GASTROHEPATOLOGY UNIT

UNIT DESCRIPTION

The Gastrohepatology unit is approximately 20 hours in length during which students learn about the structure and function of the gastrointestinal system. Successful completion of this unit includes identifying the relevant components of the history and physical examination, choosing and interpreting appropriate clinical tests, diagnosing and formulating a management plan for gastrointestinal disorders.

LEARNING GOALS

Upon completion of this unit, students should be able to:

1. Describe the anatomical structures and physiology of the gastrointestinal system, including the pancreas, liver, gallbladder, stomach, esophagus and intestines.
2. Organize the components of the medical history that are pertinent to the evaluation of the gastrointestinal and biliary tracts.
3. Demonstrate the physical exam techniques that are utilized in the examination of this system.
4. Summarize the risk factors associated with gastrointestinal disorders.
5. Describe the etiology, pathophysiology and signs and symptoms associated with specified gastrointestinal disorders.
6. Explain the prevention and treatment (pharmacological and non-pharmacological) of specified gastrointestinal disorders.
7. Summarize the testing and procedures utilized to evaluate patients with known or suspected gastrointestinal disease and the management of these diseases.
8. Recognize the indications for referral of the patient with gastrointestinal complaints.

UNIT OUTLINE

1. Introduction to the GI tract: anatomy, history, physical exam and pathology
2. Viral Liver Injury: Acute and Chronic Conditions
3. Non-Viral Liver Conditions
4. Irritable Bowel Syndrome
5. Diverticular Disease
6. Diarrhea
7. Inflammatory Bowel Disease
8. Esophageal Diseases
9. Peptic Ulcer Disease
10. Gastrointestinal Hemorrhage
11. Gallstones and Biliary Tract Disease
12. Pancreatitis

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INSTRUCTIONAL OBJECTIVES

Introduction to the GI tract: anatomy, history, physical exam and pathology

1. Review the clinically relevant GI tract anatomy.
2. Describe location of organs and structures associated with each quadrant of the abdomen.
3. Retroperitoneal abdominal structures.
4. Review the components of the history as it relates to the GI tract.
5. Discuss common signs and symptoms related to GI tract and explore a differential diagnosis for their causes for example: anorexia, nausea, vomiting, diarrhea, pain, constipation, hematemesis, melena, rectal bleeding, jaundice, dysphagia, ascites.
6. Assess types of abdominal pain (visceral, parietal, referred) and differential diagnoses in relationship to GI and other abdominal organs.
7. Recall the abdominal examination utilizing a systematic approach with the proper sequence of inspection, auscultation, percussion and palpation.
8. Discuss the significance of rebound and guarding.
9. Describe important "signs" in patients with abdominal pain: Kehr's, Cullen's, Grey-Turner's and Chandelier.
10. Explain special tests performed during abdominal examination: Murphy's, McBurney's, Rovsing's, Psoas, Obturator and evaluation of ascites.

Viral Liver Injury: Acute and Chronic Conditions

1. Review the structure and function of the liver.
2. Explain the interpretation of liver function tests, including AST, ALT, alkaline phosphatase, GGTP, bilirubin, albumen and prothrombin time.
3. Discuss the clinical and laboratory manifestations of acute hepatitis.
4. Report the relative prevalence of the viral hepatitides.
5. Describe the transmission, natural history, and sequence of serologic markers of Hepatitis A.
6. Appraise the prevention of Hepatitis A, including vaccination and post-exposure prophylaxis.
7. Describe the transmission, natural history, sequence of serologic markers and clinical manifestations of acute and chronic Hepatitis B.
8. Explore the prevention of Hepatitis B, including vaccination and post-exposure prophylaxis.
9. Discuss Hepatitis D and the relationship between Hepatitis B and Hepatitis D.
10. Summarize the means of transmission, natural history, and serologic evidence of Hepatitis C.
11. Describe the relationship between Hepatitis C, cirrhosis and hepatocellular carcinoma and identify the indications for treatment.
12. Summarize the management of acute and chronic viral hepatitis.

Non-Viral Liver Conditions

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1. Review the portal circulation and illustrate its importance in hepatic conditions.
2. Organize the histologic classification of drug and alcohol induced hepatic injury and discuss the biochemical and clinical manifestations of each type.
3. Define “fatty liver” and non-alcoholic fatty liver disease (NAFLD) and explore their causes.
4. Integrate the biochemical and clinical manifestations of hepatic toxicity in alcoholic and non-alcoholic liver disease.
5. Discuss the risk factors, pathophysiology, clinical presentation and management of cirrhosis.
6. Describe the risk factors, etiology, clinical manifestations and management of the complications of cirrhosis including hepatic encephalopathy, ascites, esophageal varices and spontaneous bacterial peritonitis.
7. Summarize the biochemical and clinical manifestations and treatment of hepatic toxicity induced by acetaminophen.
8. Review the biochemical and clinical manifestations and treatment of hemochromatosis.
9. Identify less common causes of liver disorders, including Wilson’s disease and cystic fibrosis.

