# Dyspepsia

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## Definitions

**Dyspepsia:** Predominant epigastric pain lasting at least one month. This can be associated with any other gastrointestinal symptom such as epigastric fullness, nausea, vomiting, or heartburn, provided epigastric pain is the patient's primary concern

## Differential Diagnosis

The differential diagnosis is broad and includes life-threatening and non-GI causes that must be ruled out. *Note this chart is not comprehensive. All patents should have a thorough history, cardiac, respiratory, and GI physical exams, and appropriate work up.*

**Life-threatening diagnosis**

| Diagnosis | History | Physical | Investigations |
|---|---|---|---|
| Acute Coronary Syndrome | - Cardiac history<br>- Cardiac risk factors, abnormal stress test, peripheral artery disease<br>- Exertional symptoms<br>- Radiation to bilateral jaw or arms<br>- Change in symptoms within past 24 hours | - Full cardiac and GI exam<br>- Vitals | - ECG<br>- Tn<br>- BNP |
| Abdominal Aortic Aneurysm | - Cardiac history<br>- Cardiac risk factors, abnormal stress test, peripheral artery disease<br>- Previous imaging to suggest aortic enlargement | - Full cardiac and GI exam specifically palpating for masses<br>- Vitals | - Bedside US<br>- CT/CTA |
| Aortic Dissection | - Connective tissue disease<br>- Hypertension<br>- Pain radiating to back<br>- Neurologic/stroke-like features | - Full cardiac and GI exam<br>- Vitals – may be hemodynamical unstable | - Bedside US<br>- CT/CTA |

**Non-GI Diagnosis**

| Diagnosis | History | Physical | Investigations |
|---|---|---|---|
| Pneumonia | - Cough<br>- Fever<br>- Sputum<br>- URTI<br>- SOB | - Respiratory exam may reveal crackles<br>- Also do full cardiac and GI exam<br>- Vital may demonstrate a fever, tachycardia, hypotension, increased RR, altered SPO2 | - CBC<br>- CXR |
| Pericarditis | - Pleuritic chest pain<br>- Better when leaning forward<br>- Recent illness<br>- SOB | - Full cardiac, respiratory, and GI exam<br>- May hear a friction rub<br>- Assess for pulsus paradoxus | - ECG<br>- Tn<br>- CBC |

**GI Diagnosis**

| Diagnosis | Prevalence | History | Physical | Investigations |
|---|---|---|---|---|
| Functional dyspepsia (most common) i.e IBS | 60% | - Increased frequency of stool<br>- Change in pain with defecation<br>- Constipation and/or diarrhea | Normal | Normal |
| Peptic ulcer (most common discernible cause) | 15-25% | - History/FHx of ulcers<br>- Bloody stool<br>- Smoker<br>- Alcohol use<br>- Certain medications and herbals (see below) | - Epigastric tenderness<br>- Blood on DRE | - CBC may reveal amenia<br>- H pylori screen<br>- Endoscopy |
| Gastroesophageal reflux disease. | 5-15% | - Heart burn<br>- Sour belches<br>- Worse when supine<br>- Chronic cough<br>- Hoarse voice | - Cardiac, GI, and resp exams normal | Normal labs |
| Gastric or esophageal cancer | < 2% | - Dysphasia<br>- Odynophagia<br>- Weight loss<br>- Protracted vomiting<br>- Melena<br>- Smoking<br>- Alcohol<br>- Hot beverages<br>- Pickled vegetables | - Change in weight<br>- Painless jaundice<br>- Abdominal mass | - CBC<br>- endoscopy |
| Biliary disease | Rare | - RUQ pain<br>- Belching<br>- Worse after meals<br>- Jaundice<br>- Dark urine<br>- Pale stools | - RUQ pain<br>- Positive murphy's<br>- Jaundice | - Elevated LFT's<br>- Elevated bilirubin<br>- CBC derangements if infection |
| Pancreatitis | Rare | - Stabbing pain radiating to back<br>- Abrupt pain lasting hours<br>- History of alcohol use<br><br>Mnemonic: **I GET SMASHED**<br><br>**I**diopathic<br>**G**allstones<br>**E**thanol<br>**T**rauma<br>**S**teroids<br>**M**umps/Malignancy<br>**A**utoimmune<br>**S**corpion<br>**H**ypertriglyceridemia/calcium<br>**E**RCP<br>**D**rugs | - Epigastric tenderness<br>- Jaundice | - Lipase<br>- LFT's<br>- Ca<br>- Triglycerides |
| Metabolic disorders | Rare | - Hx of diabetes, thyroid disease, hyperparathyroidism<br>- Risk factors for hypercalcemia i.e. Malignancy, bone mets | - May be normal or have features of metabolic disease | - Depends on metabolic condition<br>- Consider TSH, A1C, Ca, PTH |

