

# Signs & Symptoms and Differential Diagnosis in Clinical Medicine

## GASTROINTESTINAL DISEASES

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### 1. ABDOMINAL BRUIT

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**Liver:** Alcoholic hepatitis, portosystemic shunt, haemangioma, hepatic artery aneurysm/AV fistula, hepatoma.

**Spleen:** Splenic artery aneurysm/AV fistula.

**Pancreas:** Pancreatic malignancy (body and tail).

**Aorta:** Aortic aneurysm, celiac axis compression, Takayasu arteritis.

**Umbilicus:** Renal artery stenosis/aneurysm, fibromuscular hyperplasia.

**Cruveilhier-Baumgarten murmur:** A high-pitched venous hum of portal hypertension (increase flow in umbilical vein) that becomes louder with forced expiration.

### 2. ABDOMINAL PAIN

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#### Right Upper Quadrant

- Cholecystitis, cholangitis, cholelithiasis
- Fatty liver, hepatitis
- Perihepatitis (Fitz-Hugh-Curtis syndrome) secondary to pelvic inflammatory disease
- Nephrolithiasis
- Sphincter of Oddi dysfunction.

**Epigastrium**

- Acute gastritis, peptic ulcer disease
- Myocardial infarction, angina pectoris
- Aortic aneurysm
- Pancreatic malignancy.

**Left Upper Quadrant**

- Left lower lobe pneumonia
- Acute splenic enlargement, splenic infarction, nephrolithiasis.

**Nonfocal Pain**

- Pleurisy, uremia, peritonitis
- Mesenteric ischaemia, early appendicitis
- Sick cell crisis, herpes
- Porphyria.

**Right Lower Quadrant**

- Appendicitis, diverticulitis
- Endometriosis, ovarian cyst (haemorrhage, rupture)
- Intussusception, cecal volvulus
- Ectopic pregnancy
- Pelvic inflammatory disease
- Colitis (infectious, ischaemic, IBD).

**Hypogastric**

- Cystitis, bladder distension
- Testicular torsion, ovarian torsion
- Diverticulitis, strangulated hernia
- Ectopic pregnancy, pelvic inflammatory disease
- Prostatitis.

**Left Lower Quadrant**

- Diverticulitis, colitis, IBD, nephrolithiasis
- Volvulus, pelvic inflammatory disease

- Mesenteric thrombosis/lymphadenitis
- Typhlitis, pyelonephritis.

### **3. ABDOMINAL DISTENSION**

Commonly due to fat, fluids, air, tumour, stool:

- Ascites (nephrosis, CHF, cirrhosis, malignancy)
- Bowel obstruction (hernia strangulation, volvulus), intussusception, ileus (sepsis, drugs, electrolyte abnormality, post-surgery)
- Cysts (mesenteric), hydatid
- Abdominal aortic aneurysm
- Pregnancy, congenital pyloric stenosis, lipoma
- Lymphoma, massive hepatomegaly/splenomegaly.

### **4. ABDOMINAL GUARDING**

- Acute mesenteric ischaemia, small bowel obstruction, peptic perforation, pancreatitis, appendicitis
- Ruptured aortic aneurysm, ruptured ectopic pregnancy
- Hepatic/splenic contusion with haemoperitoneum
- Volvulus, pyelonephritis, pelvic inflammatory disease
- Spontaneous bacterial peritonitis
- Abdominal migraine, black widow spider bite.

### **5. ABDOMINAL MASSES**

- Hepatoma, hepatic cyst, congestive hepatopathy, hydatid
- Hirschsprung's disease, Ogilvie's syndrome
- Splenic cyst, haematoma, splenomegaly
- Pancreatic cyst, malignancy, pseudocyst
- Retroperitoneal lymphadenopathy (lymphoma)
- Fibroid, uterine/ovarian cyst/tumour
- Mesenteric cyst
- Tubo-ovarian abscess
- Congenital pyloric stenosis

- Hernia, volvulus
- Renal tumour, abscess, PUJ obstruction.

## **6. ABDOMINAL PAIN WITH REBOUND TENDERNESS**

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- Perforated bowel, viscus
- Appendicitis, pancreatitis
- Acute mesenteric ischaemia
- Ruptured abdominal aortic aneurysm
- Ruptured ectopic pregnancy.

## **7. ABDOMINAL PAIN MIMICS**

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- Pericarditis, angina pectoris, myocardial infarction (MI)
- Pneumonia, pulmonary embolism
- Sickle cell crisis.

