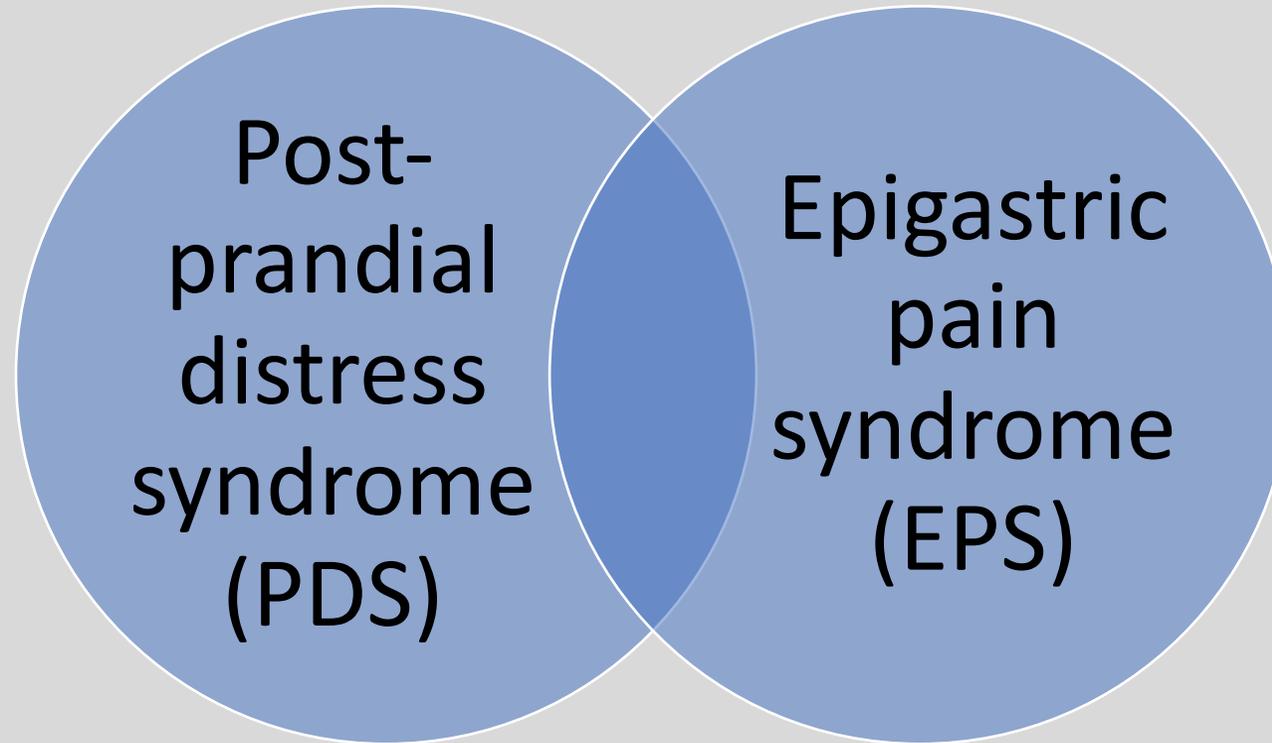
Dyspepsia without source on EGD

pH testing, alternate
HP testing, consider
med causes

Consider abdominal
imaging (CT, US,
GES)

