PEPTIC ULCER DISEASE

Dr Piyush B. Tailor
Associate Professor
Govt. Medical College
Surat
Definition

Ulceration (discontinueation of the epithelial layer) of the gastrointestinal mucosa occurring in areas exposed to acid and pepsin.
Comparing Duodenal and Gastric Ulcers
Sites of PUD

• Where acid and pepsin are present
• Commonest sites:
  – Duodenum especially first part “duodenal bulb”
  – Stomach especially over lesser curvature
• Other sites:
  – Lower end of esophagus
  – site of gastro-jejunal anastomosis
  – Opposite to Meckel’s diverticulum
Aetiology of PUD

- Helicobacter Pylori infection
- NSAID
- Steroids
- Alcohol ingestion
- Smoking
- Stress
- Hyper-secretory state:
  - Zollinger – Ellison’s Syndrome
Epidemiology of PUD

- Prevalence about 5-10%
- More common in Blood group “O”
- Higher prevalence in low socioeconomic classes and with certain diseases
- DU more in males: M/F: 3:1
- GU equal in both sexes but increases with age
- Family History: 3-4 increased risk
- Cigarette smoking:
- Emotional disturbance & Stress:
Role of Acid in PUD

- NEVER when = “MAO” < 10 mmol/hour
- RARE when = “MAO” < 20 mmol/h
- COMMON with = higher MAO rates
- NOT when fasting gastric pH > 2.5
DEFENSIVE FACTORS

- Prostaglandins
- Mucosal blood flow
- Mucus gel layer
- HCO3
- Regeneration of epithelial layer
Clinical Feature

• **Epigastic Pain**— “aching” or “burning”
  
  – Duodenal ulcers:
  – Pain after 2-3 hours of a meal
  – May awaken patient from sleep.
  – Pain is relieved by food, antacids, or vomiting.
  – Patient may be obese

  – Gastric ulcers:
  – Food may exacerbate the pain while vomiting relieves it.
  – So patient may have weight loss
  – Nausea, Vomiting, & weight loss more common

• Nausea, vomiting, belching, dyspepsia, bloating, chest discomfort, anorexia,

• hematemesis, &/or melena may also occur.
Objective Data

• Epigastric tenderness
• Occult blood loss in stool
• Succussion splash
  – A succussion splash describes the sound obtained by shaking an individual who has free fluid and air or gas in a hollow organ or body cavity.
  – Done by gently shaking the abdomen by holding either side of the pelvis.
Differential Diagnosis

• Gastritis
• Cholecystitis
• Pancreatitis
• Hiatus hernia
• Epigastic hernia
• Gastro-Esophageal Reflux Disease
• Neoplasm of the stomach
• Pancreatic cancer
• Diverticulitis
• MI—not to be missed if having chest pain
Diagnostic Plan

• **Stool** for fecal occult blood
• **CBC, liver function test, amylase, and lipase.**
• **H. Pylori** can be diagnosed by
  – Urea breath test,
  – Stool antigen assays
• **Upper GI Endoscopy:**
  – Any pt >50 years.
  – with alarm markings including anemia, weight loss, or GI bleeding.
• **Gastric Biopsy**
  – Highly sensitive for dx of ulcers
  – To rule out malignancy and rapid urease tests.
Complications of PUD

- Bleeding from ulcer
- Perforation
- Gastric outlet obstruction = Pyloric Stenosis
- Malignancy at site of ulcer
Natural history of PUD

- Chronic disease with relapses and remissions.
- If left untreated, 30-40% of ulcers heal within 8 weeks.
- Recurrence rate without treatment is 70-90%.
- Complications develop in 20% of PUD.
TREATMENT OF PEPTIC ULCER DISEASE

• AIM OF TREATMENT:
  – Relief from Symptoms
  – Heal Ulcer
  – Prevent Complication
  – Prevent Recurrence
Life-style modification in PUD

- Doubtful efficacy
  - Rest
  - Relaxation
  - Good sleep
- Diet:
  - Frequent small meals
  - Milk
  - More amount of fiber
  - Fat free diet
  - Avoid caffeine-containing beverages
  - Avoid Spices
  - Avoid addiction like alcohol & smoking
HISTAMINE - RECEPTOR ANTAGONISTS (H2-Blockers)

- Cimetidine 400mg b.d or 800mg at bed time
- Ranitidine 150mg b.d. or 300mg at bed time
- Famotidine 20mg b.d. or 40mg at bed time
- Act through blocking H2 receptors in the parietal cells
- Suppress nocturnal acid secretion
- Suppress 24 hour acid secretion
- Side effects:
  - Reversible gynecomastia and impotence.
PROTON PUMP INHIBITORS (PPIs)

- Irreversibly inhibiting the H+ , K+- ATPase of the gastric parietal cells
- Inhibit over 90% of 24-hour acid secretion
- Omeprazole: 40 mg BD
- Pantoprazole: 40 mg OD
- Rabeprazole: 20 mg OD
- Esomeprazole: 40 mg OD
ANTACIDS

• Rapid symptomatic relief
• Cheap
• If taken on empty stomach; they are effective only for 10-20 minutes
• If taken one hour after meals they are effective for 2-3 hours.
• Tablet preparations are less effective than suspensions
Side effects of antacids

- Sod bicarbonates:
  - increases sodium load
- Aluminum compounds:
  - constipation
  - binds phosphates
  - binds drugs.
- Magnesium compounds:
  - diarrhea
  - accumulation in renal failure
- Calcium compounds:
  - constipation
Eradication therapy for H. Pylori

• Sensitive to the following agents:
  – Amoxycillin
  – Tetracyclin
  – Clarithromycin
  – Metronidazole, Tinidazole
  – Bismuth
  – Second line drugs:
    – Levofloxacin, Gatifloxacin

• Use triple or quadruple regimen for 7-14 days.
• Relapse rate drops to less than 10% per year after successful eradication
SUCRALFATE

- 1gm 4 times daily on empty stomach
- Increasing local mucosal production of PGs
- Side effects:
  - constipation
  - nausea
  - reduces the absorption of some drugs
PROSTAGLANDINS (Misoprostol)

- Inhibit gastric acid secretion.
- Less effective than H2- blockers
Anti-Cholinergic drugs

- **Name**: Pirenzepine
- **Action**: Inhibit muscarinic receptor
- **Side effect**:  
  - Dryness in mouth
  - Tachycardia
  - Urinary retention
Surgery

- People who do not respond to medication, or who develop complications:
  - Vagotomy –
  - Antrectomy -
  - Pyloroplasty -