

18. Course Description:

General description:

This course focuses on Gastro Intestinal system to understand structures, biochemical aspects, physiological functions, pathological disorders, microbial, parasitic and viral infections and pharmacological requirements for treatment of gastro-intestinal diseases. In addition, Clinical aspects of gastrointestinal diseases will be introduced to students.

Detailed description:

(1) **Anatomy, Histology & Embryology** 30 hrs

Anatomy:

- Anterior abdominal wall
- Rectus sheath – inguinal canal – spermatic cord
- Peritoneum
- Abdominal viscera (stomach, small intestine, large intestine, liver gall bladder, pancreas)
- Posterior abdominal wall
 - vessels of posterior abdominal wall
 - nerves of posterior abdominal wall

Histology :

- the lip, teeth, sublingual , submandibular & parotid glands
- Dental Histology, vallate and filiform papilla of the tongue
- oesophagus, stomach, duodenum, jejunum, ileum & colon
- Pancreas- liver and gallbladder

Embryology:

- The foregut – development of the esophagus, stomach, duodenum
 - development of the liver, gallbladder and biliary apparatus
 - development of the spleen
- The midgut – rotation of the midgut loop – fixation of the intestine.
- The cecum and appendix
- The Hindgut – the cloaca – the anal canal

(2) **Physiology 11 hours**

- Introduction to GI Physiology
 - Physiology of smooth muscle
 - Neural, hormonal control of GI
 - Blood flow and GI activities
- GI motility:
 - Mastication and swallowing
 - Gastric motor activities and control
 - Small intestinal movements and control
 - Defecation and control
- GI secretions:

Introduction to secretions
Salivary secretion, Mechanisms of secretion, Function, Control
Gastric secretion, Mechanisms, Function, Control
Intestinal secretions
Pancreatic secretion, Mechanisms, Function, Regulation
Liver and Gallbladder: Bile secretion, Function, Control

Digestion and Absorption:
Intestinal specialization
Digestion and Absorption of Carbohydrates
Digestion and Absorption of Proteins
Digestion and Absorption of Lipids
Absorption of water, electrolytes, Ca⁺⁺, Fe⁺⁺
Absorption of Vitamins
Body Energetics, Dietary balance and Regulation of food intake

(3) Pathology 15hours

ESOPHAGUS

Hiatal hernia
Achalasia
Lacerations
Other anatomic & motor disorders
Varices

Esophagitis

Types, mechanisms & appearances

Barrett's Esophagus

Carcinoma

Types, epidemiology, clinical
Morphology

Stomach

Acute Gastritis

Chronic Gastritis

Types (superficial atrophic, granulomatous...etc)
Gastric atrophy
Mechanisms, pathogenesis, morphology

Peptic Ulcer

Pathogenesis, epidemiology
Morphology, complications
Clinical

Tumors

Polyps, other benign
Malignant tumours
Carcinoma, types, morphology, clinical, outcome & risk factors
Lymphoma
Carcinoid
Other

LOWER GI TRACT DISEASES

Congenital Anomalies

- Meckels
- Atresia and stenosis
- Imperforate anus
- Hirschsprung disease
- Ischemic Bowel disease
- Angiodysplasia
- Hemorrhoids
- Diarrheal diseases

- Infection enterocolitis
- Idiopathic inflammatory bowel disease
 - Crohn's Disease
 - Ulcerative colitis

- Diverticulosis

- Tumors
 - Benign (polyps)
 - Malignant

LIVER PATHOLOGY

Definitions

- Cirrhosis
- Hepatic encephalopathy
- Jaudice
- Cholestasios

Hepatitis

- Viral
- Autoimmune

Liver abscess

- Drug induced liver disease
- Alcoholic liver disease

- Hemochromatosis
- Anti trypsin deficiency
- Rye's syndrome
- Billiary cirrhoses
- Cholargitins
- Congenital anomalies of the biliary tree
- Vascular disorders of the liver
- Liver transplantation
- Tumors of the liver

GALLBLADDER DISEASES

- Gall stones
- Cholecystios
- Tumors and associated disease
- Injury iatrogenic
- Extrahepatic bile duct disorders

Choledolithiasis
Ascending cholangitis
Choledochal cyst

PANCREAS

Congenital anomalies
Cystic fibrosis
Pancreatitis
Tumors

(4) Microbiology 14 hrs

Natural defense of the gastrointestinal tract

Normal flora
Immune responses

Viral infections of the intestinal Tract

Rotavirus
Adenoviruses
Caliciviruses
Astroviruses
Enteroviruses

Bacterial infections of the gastrointestinal tract:

Campylobacter
Vibrio species
Diarrhia agent
Salmonella
Plesiomonas
Food poisoning agent
Shigella
Yersinia
E. coli
Helicobacter
Clostridium perfringer
cereus
Clostridium difficile
botulinum

Parasitic infections of the Gastrointestinal Tract

Protozoa:

Giardia lamblia
Cryptosporidium parvum
Entameba histolytica

Helminths:

Enterobius vermicularis
Trichuris trichiura
Ascaris lumbricoides
Hook worms
Strongyloides stercoralis

Tapeworms

Trematodes

Bacterial Infection of the liver

Leptospira spp

Coxiella burnettii

Brucella spp

Mycobacterium

Viral Infections of the liver

EBV, CMV, YF and others

Hepatitis A virus

Hepatitis E virus

Hepatitis B virus

Hepatitis D virus

Hepatitis E virus

Epidemiology

Pathogenesis

Clinical features

Diagnosis

Prevention and control

Parasitic Infections of the liver

Schistosomes

Hydatid disease

Fasciola hepatica

(5) Pharmacology 6 hours

Drugs in peptic ulcer disease

Antidiarrheal, Laxatives, Antispasmodic drugs

Emetics, antiemetics

Drugs in G.I.T inflammatory conditions.

(6) Clinical aspect 2 hrs

SYMPTOMS AND SIGNS

Painful mouth

Dysphagia and Odynophagia

Regurgitation and Belching

Heartburn

Nausea and Vomiting

Abdominal pain

Dyspepsia

Anorexia and Weight loss

Flatulence

Abdominal distension-(bloating)

Altered bowel habits

Rectal bleeding-Tenesmus

Hiccups

Jaundice

Abdominal masses
Ascites
Hernial orifices and Hernias

HISTORY TAKING AND EXAMINATION OF THE ABDOMEN AND G.I SYSTEM

Regions of the abdomen
General approach

Inspection: Hair, Skin, Umbilicus, Contour of the abdomen Peristalsis, Pulsation's, Veins, Movements, and Hernias

Palpation:
Light palpation, Deep Palpation, Palpation of the liver, Dipping technique, Palpation of the spleen, Palpation of the kidneys.

Percussion:
The distended abdomen, the liver the spleen, Assessing for Ascites. (Shifting dullness and Fluid Thrill)

Auscultation:
Bowel sounds, Arterial bruits, Venous Hum, Friction sounds, and Succession splash

Examination of the Hernial orifices and external genitalia

Ano-rectal examination:
Inspection of the anal area
Digital rectal examination
Proctoscopic examination