## **8. ABDOMINAL HERNIAS**

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- Hiatus hernia
- Inguinal, femoral hernia
- Umbilical hernia
- Parietal hernia
- Incisional hernia
- Diaphragmatic hernia
- Obturator hernia
- Labial hernia (bowel loop into labium majus)
- Obturator hernia
- Retroperitoneal hernia
- Ventral hernia.

## **9. LOSS OF BOWEL SOUNDS**

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- Paralytic ileus, peritonitis, retroperitoneal bleed
- Hypokalemia, uremia, severe sepsis
- Post abdominal surgery
- Vertebral fracture.

## 10. DIARRHOEA

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### Acute

Less than 2 week duration, >3 stools/day, >200 g/day

- Viral (rotavirus, Norwalk virus, enterovirus)
- Bacterial—Salmonella, Shigella, Yersinia
- Enterotoxigenic—*E. coli*; Staphylococcus, *Bacillus cereus*
- *Clostridium difficile*
- Giardia, CMV
- Noninfectious:  
Lactose intolerance, hyperthyroidism, IBS, ulcerative colitis, Crohn's colitis, vasculitis, HIV enteropathy, carcinoid syndrome.

### Chronic

- IBS, diabetic neuropathy, carcinoid, VIPoma, gastrinoma
- Zollinger-Ellison syndrome, pheochromocytoma
- Hyperthyroidism, IBD
- Malabsorption syndrome (sprue, Whipple disease)
- Lactose intolerance, zinc deficiency
- Bacterial overgrowth
- Neuroblastoma
- Cow milk allergy
- Laxative abuse.

### Secretory

- Painless
- Normal stool osmotic gap
- Little change with fasting
- Large volume usually >1 L/day.

## 11. INTESTINAL OBSTRUCTION

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- Worms (Ascaris)
- Intestinal tuberculosis

- Scybala; colonic malignancy, stricture
- Intussusception
- Crohn's disease, intestinal tuberculosis
- Malrotation of intestinal loops
- Herniation of intestinal loops in hernial orifices
- Mesenteric adenitis.

### **Pseudo-obstruction**

- Diabetes mellitus, hypothyroidism, cortisone deficiency, Parkinsonism, muscular dystrophy, multiple sclerosis porphyria, progressive systemic sclerosis (PSS), Chagas disease
- Medications
- Dyselectrolytemia.

## **12. HALITOSIS** (bad breath)

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### **Local Causes**

- Xerostomia
- Periodontal disease
- Orthodontic devices
- FB/food in tonsillar crypts
- Tonsillar abscess.

### **Systemic Causes**

- Bronchiectasis
- Zenker's diverticulum
- Uremia
- Hepatic failure.

## **13. OROPHARYNGEAL DYSPHAGIA**

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- Transfer dysphagia
- Diphtheria, botulism, myasthenia gravis, polyneuropathies, pseudobulbar palsy
- Oculopharyngeal dystrophy, polymyositis

- Esophageal webs/rings, Zenker's diverticulum, cricopharyngeal bar, oropharyngeal tumours
- Upper esophageal sphincter dysfunction.

#### **14. ESOPHAGEAL DYSPHAGIA**

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- Transport dysphagia
- Schatzki's ring, diverticula, esophageal web
- Anterior cervical osteophytes, Zenker's diverticulum
- Esophageal cancer, perforation, stricture, diverticula
- Thyroglossal duct cyst, thyromegaly
- Mediastinal mass, large left atrium.

#### **Motility Disorders**

- Achalasia, diffuse esophageal spasm
- Scleroderma, nut cracker esophagus
- GE reflux, Barrett's esophagus
- Hypertensive, lower esophageal sphincter (LES)
- Psychological: Globus hystericus.

#### **15. ODYNOPHAGIA** (painful deglutition)

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- Esophagitis—HSV, CMV, EBV, Candida
- Pills—aspirin, bisphosphonates
- Caustic ingestion
- Reflux esophagitis
- Early esophageal cancer.

#### **16. ORAL ULCERS**

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- Aphthous stomatitis—recurrent, painful
- Herpes
- Pemphigus, pemphigoid, lichen planus
- Behçet's syndrome (uveitis, genital ulcer)
- Stevens-Johnson syndrome
- Syphilis (painless ulcers)
- Agranulocytosis, histoplasmosis (in immunocompromised).

## 17. STOMATITIS

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- Aphthous stomatitis—gray-yellow tender ulcers
- Infectious stomatitis—HSV, herpangina (Coxsackie virus), primary HIV infection, candidiasis
- Stevens-Johnson syndrome—severe form of erythema multiforme
- Trench mouth—necrotising ulcerative gingivitis caused by *Borrelia vincentii*
- Behçet's syndrome—systemic vasculitis with CNS involvement
- Chronic granulomatous disease involving skin, GI tract and genitourinary tract
- Malignancy—leukaemia.