| | | | | |
|---|---|---|---|---|
| Digestive and malabsorbtive issues i.e. celiac, lactose intolerance | Rare | - Pain, bloating, and stool changes related to food intake | - Usually normal<br>- Possible malnutrition | - Nutritional screen including CBC, Ca, Mg, ferritin<br>Anti TTG |
| Medications | Rare | - NSAIDs/COX inhibitors<br>- Alcohol<br>- Caffeine<br>- Acarbose<br>- Alendronate<br>- Cisapride<br>- Codeine<br>- Iron<br>- Metformin<br>- Antibiotics<br>- Orlistat<br>- Potassium<br>- Steroids<br>- Theophylline | Normal | Normal |
| Herbals | Rare | - Garlic<br>- Ginko<br>- Saw palmetto<br>- Feverfew<br>- Chaste tree berry<br>- White willow | Normal | Normal |

Other rarer cause to keep in Ddx: Hepatoma, ischemic bowel, intestinal parasites

## Red Flags

1. Clinically significant or unintentional weight loss (>5 percent body weight over 6 to 12 months).
2. Overt gastrointestinal bleeding.
3. Dysphagia
4. Odynophagia
5. Unexplained iron deficiency anemia
6. Persistent vomiting
7. Palpable mass or lymphadenopathy
8. Family history of upper gastrointestinal cancer

## Investigations to consider and when to consider them

1. Endoscopy
    a. 60+ years old
    b. Red flag features
2. H Pylori testing i.e. urea breath test, serology, stool sample, biopsy (note serology will be positive if they've ever had an infection)
    a. If <60 with no red flags
    b. If positive, treat

i. Table 1: Treatment Regimens

| Helicobacter pylori treatment regimens for patients NOT ALLERGIC to penicillin* | | | |
|---|---|---|---|
| | **CLAMET Quad (PAMC) for 14 days** | | **BMT Quad (PBMT) for 14 days** |
| First line | • PPI standard dose BID<br>• Amoxicillin 1000 mg BID<br>• Metronidazole 500 mg BID<br>• Clarithromycin 500 mg BID | **OR** | • PPI standard dose BID<br>• Bismuth subsalicylate 2 tabs (524 mg) QID<br>• Metronidazole 500 mg QID<br>• Tetracycline 500 mg QID |

3. Empiric PPI therapy (4-8 weeks)
    a. If symptoms continue despite negative investigations
    b. Continue x6 months if this improves symptoms
    c. If still no improvement, consider endoscopy and if negative, psychotherapy

## A quick note on PPI's

- If pregnant or breastfeeding, use pantoprazole as it is the most studied (though all appear to be safe)
- Typical dosing is 40 mg PO daily 30 minutes before breakfast
- If upper GI bleed is suspected, 80 mg IV loading dose then 8mg/hr is indicted
- Use of PPI's is associated with increased risk osteoporotic fractures, c diff infections, diarrhea, hypomagnesemia, b12 deficiency, CKD, and dementia so prolonged use is not advised. Try to have patients off after 6 months of use and get another endoscopy. If normal, psychotherapy should be considered.
- PPI's interact with medications such as antiplatelet agents like clopidogrel so use with in these patients

## Resources

https://www.cag-acg.org/images/publications/CAG_CPG_Dyspepsia_AJG_Aug2017.pdf

https://www.aafp.org/afp/1999/1015/p1773.html

H Pylori Primary Care Pathway and Patient Handouts: https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-dh-pathway-hpylori.pdf