Therapeutic areas – Part 1

Gastroenterology

Module 4 Topic 4_5

G-I Disorders

Upper GI complaints include -

- Chronic and recurrent abdominal pain
- Dyspepsia
- Nausea and vomiting
- Regurgitation

G-I Disorders

Lower GI complaints include -

- Constipation
- Diarrhea
- Gas and bloating
- Abdominal pain
- Rectal pain or bleeding

G-I Disorders

Causes of Chronic Abdominal Pain

Cause	Suggestive Findings
Endometriosis	Discomfort before or during menses
Ovarian cyst, ovarian cancer	Vague lower abdominal discomfort, bloating Sometimes a palpable pelvic mass
Renal calculi	Fever, flank pain, dark or bloody urine
Chronic appendicitis	Several previous discrete episodes of RLQ pain
Chronic cholecystitis	Recurrent colicky RUQ pain
Chronic hepatitis	Upper abdominal discomfort, malaise, anorexia Jaundice uncommon In about one third of patients, a history of acute hepatitis
Chronic pancreatitis	Episodes of severe epigastric pain Sometimes malabsorption (eg, diarrhea, fatty stool) Usually a history of acute pancreatitis

G-I Disorders

Causes of Chronic Abdominal Pain (contd)

Cause	Suggestive Findings
Intestinal TB	Chronic nonspecific pain Sometimes palpable mass Fever, diarrhea, weight loss
Lactose intolerance	Bloating and cramps after ingesting milk products
Pancreatic cancer	Severe upper abdominal pain that • Often radiates to the back • Occurs late in disease, when weight loss is often present • May cause obstructive jaundice
Parasitic infestation (particularly giardiasis)	Cramps, flatulence, diarrhea
Peptic ulcer disease	Upper abdominal pain relieved by food and antacids May awaken patient at night

G-I Disorders

Causes of Chronic Abdominal Pain (contd)

Cause	Suggestive Findings
Ulcerative colitis	Crampy pain with bloody diarrhea
Food allergy	Symptoms developing only after consuming certain foods (eg, seafood)
Sickle cell disease	Family history Severe episodes of abdominal pain lasting over a day Recurrent pain in nonabdominal sites

G-I Disorders

Dyspepsia

- Dyspepsia is a sensation of pain or discomfort in the upper abdomen
- May be described as indigestion, gassiness, fullness, or burning
- **Treatment**
  - Proton Pump Inhibitors (PPIs), H_2 blockers, or a cytoprotective agent e.g. sucralfate

G-I Disorders

Nausea and Vomiting

- Nausea - unpleasant feeling of need to vomit
- Vomiting - forceful expulsion of gastric contents caused by involuntary contraction of the abdominal muscles
- Most common causes:
  - Gastroenteritis
  - CNS Injury / infections / labyrinthitis / motion sickness
  - Drugs / Toxins
- Complications
  - dehydration and electrolyte imbalance

G-I Disorders

Nausea and Vomiting (contd)

- Treatment
  - Motion sickness: Antihistamines like Dimenhydrinate, scopolamine patches, or both
  - Mild to moderate symptoms: Prochlorperazine or metoclopramide
  - Severe or refractory vomiting and vomiting caused by chemotherapy: 5-HT_3 antagonists e.g. ondansetron, granisetron

G-I Disorders

Constipation

- Difficult or infrequent passage of stool, hardness of stool, or a feeling of incomplete evacuation
- Associated with sluggish movement of stool through the colon due to diet, pelvic floor dysfunction or drugs
- Treatment
  - Discontinuation of causative drugs (some may be necessary)
  - Increase in dietary fiber
  - Brief course of osmotic laxatives

G-I Disorders

Constipation (contd)

- **Laxatives** -
  - **Bulking agents** (eg, psyllium, calcium polycarbophil, methylcellulose)
  - **Osmotic agents** contain poorly absorbed polyvalent ions (eg, magnesium, phosphate, sulfate), polymers (eg, polyethylene glycol), or carbohydrates (eg, lactulose, sorbitol) that remain in the bowel, increasing intraluminal osmotic pressure and thereby drawing water into the intestine
  - **Secretory or stimulant cathartics** (eg, phenolphthalein, bisacodyl, anthraquinones e.g. senna, castor oil,) act by irritating the intestinal mucosa or by directly stimulating the submucosal and myenteric plexus

G-I Disorders

Constipation (contd)

- **Enemas** including tap water and commercially prepared hypertonic solutions.
- **Emollient agents** e.g. docusate, a surfactant, which allows water to enter the fecal mass to soften and increase its bulk; act slowly to soften stools, making them easier to pass

G-I Disorders

Diarrhea

- Passing frequent and/or watery stools
- Causes of diarrhoea
  - Increased secretions
    - Causes include infections, unabsorbed dietary fat and bile acids (malabsorption syndrome), and certain drugs viz. , quinidine, quinine, orlistat
    - Infections combined with food poisoning are the most common causes of acute diarrhea
  - Reduced contact time/surface area
    - Impair fluid absorption and cause diarrhea
    - Inflammatory bowel disease, celiac disease

G-I Disorders

Some common Causes of acute Diarrhea

Type	Examples
Viral Infection	Norovirus, rotavirus
Bacterial infection	Salmonella, Campylobacter, or Shigella sp; Escherichia coli; Clostridium difficile
Parasitic infection	Giardia sp, Entamoeba histolytica, Cryptosporidia sp
Food poisoning	Staphylococci, Bacillus cereus,Clostridium perfringens
Drugs	Laxatives, magnesium-containing antacids, caffeine, antineoplastic drugs, many antibiotics, colchicine, quinine/quinidine, prostaglandin analogs, excipients (eg, lactose) in elixirs

G-I Disorders

Diarrhea (contd)

- Treatment
  - Fluid and electrolytes for dehydration
  - Possibly antidiarrheals for nonbloody diarrhea in patients without systemic toxicity
  - Oral rehydration solution (ORS) should contain
    - Complex carbohydrate or 2% glucose
    - 50 to 90 mEq/L of sodium

G-I Disorders

Acid - Peptic Disorders

- Gastro-oesophageal Reflux Disease (GERD) or Reflux Oesophagitis
- Duodenal Ulcer
- Gastric Ulcer
- Stress Ulcers- Occur in seriously ill hospitalized patients due to a decrease in blood flow the mucosal surface leading to ulceration

G-I Disorders

Therapeutic approach to acid-peptic disorders

- **Antacids** - primary treatment for most acid-peptic disorders as they are inexpensive, readily available, and safe in most populations
  - Antacids work nearly instantaneously and find utility for rapid relief of mild or sporadic symptoms
  - Commonly used antacids are aluminum hydroxide and magnesium hydroxide
- **Proton Pump Inhibitors** e.g. omeprazole, esomeprazole, pantoprazole

G-I Disorders

Therapeutic approach to acid-peptic disorders (Contd)

- **H. pylori eradication regimens**

Regimen	Comment
Triple therapy	First line treatment
PPI; amoxicillin 1 g BID; clarithromycin 500mg BID for 10–14 days	
Sequential therapy	
PPI and amoxicillin 1 g BID for 5 days followed by PPI, clarithromycin 500mg BID, tinidazole 500mg BID for 5 days	May be first line where macrolide resistance is common
Quadruple therapy	
PPI; bismuth 525mg QID; metronidazole 500mg QID; and tetracycline 500mg QID for 14 days	Treatment for failure