## 18. VOMITING

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### GI Diseases

Hepatitis, pancreatitis, gastritis, gastric dysmotility, gastroenteritis, peritonitis, GI obstruction (adhesion, malignancy, pyloric stenosis, intussusception)

### Other Causes

- Uremia
- Hyperemesis gravidarum
- Diabetic ketoacidosis
- Migraine, Ménière's disease, motion sickness
- Myocardial infarction
- Early pregnancy
- Raised intracranial pressure (trauma, tumour, bleed)
- Alcohol or opiate withdrawal
- Testicular/ovarian torsion
- Pyelonephritis
- Meningitis
- Hypervitaminosis A
- Gastric volvulus

- Renal/biliary colic, appendicitis
- Psychogenic, poisoning
- Cancer chemotherapy (cisplatin).

## 19. HEPATOMEGALY

Liver span >12 cm at right midclavicular line.

- Congestive heart failure
- Infiltration  
Fatty liver, amyloidosis, histiocytosis, lipid/glycogen storage disorders, Wilson's disease, mucopolysaccharidosis, glycogen storage diseases, sarcoidosis,  $\alpha_1$ -antitrypsin deficiency
- Extramedullary haematopoiesis
- Chronic granulomatous disease

Neoplasms—hepatic adenoma, haemangioma, hepatocellular carcinoma, metastasis, hepatoblastoma

- Liver abscess, hydatid
- Portal hypertension

Prehepatic—portal vein thrombosis

Intrahepatic—cirrhosis, non-cirrhotic fibrosis, schistosomiasis, biliary cirrhosis, tuberculosis, sarcoidosis

Post-hepatic—hepatic vein thrombosis (Budd-Chiari syndrome), IVC obstruction, right heart failure, constrictive pericarditis

Others—kala-azar, amyloidosis, severe tricuspid regurgitation (TR)

Drugs—paracetamol, isoniazid (INH), valproate, halothane.

## 20. HICCUP

Over 100 causes:

- CNS causes—infection, trauma, neoplasms, cerebrovascular accident (CVA)
- Metabolic—uraemia, hyperventilation (hypocapnia)

- Vagus/phrenic nerve irritation—foreign body in ear, pericarditis, MI, GE reflux, aneurysm
- Abdomen—hepatitis, cholecystitis, subphrenic abscess, gastric distention, pancreatitis, gastro-pancreatic malignancy
- Benign—self-limited causes like overeating, heightened emotion, alcohol, carbonated beverages.

## 21. ANOREXIA

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- Systemic illness—tuberculosis, HIV, enteric fever
- GI malignancy, systemic malignancy
- Depression
- Drug side effects
- Cocaine abuse
- Anorexia nervosa (fasting due to fear of getting obese)
- Adrenocortical insufficiency
- Hepatobiliary disease, alcoholic hepatitis
- Thiamine deficiency, hypomagnesemia.

## 22. NAUSEA

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- Motion sickness
- Early pregnancy
- Gall bladder disease
- CNS disorders
- Peritonitis, cholecystitis, hepatitis, appendicitis
- Diabetic ketoacidosis
- Viral gastroenteritis
- Oral contraceptive use
- Radiation exposure
- Migraine
- Hypertensive encephalopathy
- Gastric outlet obstruction
- Intracranial space-occupying lesion (ICSOL)
- Porphyria

- Carbon monoxide poisoning
- Toxic shock syndrome.

### 23. CONSTIPATION

Based on Rome III criteria when  $\geq 2$  criteria are present for at least 3 months during past 6 months

- Straining in more than one-fourth of defecations
- Hard stool in more than one-fourth of defecations
- Sensation of incomplete evacuation in more than one-fourth of defecations
- $<3$  defecations per week
- Sensation of anorectal blockage in one-fourth of defecation
- Manual manoeuvre for facilitation of stool evacuation in one-fourth of defecations.

#### Causes

Drugs—tricyclic antidepressants (TCA), calcium channel blockers (CCB), iron, opioids, cough suppressants.

Neurological—Hirschsprung's disease.

Mechanical—IBS, adhesion, stricture, diverticulitis, torsion, volvulus.

Endocrine—hypothyroidism, hypokalaemia, hypercalcaemia.

Others—low fibre diet, inadequate water intake, chronic laxative abuse, pregnancy, lead, celiac disease, cystic fibrosis.

### 24. INCREASED BOWEL SOUNDS

Bowel sounds should be auscultated before abdominal palpation.

