DISEASES OF THE DIGESTIVE APPARATUS

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GENERAL OBJECTIVES
During the course students must acquire the theoretical knowledge and clinical skills that enable them to identify the main problems associated with diseases of the digestive apparatus. They must also be able to formulate a diagnosis, through correct application of current diagnostic methods, and decide upon treatment. The knowledge which students must acquire during their study of digestive diseases is grouped into a number of sections, as set out below.

SPECIFIC OBJECTIVES
A. At the end of the course students must be able to identify the main problems associated with digestive disorders, specifically:
   1. Dysphagia
   2. Heartburn (pyrosis)
   3. Chest pain of unknown origin
   4. Nausea and vomiting
   5. Dyspepsia
   6. Abdominal pain
   7. Meteorism
   8. Diarrhoea
   9. Constipation
  10. Anal pain and/or itching
  11. Gastrointestinal haemorrhage
  12. Digestive tract lesions due to caustic substances
  13. Jaundice. Cholestasis
  14. Ascites
  15. Hypertransaminasemia
  16. Abdominal mass

B. Students must understand the theoretical bases of the diagnostic methods used in digestive disorders, specifically:
   1. Abdominal examination
   2. Simple and contrast radiology of the digestive tract
   3. Diagnostic digestive endoscopy
   4. Ultrasonography and ultrasound endoscopy
   5. Computed axial tomography and magnetic resonance
   6. Oesophageal manometry and pHmetry
   7. Digestive functional tests
   8. Isotope analysis in the diagnosis of digestive disorders
   9. Anorectal examination
  10. Hepatic function tests
  11. Microbiological diagnosis of infectious enterocolitis
  12. Hepatitis virus markers
  13. Laparoscopy
C. Students must be familiar with the diagnosis and medical/surgical treatment of the main digestive disorders, specifically:

1. Oesophagitis
2. Oesophageal motor disorders
3. Oesophageal cancer
4. Peptic ulcer
5. Gastritis
6. Functional disease of the digestive apparatus
7. Gastric neoplasias
8. Malabsorption/maldigestion syndrome. Intestinal diseases that may be accompanied by malabsorption
9. Vascular diseases of the intestine
10. Infectious and parasitic enterocolitis
11. Chronic inflammatory intestinal disease
12. Intestinal obstruction
13. Colonic diverticular disease
14. Intestinal polyposis and colorectal cancer
15. Non-endocrine intestinal neoplasias
16. Anorectal disorders
17. Acute pancreatitis
18. Chronic pancreatitis
19. Pancreatic neoplasias
20. Endocrine tumours of the intestinal tract and pancreas
21. Abdominal wall disorders
22. Peritoneal and mesenteric disease
23. Acute abdomen
24. Abdominal trauma
25. Jaundice
26. Portal hypertension
27. Ascites
28. Hepatic encephalopathy
29. Viral hepatitis
30. Chronic viral hepatitis
31. Hepatic disorders caused by prescribed drugs and industrial or natural toxins
32. Severe acute hepatic insufficiency
33. Alcohol-induced hepatic disorders
34. Liver cirrhosis
35. Hepatic disorders of probable autoimmune origin
36. Inherited hepatic disorders
37. Liver tumours
38. Vascular disorders of the liver
39. Specific hepatic infections
40. Cholelithiasis
41. Neoplasias of the biliary tracts
42. Biliary tract malformations and non-parasitic liver cysts
D. Students must acquire the following **skills**:

- Take a detailed history from the patient with a digestive disorder, including the patient’s description of symptoms and their interpretation, as well as the systematic investigation of other possible symptoms not initially reported by the patient.

- To perform a correct physical examination of the signs associated with gastroenterological and hepatic disorders, as well as those related to other apparatus. The abdominal examination is particularly important with respect to the physical examination for possible digestive disorders, and should include: inspection, palpation, assessment of the depressibility or resistance of the muscular wall, and of the pain caused by examination and its possible origin in peritoneal irritation, the detection of masses and their characteristics, the detection of enlarged organs (liver and spleen) and inguinal adenopathy, and auscultation for both the presence or absence of abdominal sounds and their characteristics and the detection of possible abdominal murmurs or gastric gurgling.

- Auscultation of the hepatic area and other basic, exploratory manoeuvres in examining the digestive apparatus, such as rectal examination and exploratory paracentesis.