**Irritable Bowel Syndrome (IBS) and Diverticular Disease**

1. Summarize the clinical features of irritable bowel syndrome, including extraintestinal symptoms and psychologic features.
2. Describe the initial evaluation of the patient with suspected irritable bowel syndrome.
3. Review the approach to the management of a patient with IBS.
4. Explain the epidemiology, pathophysiology and clinical features of diverticular disease.
5. Identify the common complications of diverticular disease.
6. Describe the pharmacologic and non-pharmacologic approaches to the management of diverticular disease and their complications.

**Diarrhea**

1. Review the normal physiology of fluid, electrolyte and nutrient absorption in the gut.
2. Explain the pathophysiology of different types of diarrhea.
3. Explore the elements of the history which are particularly important in the evaluation of the patient with acute and chronic diarrhea.
4. Compare signs and symptoms with the causes of diarrhea.
5. Describe the indications for diagnostic testing in a patient with diarrhea.
6. Summarize the management of acute and chronic diarrhea.

**Inflammatory Bowel Disease (IBD)**

1. Distinguish the histologic and epidemiologic characteristics of ulcerative colitis and Crohn’s disease.
2. Describe the clinical presentation diagnostic workup and potential complications of ulcerative colitis.
3. Compare medical and surgical treatments for ulcerative colitis.

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4. Explore the clinical presentation, diagnostic workup and potential complications of Crohn’s disease.
5. Contrast medical and surgical treatments for Crohn’s Disease.
6. Describe the extraintestinal manifestations of Crohn’s disease and ulcerative colitis.
7. Discuss the recommendations for colon cancer screening in patients with IBD.

**Esophageal Diseases**

1. Review the anatomy and physiology of the upper GI tract.
2. Explore the causes and pathophysiology of gastroesophageal reflux disease (GERD).
3. Describe the clinical presentations of GERD.
4. Identify the diagnostic tests available to evaluate GERD.
5. Summarize the relationship between acid reflux, Barrett’s esophagus and malignancy.
6. Define dysphagia and achalasia, and know their clinical presentations and treatments.
7. Review spastic esophageal motility disorders.
8. Discuss the differential diagnosis of chest pain as it relates to the GI tract.
9. Explore the causes, clinical presentation, approach to diagnosis and management of esophageal cancer.

**Peptic Ulcer Disease (PUD)**

1. Discuss the risk factors for PUD including Helicobacter pylori infection and NSAID use.
2. Explain the clinical presentation, evaluation and management of peptic ulcer disease.
3. Demonstrate the relationship between H. pylori and peptic ulcer disease and be familiar with diagnostic tests and treatment regimens used for H. pylori.
4. List the complications of PUD.
5. Describe the management of gastric and duodenal ulcers.
6. Give examples of the risk factors for and strategies used to prevent NSAID-associated GI problems.

**Gastrointestinal Hemorrhage**

1. List the body structures which should be considered as a potential source of gastrointestinal bleeding.
2. Identify the common terms used to describe various manifestations of GI bleed.
3. Recognize signs and symptoms of GI bleeding and ways used to assess the etiology and severity of GI bleed.
4. Describe the initial workup and resuscitation of a patient with GI bleed.
5. Recap the etiologies, diagnostic workup, and treatments for upper GI bleed.
6. Review the etiologies, diagnostic workup, and treatments for lower GI bleed.
7. Summarize the etiologies and diagnostic workup for occult bleeding with the GI tract.

**Gallstones and Biliary Tract Disease**

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1. Review the anatomy and physiology of the biliary tract.
2. Discuss the epidemiology of gallstones.
3. Explore the relative prevalence, appearance, pathogenesis and radiodensity of the different types of gallstones.
4. Generalize the meaning and significance of “gallbladder sludge.”
5. Discuss the natural history of asymptomatic gallstones.
6. Discuss the natural history, diagnosis and management of symptomatic gallstones, including acute and chronic conditions.
7. Construct a differential diagnosis for “biliary colic.”
8. Summarize the indications for pharmacologic, endoscopic and surgical intervention for the complications of gallstones.

**Pancreatitis**

1. Review the etiologies and pathogenesis of acute and chronic pancreatitis.
2. Discuss the pertinent history and physical findings in a patient with acute and chronic pancreatitis.
3. Recite the appropriate laboratory and radiologic evaluation of a patient with suspected pancreatitis.
4. Describe the clinical management of patients with acute and chronic pancreatitis.
5. Explore the complications of acute and chronic pancreatitis, and review their treatment.

**TEACHING STRATEGIES**

Lectures
Case studies

**METHODS OF EVALUATION**

Examination 100%

**REQUIRED READINGS:**

Goldman and Ausiello: *Cecil Textbook of Medicine*, 23rd Edition
Bates’ *Guide to Physical Examination and History Taking*, Bickley and Szilagyi, 10th edition,
Lippincott William and Wilkins, 2009
Selected Handouts