Diagnose and treat
for functional
dyspepsia

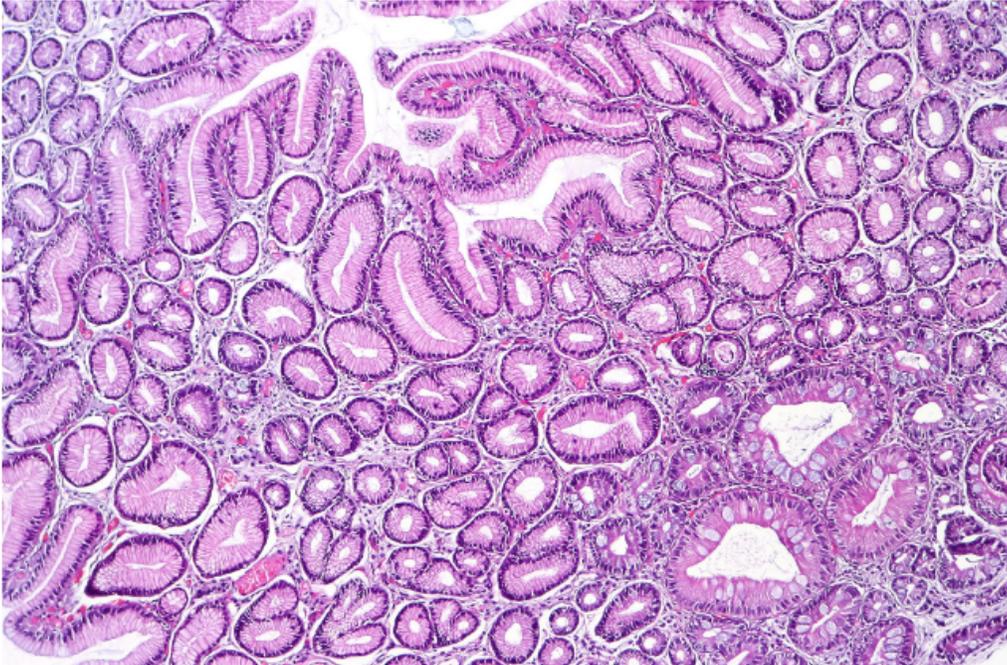
Functional dyspepsia – ROME IV



Functional dyspepsia – medical therapies

| Medication | Notes |
|---|----------------------------|
| PPI | Occasionally effective |
| Test and treat for <i>H pylori</i> | And confirm eradication |
| Tricyclics (imipramine, desipramine, amitryptiline, nortryptiline) | EPS, avoid if constipation |
| Buspirone | PDS |
| SNRI's (duloxetine, venlafaxine) | Not much evidence |
| SSRI's | Seem less effective |
| Mirtazapine | Patients with weight loss |
| Pro-motility agents (metoclopramide, domperidone) | PDS |

A 55-year-old Chinese woman (first-generation immigrant) undergoes EGD for iron deficiency anemia. Gastric biopsies shown. What impacts choice to do surveillance EGD?



Place of birth

Presence or
absence of H pylori

Smoking status

Presence in multiple
areas of the stomach

Presence or
absence of
dysplasia

Family history of
gastric cancer

Pathway to gastric cancer



Contributors to gastric intestinal metaplasia

- *H pylori*
- Cigarette smoking
- Alcohol use
- Bile reflux
- Genetic factors
- Dietary (sodium intake) and environmental factors
- Probably others as well