- Interpret a simple x-ray of the abdomen, of oesophageal gastrointestinal transit and of opaque enema. Interpret other complementary tests such as abdominal ultrasound, computed axial tomography, nuclear magnetic resonance, arteriography, biliary tract radiology, isotope tests in the study of the digestive tract and liver, oesophageal manometry and hepatic haemodynamics.

- Be familiar with the indications, contraindications and possible complications of the most common diagnostic and therapeutic endoscopic procedures (fibrogastroscopy, fibrocolonoscopy, endoscopic retrograde cholangiography, laparoscopy).

- Be familiar with the indications, contraindications and possible complications of the most common functional tests used to study the digestive tract, liver, biliary tract and pancreas.

- Be familiar with the indications, contraindications and possible complications and sequelae of the most common surgical interventions; know how to handle the most widely used probes and drainage. Be familiar with simple postoperative management in digestive disorders.

- Understand the theoretical bases of the microbiological diagnosis that enables the correct approach and interpretation of findings in digestive disorders.

- Interpret pathoanatomical reports in order to link correctly, and in conjunction with the pathologist, the morphological findings with the clinical features and evolution of the patient.

**SYLLABUS**

**A. IDENTIFYING PROBLEMS**

Students must have fully assimilated the knowledge regarding the identification of digestive problems gained during the course *General Signs and an Introduction to Clinical Pathology* prior to studying the diseases of the digestive apparatus.

1. **Dysphagia**
   Identify the difficulty of food bolus passage through the oesophagus, distinguish between solid and liquid dysphagia, and distinguish it from painful swallowing (odinophagia). Identify the progressive or intermittent nature of the problem which will suggest either an organic cause (inflammatory or neoplastic stenosis) or a motor disorder (achalasia, diffuse spasm, etc.), respectively. Identify the association with other symptoms such as heartburn, regurgitation, tracheobronchial aspiration, sialorrhoea, malnutrition, etc. Identify any underlying disease that may be related to this symptom, such as scleroderma, gastroesophageal reflux or diseases that produce opportunistic oesophageal infections, for example, acquired immune deficiency syndrome.

2. **Heartburn (pyrosis)**
   Identify this highly specific symptom of gastroesophageal reflux and determine its post-prandial or nocturnal pattern. Identify the possible association with other symptoms of gastroesophageal reflux such as dysphagia, nocturnal coughing, regurgitation and bronchial asthma.
3. Chest pain of oesophageal origin
Identify chest pain of oesophageal origin and distinguish it from coronary chest pain on the basis of clinical features and various diagnostic tests, as well as through its association with other oesophageal symptoms such as heartburn, dysphagia, etc. Assess the benefits of various diagnostic tests (endoscopy, radiology, oesophageal manometry, pHmetry) in determining the oesophageal origin of pain.

4. Nausea and vomiting
Distinguish between a central and digestive origin of vomiting, and between vomiting and regurgitation or expectoration. Determine the characteristics of vomit in terms of both its form (post-prandial, projectile, whether or not it is preceded by nausea, etc) and content (watery, food, bile, retentive, bloody, etc). Identify all the digestive disorders that may be accompanied by vomiting. Recognize the clinical consequences of vomiting (dehydration, metabolic alkalosis, hypochloremia, Mallory-Weiss syndrome, etc).

5. Dyspepsia
Understand the definition of dyspepsia and all the symptomatology associated with this syndrome. Distinguish between ulcerative dyspepsia, which is characterized by typical symptoms and is usually associated with a peptic ulcer, and pseudoulcerative dyspepsia, which is clinically similar to the former but without the presence of an ulcer. Identify another type of dyspepsia known as functional or idiopathic dyspepsia, which is characterized by a wide range of upper digestive tract symptoms in a patient in whom an organic cause has been ruled out. Be familiar with the sub-types of functional dyspepsia. Be familiar with the diagnostic tests that must be performed in order to distinguish between organic and functional dyspepsia.

6. Abdominal pain
Be familiar with the basic anatomy and physiology of abdominal pain and the stimuli which cause it. Learn to define the characteristics of pain in terms of its localization, intensity and nature, evolution over time, the factors that improve or exacerbate it, and the association with other signs and symptoms. Distinguish the different types of pain and know how to recognize the particular features and locations according to the abdominal organ where the pain originates. Understand that the perception of pain may differ from one patient to another and that this must be taken into account during assessment with respect to each patient's personality. Learn the exploratory information that will help interpret the possible aetiology of pain and be familiar with the sequence of examinations that must be performed according to the characteristics of each type of pain. Understand the concept of surgical and non-surgical acute abdomen. Most frequent causes of acute abdomen. Clinical assessment and the utility of conventional radiology, abdominal ultrasound and other complementary tests in the diagnosis of acute abdomen. Be familiar with the incidence, clinical manifestations, exploratory information (abdominal palpation, rectal examination) and laboratory data (haemogram) that enable a diagnosis of acute appendicitis to be made.

