

Peptic Ulcer Disease (PUD) - Study Notes

Definition: Peptic ulcer disease (PUD) refers to mucosal ulceration in the stomach or duodenum resulting from an imbalance between aggressive factors (acid, pepsin, *Helicobacter pylori*, NSAIDs) and defensive mechanisms (mucus, bicarbonate, prostaglandins, mucosal blood flow).

Etiopathogenesis:

- *Helicobacter pylori* infection (most common).
- Chronic NSAID use (inhibits prostaglandin synthesis).
- Increased gastric acid secretion.
- Other risk factors: smoking, alcohol, stress, corticosteroids, Zollinger-Ellison syndrome.
- Results in mucosal damage, inflammation, and ulcer formation.

Clinical Manifestations:

- Epigastric pain (burning/gnawing), often related to meals.
- Duodenal ulcer: pain relieved by food, recurs 2–3 hours later.
- Gastric ulcer: pain worsens with meals.
- Other symptoms: bloating, nausea, vomiting, hematemesis, melena.
- Complications: perforation, bleeding, gastric outlet obstruction, malignancy (gastric ulcer).

Management:

Non-pharmacological:

- Lifestyle modification: stop smoking, reduce alcohol, avoid NSAIDs.
- Balanced diet; avoid irritant foods (spicy, caffeine, carbonated drinks).
- Stress management and regular follow-up.

Pharmacological:

- Eradication of *H. pylori* (triple or quadruple therapy: PPI + 2 antibiotics ± bismuth).
- Proton pump inhibitors (omeprazole, pantoprazole).
- H₂ receptor antagonists (ranitidine, famotidine).
- Antacids and mucosal protectants (sucralfate, misoprostol).
- Surgery in refractory or complicated cases (vagotomy, antrectomy).

Flowchart: Pathophysiology of Peptic Ulcer Disease

