

CURRICULUM: GASTROENTEROLOGY

I. GOALS

Persons training in Internal Medicine at Saint Luke's Medical Center and St. Vincent Charity Hospital are expected to learn a broad overview of the pathophysiology, diagnosis, and treatment of common digestive diseases through a practical program of working with patients directly, reading broadly and specifically from medical text books and current journals, and writing appropriate consults, presenting clinical cases clearly for discussion, review of all pertinent studies, and participating in all rounds, conferences, clinics, and procedures during their time at the medical center.

II. CONTENT & TEACHING METHODS

A. The medicine resident should be able to perform a thorough gastrointestinal history and physical exam and understand the clinical significance of the findings. The monthly teaching attending will review history and physical examinations on inpatient consults. The attending in GI Clinic at Saint Luke's and St. Vincent's will review those in GI Clinic.

Specific objectives

1. To understand the significance of abnormal findings noted in the clinical history and review of systems including sore or burning mouth, dysphagia, chest pain of esophageal origin, abdominal pain, nausea or vomiting, diarrhea, jaundice, constipation, weight loss, intestinal blood loss, and complaints of gas.
 2. To accurately evaluate the abdomen by physical examination and to interpret the abnormal appearance and findings involving the liver, spleen, masses, hernias, bowel sounds, bruits, tenderness, signs of peritoneal inflammation, ascites, anal and perianal lesions, rectal lesions, and abnormalities of the oral cavity.
 3. To identify systemic signs of chronic liver disease, including jaundice, parotid enlargement, spider angiomas, palmar erythema, alterations in secondary hair characteristics, gynecomastia, testicular atrophy, Dupuytren's contractures, caput medusae, hepatic encephalopathy, esophageal varices and rectal varices, or hemorrhoids.
 4. To identify signs and symptoms of gastrointestinal bleeding, including: hematemesis, melena, hematochezia and occult blood in the stool.
 5. To recognize clinical signs of malnutrition and specific signs of nutritional deficiencies such as common vitamin deficiencies.
- B. The medical resident should understand the methodology and clinical significance of tests that provide diagnostic information about the liver and gastrointestinal tract.

Specific objectives

1. To understand the clinical significance of abnormal liver function test.
2. To understand the clinical significance of tests of acute and chronic hepatitis including hepatitis serologic markers, antimitochondrial antibody, anti-smooth muscle antibody, anti-nuclear antibody, alpha 1 antitrypsin levels, ceruloplasmin, serum iron and total iron binding capacity, carcino-embryonic antigen and alpha-fetoprotein.

3. To understand the clinical significance of abnormal tests of pancreatic function, including serum amylase and lipase, bentiromide test, and qualitative fecal fat examination.
 4. To understand the clinical significance of tests of maldigestion and malabsorption including the qualitative fecal fat stain of the stool for free and split fats, serum carotene, prothrombin time, quantitative fecal fat analysis, and xylose absorption test.
 5. To understand the clinical significance of tests for diarrhea including stool volume, response to fasting, osmolarity and electrolyte content, fecal leukocytes, stool culture, stool examination for ova and parasites, and stool examination for clostridium difficile toxin.
 6. To understand the clinical significance of tests for gastric function including serum gastrin, pentagastrin stimulation for gastric analysis, and secretin provocation for detection of gastrinoma.
 7. To understand the interpretation and indications, and complications of radiologic examinations of the liver and gastrointestinal tract including upper GI series, barium swallow, small bowel follow through, barium enema, abdominal ultrasound, abdominal CAT scan, HIDA scan, labeled red cell scan, and abdominal angiography.
 8. To understand the indications and complications of endoscopy of the gastrointestinal tract, including upper endoscopy, colonoscopy, ERCP, and therapeutic endoscopy.
 9. To develop understanding of the indications and complications of flexible sigmoidoscopy, and to be able to perform this procedure.
 10. To understand the indications and complications of therapeutic endoscopic procedures including variceal sclerotherapy, variceal banding, polypectomy, coagulation of gastrointestinal hemorrhage, endoscopic sphincterotomy, biliary stent placement, and dilation of strictures in the esophagus and elsewhere in the GI tract.
 11. To understand the indications and methodology for evaluation of esophageal disease including esophageal manometry and 24 hour pH monitoring.
 12. To understand the indications for liver and small bowel biopsy and the complications associated with those procedures.
- C. The medicine resident should be familiar with the fundamental diagnostic approach to the following disorders:
1. sore mouth
 2. difficulty swallowing
 3. chest pain of noncardiac origin
 4. abdominal pain
 5. gastrointestinal bleeding
 6. iron deficiency anemia (or occult blood in the stool)
 7. jaundice
 8. diarrhea
 9. malabsorption/maldigestion

10. weight loss/malnutrition/anorexia
11. abnormal liver function test
12. ascites
13. nutritional deficiencies both global and specific
14. gastrointestinal manifestations of immunodeficiency disorder
15. constipation
16. common anal/anorectal problems such as hemorrhoids, fissures, and fistulae
17. common gastrointestinal problems in the pregnant patient
18. abdominal distention
19. excess intestinal gas
20. fecal incontinence
21. food intolerance
22. heartburn
23. hematemesis
24. indigestion
25. liver failure
26. melena
27. nausea and vomiting