7. Meteorism
Understand the aetiology of gas in the digestive tract. Analyse the causes of an excessive amount of gas in the intestine and how this may be experienced by the patient as a specific symptom. Association between meteorism and other digestive symptoms. Meteorism as a symptom within the concept of dyspepsia or irritable bowel.

8. Diarrhoea
Understand the definition of diarrhoea, both acute and chronic. Understand the physiological mechanisms of water and electrolyte absorption and secretion in the intestine and the formation of faeces. Be familiar with the definition of osmotic and secretory diarrhoea and the characteristics of both forms. Be familiar with intestinal motility disorders that affect the formation of faeces and the onset of diarrhoea. Identify the characteristics of diarrhoea (evolution over time, quantity, appearance, odour, composition, pathological elements) and the associated symptoms that may provide a clue as to its origin. Learn the procedure for diagnosing acute and chronic diarrhoea. Understand the concept of malabsorption-maldigestion.

9. Constipation
Understand the concept of constipation and the epidemiology of this disorder. Be familiar with the mechanisms and causes of constipation that has an organic basis, whether its origin be gastrointestinal, neurogenic or linked to systemic disorders. Understand the concept of congenital or acquired megacolon. Be familiar with the mechanisms of idiopathic constipation. Be familiar with the diagnostic methods used to assess whether constipation is the result of an organic process.

10. Anal pain and/or itching
Identify anal pain. Understand its relationship to the act of defecation. Distinguish between anal and vaginal discomfort in women. Be familiar with the possible relationship between anal discomfort (pain and/or itching) and the whole range of anal pathology, especially in homosexual patients. Be familiar with the indications and interpretation of the anal examination, both manual and via rectoscopy.
11. Gastrointestinal haemorrhage
Be familiar with the different forms of digestive tract haemorrhage. Learn to assess the patient with acute gastrointestinal haemorrhage, in terms of both a possible aetiological diagnosis of the haemorrhage and the haemodynamic consequences of it. Learn the characteristic features that enable the upper or lower origin of a digestive tract haemorrhage to be distinguished. Diagnostic strategy for an upper digestive tract haemorrhage and possible causes. Diagnostic strategy for a lower digestive tract haemorrhage and possible causes. Form of presentation and clinical manifestations of chronic gastrointestinal haemorrhage. Assessment of blood loss that appears in faeces.

12. Digestive tract lesions caused by caustic substances
Be familiar with the most common caustic substances that cause oesophageal/gastric lesions and the pathogeny of the lesions caused by each one. Be familiar with the clinical manifestations of these lesions, in both the acute and later stage. Be familiar with the complications associated with these lesions. Learn to assess the patient with such a lesion and schedule the appropriate diagnostic tests.

13. Jaundice. Cholestasis
Be familiar with the most important clinical and analytic information required when assessing the patient with jaundice. Distinguish between metabolic jaundice and cholestasis. Understand the importance of establishing a differential diagnosis between intrahepatic and extrahepatic cholestasis, be familiar with the most common causes, and know how to apply an appropriate series of examinations to identify both types of cholestasis and their aetiology. Understand the importance of how the cholestasis has evolved (acute, relapsing and chronic cholestasis) in making this differential diagnosis. Know when the urgent identification of the origin of cholestasis is necessary. Be familiar with the intra- and extra-hepatic consequences of chronic cholestasis. Be familiar with anicteric forms of cholestasis, the most common causes and their differential diagnosis.

14. Ascites
Be familiar with the clinical and exploratory information required to diagnose the presence of fluid in the peritoneal cavity. Recognize the different types of ascites on the basis of the macroscopic, biochemical and cytological characteristics of the ascitic fluid (exudative, transudative, bloody, chylous, biliary, pancreatic) and their most common causes. Be familiar with the specific procedures for making an aetiological diagnosis of ascites and the order in which they should be performed. Be able to recognize spontaneous bacterial peritonitis.