- Mechanical bowel obstruction—adhesion, hernia, neoplasm, volvulus, Ogilvie's syndrome.
- Acute gastroenteritis, malabsorption, lactase deficiency, carcinoid syndrome.

- Small bowel obstruction—intussusception, incarcerated hernia, ascariasis, Crohn's disease, superior mesenteric artery syndrome.

## **25. CHRONIC INTESTINAL PSEUDO-OBSTRUCTION AND GASTROPARESIS**

Diabetes mellitus, hypothyroidism, cortisol deficiency, Parkinson's disease, multiple sclerosis, autonomic dysfunction, myotonic dystrophy, porphyria, progressive systemic sclerosis, paraneoplastic syndrome.

## **26. POSITIVE ABDOMINOJUGULAR REFLUX**

- TR, TS
- Restrictive cardiomyopathy
- Constrictive pericarditis.

It implies RA pressure >9 mm Hg and RV diastolic pressure >12 mm Hg.

## **27. JAUNDICE**

Yellow staining of sclera, skin and mucus membrane with serum bilirubin exceeding 2–3 mg/dL

- Prehepatic—haemolysis, spherocytosis, sickle cell disease, hypersplenism, sepsis, malaria, babesiosis, haemolytic uremic syndrome, haemoglobinopathies
- Hepatic—hepatitis (virus, autoimmune, alcohol, drugs), Gilbert syndrome, haemochromatosis, Wilson's disease, pregnancy (cholestasis), primary biliary cirrhosis, infiltration (sarcoid, fungi, tuberculosis, lymphoma, fatty liver)
- Posthepatic—primary sclerosing cholangitis, choledocholithiasis, Crigler-Najjar, biliary tract tumours, parasites
- Others—cholangitis, cholecystitis, cholestasis of pregnancy, Dubin-Johnson syndrome, Rotor's syndrome.

## 28. ASCITES MIMICS

- Large ovarian/pancreatic cyst
- Pregnancy
- Mesenteric cyst.

## 29. SUSPECT LIVER DISEASE DUE TO CHRONIC ALCOHOL ABUSE

- SGOT:SGPT >2:1
- Raised GGT
- Prolonged PT
- Low BUN and glucose
- Low albumin
- Macrocytosis
- Thrombocytopenia.

## 30. LOWER GASTROINTESTINAL BLEED

Colon cancer, angiodysplasia, diverticulosis, vascular ectasia, haemorrhoids.

## 31. ESOPHAGEAL VARICES

- Cirrhosis, portal vein/splenic vein thrombosis
- Budd-Chiari syndrome.

## 32. CHRONIC ACTIVE HEPATITIS vs CHRONIC PERSISTENT HEPATITIS

	<i>Chronic active hepatitis (CAH)</i>	<i>Chronic persistent hepatitis (CPH)</i>
Jaundice	Common	Rare
Serum albumin	Reduced	Normal
Prothrombin time (PT)	Prolonged	Normal
Bilirubin	>3 mg/dL	<3 mg/dL
Aminotransferase	Increase	Increase
Gamma globulin	Increase	Increase
Fibrotic septa	Present	Absent
Piecemeal necrosis	++	+/-

**33. DRUGS CAUSING PANCREATITIS**

Hydrochlorthiazide, sulfonamides, frusemide, tetracycline, valproic acid, L-asparaginase, estrogen.

**34. INDICATORS OF ACUTE HAEMORRHAGIC PANCREATITIS**

- Cullen's sign—ecchymosis around umbilicus.
- Grey Turner's sign—ecchymosis in flanks.

**35. HEART BURN**

- CVS—angina, valvular disease, pericarditis, myocarditis
- Esophagus—GERD, hiatal hernia, achalasia, esophageal spasm, esophagitis (Candida, HSV, CMV, HIV)
- Stricture, webs, rings, diverticulum, varices, Barrett's esophagus
- Stomach—gastritis, peptic ulcer
- Others—cholecystitis, pancreatitis, fibromyalgia, Tietze syndrome.

**36. EXTRAINTESTINAL FEATURES OF INFLAMMATORY BOWEL DISEASE**

- Sacroiliitis, arthralgias
- Uveitis, episcleritis, recurrent iritis
- Erythema nodosum, pyoderma gangrenosum, aphthous ulcer
- Pericholangitis, sclerosing cholangitis, focal hepatitis.

**37. HORMONE PRODUCING TUMOURS CAUSING DIARRHOEA**

- Carcinoid (serotonin)
- VIPoma
- Medullary carcinoma thyroid (calcitonin)
- Gastrinoma (Zollinger-Ellison syndrome)
- Mastocytosis (histamine)
- Colorectal villous adenoma.