- D. A series of illustrative cases for each of these problems will be developed by GI attending physicians. The resident will be asked to discuss them in depth with the clinic attending (one case per day).
- E. The medicine resident should be able to establish a comfortable professional relationship with the patient, should be sensitive to the anxieties of the patient and patient's family, and should be able to effectively communicate with the patient and patient's family about the disease, the anticipated diagnostic evaluation, and therapeutic intervention. The monthly attending and the GI Clinic attending will focus teaching in this area.
- F. The medicine resident should be familiar with the cost of daily hospital care, the specific diagnostic tests, therapeutic intervention, and should be able to compare sensitivity and specificity of the tests and relative value of the various therapeutic alternatives.
- G. The medicine resident should be familiar with how to use library resources and computer literature searches to answer specific questions related to patient care.
- H. The medicine resident should be familiar with the pharmacology, indications, side effects, and costs of commonly prescribed gastrointestinal medications including H₂ receptor blockers, Omeprazole, Sucralfate, Metoclopramide, Sulfasalazine, Lactulose, and analogs of 5-aminosalicylic acid.
- I. Consultations: the consultation sheets should be stamped properly and all information regarding referring physician and reason for consultation should be filled out. A concise but excellent history and physical exam with special focus on the gastrointestinal symptoms and exam should be part of the consultation. Major emphasis should be placed on the assessment including the differential diagnosis, the specific points in the case which were in favor of individual items in the differential diagnosis and the suggestions for further evaluation and management. These recommendations should be based on discussions with the attendings as well as on two references, one of which should be a general medical textbook and the

other a journal article from the library. Consultations should be completed within 24 hours and should be placed in the patient's medical chart and signed by the GI attending. For all consults, it is imperative that the GI consultation team communicate in a direct verbal manner with the consulting residents or physicians to be sure that their question has been answered satisfactorily and to facilitate carrying out the additional diagnostic and therapeutic procedures suggested. The consulting resident should be sure that before the patient leaves the hospital that the patient's questions have been answered regarding what was the nature of the gastrointestinal problem and what further evaluation, treatment, and follow up are indicated.

- J. Specific procedures to learn
 - 1. Flexible sigmoidoscopy
 - 2. Paracentesis with interpretation of ascitic fluid characteristics
 - 3. Nutritional assessment
 - 4. How to obtain informed consent for procedures

III. TEACHING METHODS

The above objectives will be accomplished through:

- A. Seeing consultations from the inpatient service (including MICU & CCU) at SVCH.
- B. Attending rounds on the Gastroenterology Consult Service: the time and format of the attending rounds will be arranged with the teaching attending each month and these rounds will be held approximately 5 times per week. At least one hour will be devoted to management issues of patients, followed by the consult service and at least one hour will be devoted to teaching about pathophysiology, pharmacology, and general concepts of gastrointestinal illness.
- C. Seeing patients in the GI clinic during the gastroenterology subspecialty month. Every Friday morning at SLMC, 2nd and 4th Friday afternoon at SVCH.
- D. More than half of the endoscopy procedures are done on ambulatory patients, and the resident should become familiar in this context with common ambulatory problems referred for endoscopy and GI evaluation. In addition, the medicine resident is encouraged to make individual arrangements with other gastroenterologists.
- E. Hospitalized and ambulatory patients for all socioeconomic and ethnic backgrounds are included in the patients seen.
- F. Discussions on teaching rounds
- G. Conferences

In addition to the regular management and teaching rounds with the attending on the GI service, the resident on the GI service is expected to attend medical Grand Rounds, medical Journal Club, tumor conference, morbidity and mortality conference, and noon conferences specifically designed for medical resident teaching purposes.

The assigned GI physicians will also teach the residents the following items:

 - Reviewing GI x-rays
 - Endoscopic procedures: indications, contraindications, exploration benefits, costs
 - Evaluation of liver disease

- Nutritional assessment and management
- Pharmacology of common GI medications

H. Expected reading: the GI section of any standard medical textbook such as Harrison, Cecil-Loeb, or Stein should be read in its entirety during the rotation. Additional specific papers from up to date medical journals should be read in relation to each case and topic that is presented and discussed.

IV. EVALUATION

A. EVALUATION OF THE RESIDENT

The medical resident will be evaluated by the teaching GI attending on the basis of performance on history taking, physical exam, consultation notes, reading, case presentation, general participation in the activities of the GI service, and specific understanding of common and important concepts in gastroenterology as determined toward the end of the rotation. The resident will be given direct verbal feedback at the end of the rotation by the attending physician. The standard ABIM written evaluation form will be completed.

B. EVALUATION OF THE ROTATION

The resident will be asked to help in evaluating how well the GI consultation service has fulfilled its goals in teaching the above material. The resident will be encouraged to pursue independent study in the areas which have not been learned on the service. Efforts will be made to include areas which have not been adequately covered in Grand Rounds, GI noon conferences, M&M conferences, medical Journal Club, tumor conference, resident board review sessions, core rotation, ambulatory rotations, and electives.

The overall GI curriculum will be evaluated by scores on the annual In Service as well as the ABIM results of the residents as a group. The GI curriculum will be evaluated as part of the annual review of the residency by the faculty and residents.

V. APPENDICES

A. INTERNET RESOURCE

American Gastroenterological Association(AGA)

www.gastro.org

American Association for the Study of Liver Diseases (AASLD)

www.aasld.org

Digestive Disease Week (DDW – annual meeting for AGA, AASLD and other GI organizations)

www.ddw.org

Gastroenterology (the journal)

www.gastrojournal.org

Hepatology (the journal)

Hepatology.aasldjournals.org

Centers for Disease Control and Prevention (CDC)

www.cdc.gov

National Guideline Clearinghouse

www.guideline.gov