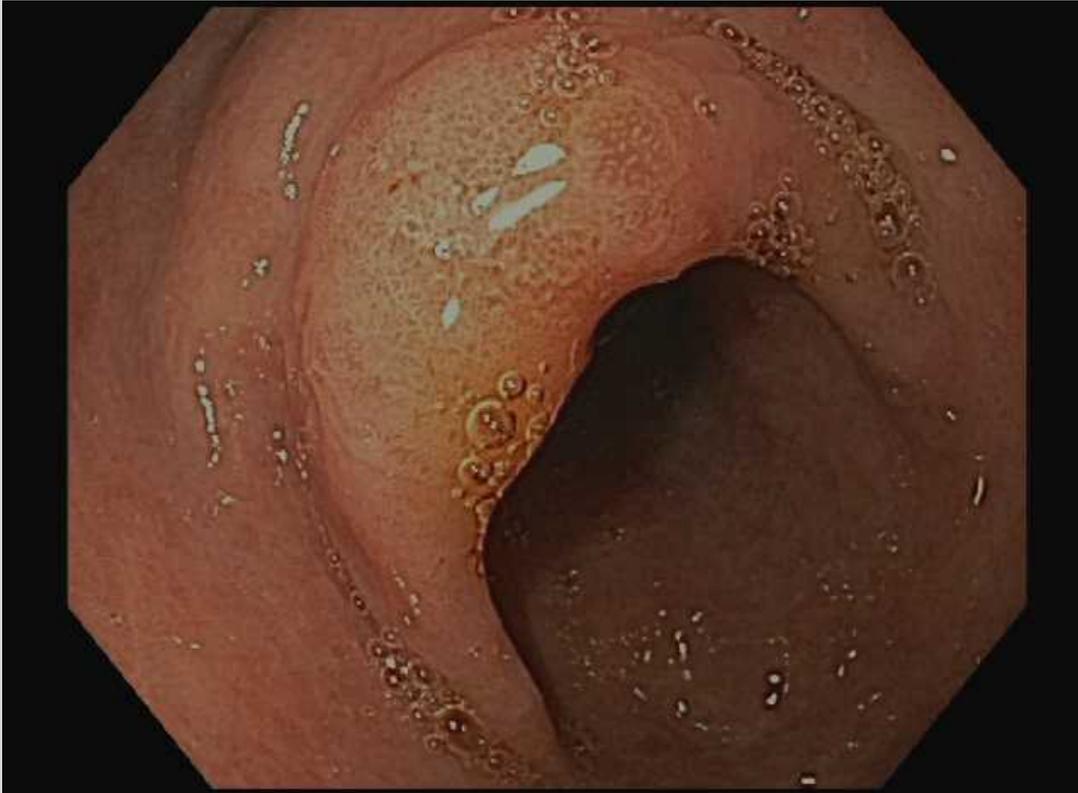
GIM progression to cancer

- Case-control study at Kaiser SoCal: 923 patients with GIM versus matched controls
 - 25 developed gastric cancer (17 at time of GIM diagnosis, 8 median 4.6 years later) → **4-fold higher risk than controls**
 - GIM+family history of gastric cancer → **84-fold higher risk than controls**
 - Extensive IM (at least 2 sites) → **9.4-fold higher risk than localized**
- Japan: GIM+*HP* → RR 6.4
- Korea: GIM → RR 7.5-9.3
- Netherlands: GIM → 0.18% risk per year
- ***Overall: approximately 6-fold increased gastric cancer risk***

GIM: to survey or not to survey?



GIM: to survey or not to survey?



GIM: to survey or not to survey?

- Cochrane review (2013): no RCT's identified
- Japan and Korea have screening programs
 - 50% resectable in Japan versus 20% in US
- UK: lower stage disease (67% versus 23% stage I or II) and greater 5-year survival (50% versus 10%) in screening versus open-access endoscopy patients
- Surveillance q1-2 years may be cost-effective but not q10 years

O'Connor A. *Cochrane Database Syst Rev* 2013. Whiting JL. *Gut* 2002.

Kim HG. *Gastrointest Endosc* 2016. Zullo A. *World J Gastroenterol* 2012.

My approach

- True screening only for family history
- When patient undergoing EGD has high risk for GIM, I take mapping biopsies
- Surveillance EGD q3 years with NBI examination and repeat mapping
- If 2 subsequent EGD's with GIM in only 1 area then consider stopping surveillance

A 33-year-old patient undergoes EGD for dyspepsia which shows antral ulcer. Denies NSAID use. Biopsies are HP-positive. Repeat EGD post-treatment shows persistent ulcer. Both times ulcer biopsy negative for malignancy.

What should we do next?

More detailed questions re: NSAID use

Confirm HP eradication

Check fasting gastrin level

More extensive PPI course

Non-healing gastric ulcers

- Biopsy margin extensively and send for AFB and fungal cultures
- Confirm *HP* negativity with multiple modalities
- Confirm PPI compliance, consider dexlansoprazole since not meal-dependent
- Strict trial off all NSAIDs (consider herbals too)
- Strict smoking avoidance
- Consider CT scan or EUS
- Fasting gastrin off PPI for 2-3 weeks and gastric pH on PPI → if either significantly abnormal consider secretin stimulation test and/or specialized PET-CT scans
- If all else fails and patient has symptoms consider surgical referral

Thank you!



justin.sewell@ucsf.edu