Peptic Ulcer Disease (PUD)

Definition

Gastric & duodenal ulcers. Dyspepsia ["indigestion" - discomfort or heartburn or nausea] is common (40% population annually). But only 1% (rising) have an endoscopy – 40% of these show non-ulcer dyspepsia, 40% have GORD, **~15% have PUD**, and <5% have oesophageal or gastric Ca.

Aetiology

- **Helicobacter pylori** [duodenal (90%) & gastric (70%) ulcers]
- **NSAID**
- Other: EtOH, steroids, stress, smoking, Zollinger-Ellison, family history

Epidemiology

Incidence: Duodenal ulcer > gastric ulcer. Decreasing with H. pylori eradication. Sex: 3M:2F
Prevalence: 0.1-0.15%

Presentation

Symptoms: Epigastric pain (usually 1-3hrs post-prandial, maybe relieved by food) ± heartburn, nausea, aerophagy (→burping, bloating, distension) & intolerance of fatty food (DDx gallstones). A posterior ulcer may → pain radiating to back esp if penetrating. Antacids may have helped. Patients may present with acute life-threatening ***Cx***: haemorrhage or perforation.
Signs: Often epigastric tenderness. If gastric emptying slow, there may be a succussion splash.

Differential diagnosis

- Gastro-oesophageal reflux
- Gastric carcinoma
- Gallstones
- Pancreatitis
- Crohn's disease
- Irritable bowel syndrome
- Drug-induced dyspepsia
- Hepatitis
- ACS

Investigations

Bloods: FBC (occ iron-def anaemia), amylase/Lipase, LFT, ±G&H, ±Cardiac markers if IHD RF.
ECG: DDx of ACS
Radiology: CXR/AXR – perforation.
Helicobacter pylori detection:

- Serology – ELISA (85% sens, 80% spec) may be +ve post-eradication.
- Urease detection - breath/blood/endoscopic(CLOtest) tests
    - Bacterial urease cleaves ^{13}C- or ^{14}C-labelled urea → NH_4 & HCO_3^- → exhaled labelled CO_2 → active H.pylori (Sens>90%). False negs: bismuth, PPI, ABx.
- Faecal antigen test
- Endoscopic biopsy
- *NB. if H.pylori not detected & not on NSAIDs → low likelihood PUD*

Endoscopy: (Largely has replaced barium studies)

- Advantages vs Barium: Direct vision of ulcer, gastritis, oesophagitis, biopsy, H.pylori detection, ↓XR, and can treat bleeding ulcers with injection, ligation, heat, laser.

Management

Modification of behaviour:

- ↓EtOH, ↓smoking, ↓stress. Possibly ↓coffee (unproven),
- Drugs – Cease, change or comply more fully with recommendations for possible culprits.
- E.g. taking NSAIDs including aspirin after food or changing to new COX2 inhibitors.

Pharmacotherapy: For symptomatic relief & ulcer healing.

- Antacids – Al, Ca, Mg, alginate & LAs - Mild relief only, don't heal. **SE:** constip/diarrhoea
- Proton-pump inhibitors for acid suppression: full dose PPI for 1-2mo. usually heals ulcer.
  E.g.: **Omeprazole**, **pantoprazole**, **esomeprazole**, **rabeprazole** all 40mg/day PO. **SE:** GI upset, dry mouth, headache
- H_2 antagonists, reduce acid production, are less effective than PPIs.
  E.g. **ranitidine** 300mg or **cimetidine** 800mg/day in single/split doses. Cimetidine has sig. **SE:** ↑PRL, gynaecomastia, impotence, CYTP450 inhibition & so ↑warfarin, phenytoin etc.
- PGE_1 analogue **misoprostol** 800mg daily inhibits H2-dependent gastric acid secretion & is cytoprotective but ↓effective than PPI at healing. May be better at prevention in smokers & NSAID related ulcers. **SE:** GI upset, facial flushing, tremor.
- Cytoprotectants: These chelate to proteins at the base of the ulcer. Bismuth also suppresses H.pylori but relapse rates high.
  bismuth SE: NH_3-taste, dark tongue, black stools, long term Rx can → renal toxicity.
  sucralfate (Al salt of sucrose, requires low pH). **SE:** constip, bioavail phenytoin.

H.pylori eradication:

- If H.Pylori +ve. Also if DU or on NSAIDs (↓recurrence).
- Triple therapy PPI + dual ABx or bismuth. Number of regimes suggested.
- E.g. **amoxicillin** 1g+**clarithromycin** 500mg+**omeprazole** 20mg PO bd x 7d. Cont PPI x 4-8wks.
- Or **pantoprazole** 40mg+**amoxicillin** 1g bd x 5d then **pantoprazole** 40mg+**clarithromycin** 500mg+**tinidazole** 500mg bd x 5d

Management of recurrence:

- For gastric ulcer with H pylori infection → eradication therapy followed by proof of eradication and repeat endoscopy (proof of ulcer healing & not malignant).
- If failure of eradication → repeat with different antibiotics.

Surgery

- Profuse bleeding/exsanguinating
- Perforation
- Rebleeds in hospital
- Failed endoscopic Mx
- Consider if giant GU or posterior DU

Complications

- Haemorrhage (10-20%) → [see Gastrointestinal Haemorrhage]
- Perforation (5%) → acute abdomen → ABC, NGT, ABx, ± surgery
- Penetration through to other viscera e.g. pancreas
- Scarring of the duodenum may → pyloric stenosis with vomiting and weight loss (rare)
- Malignancy (GU>>DU)

Prognosis

Prognosis is excellent if the underlying cause such as H pylori infection or drugs addressed.
Annual recurrence<2% if treated GU>DU. Higher if smoking, EtOH, NSAIDs.
Mortality<10%.