15. Hypertransaminasemia
Understand the meaning of increased levels of plasma transaminases in the diagnosis of liver disease. Causes of prolonged hypertransaminasemia. Specific diagnostic tests in patients with prolonged hypertransaminasemia and the order in which they should be performed.

16. Abdominal mass
Develop a diagnostic procedure according to the abdominal localization of the mass that enables identification of the organ or tissue responsible for it and thus propose treatment.

B. THEORETICAL BASES OF DIAGNOSTIC METHODS USED WITH DIGESTIVE DISORDERS
The theoretical bases of the diagnostic methods used with digestive disorders are acquired during both the theoretical and, especially, the clinical teaching.

1. Abdominal examination
Method to be applied for inspection, palpation, percussion and auscultation of the abdomen. Detection of masses, enlarged organs, adenopathy, hernias, ascites, abdominal distension, peritonism, characteristics of peristaltism and alterations in the lining of the abdominal wall.

2. Simple and contrast radiology of the digestive tract
Interpreting a simple abdominal x-ray taken in both the prone and upright positions. Method of examining the digestive tract using contrast agents (oesophageal gastrointestinal transit and opaque enema) and interpretation of the results. Cineradiology in the study of the oesophagus. Radiological examination of the biliary tract: cholecystography and cholangiography. Indications and contraindications of radiological examinations of the digestive tract.
3. Diagnostic and therapeutic digestive endoscopy
Methods for the endoscopic study of the upper and lower digestive tract. Types of endoscopy. Indications and contraindications of endoscopy in the upper (fibrogastroscopy and jejunoscopy) and lower (rectosigmoidoscopy and colonoscopy) tract. Method, indications and contraindications of endoscopic retrograde cholangiopancreatography. Sedation of patients for digestive endoscopy. Introduction to the concept of therapeutic endoscopy.

4. Ultrasonography and ultrasound endoscopy
Theoretical basis of abdominal ultrasound. Indications for ultrasound. Advantages and limitations of this technique compared to other radiological or imaging diagnosis methods in assessing abdominal pathology. Concept and utility of Doppler ultrasound. Utility and diagnostic possibilities of ultrasound endoscopy. Introduction to the concept of ultrasound-guided therapeutic techniques.

5. Computed axial tomography and magnetic resonance
Theoretical basis of computed axial tomography and magnetic resonance. Indications for use of the two techniques and the main advantages and disadvantages of each one compared to other diagnostic methods for assessing abdominal pathology. Contraindications of the two techniques.

6. Oesophageal manometry and pHmetry
Methods of oesophageal manometry and short or 24-hour pHmetry. Indications for use of the two techniques in oesophageal pathology and interpretation of the results. Provocation tests (Bernstein’s test).

7. Functional digestive tests

8. Isotope tests in the diagnosis of digestive disorders

9. Anorectal examination
Methods, indications and utility of manual examination, anoscopy, rectoscopy and rectal manometry.

10. Hepatic function tests
Essential analytic tests in the diagnosis of liver disease. Tests that hepatic necrosis, cholestasis, hepatic insufficiency and space-occupying lesions.

11. Microbiological diagnosis of infectious enterocolitis

12. Hepatitis virus markers
Most widely used markers in the diagnosis of viral hepatic disorders. Markers of infection due to the hepatitis A virus. Markers of infection due to the hepatitis B virus and identification of those that indicate active viral replication. Markers of infection due to the hepatitis C virus. Markers of infection due to the hepatitis D virus. Serological diagnosis of viral hepatic disease of different aetiology.

13. Laparoscopy
Indications, contraindications and diagnostic possibilities of laparoscopy in the diagnosis of hepatic, pancreatic, and peritoneal disease and disorders affecting other intra-abdominal organs. Therapeutic possibilities of laparoscopic surgery.

14. Liver biopsy
Basic lesions in liver disease. Histological diagnosis of the most common liver diseases: acute hepatitis, intrahepatic and extrahepatic cholestasis, chronic hepatitis and liver cirrhosis.

15. Pathological anatomy of the digestive tract and pancreas
Basic lesions in digestive tract and pancreatic disorders. Histological diagnosis of the most common disorders.
16. Hepatic haemodynamics
Basic aspects of hepatic haemodynamics. Diagnosis of different types of portal hypertension on the basis of the determination of free and wedged suprahepatic pressure. Other techniques for diagnosing portal hypertension.

17. Arteriography
Indications for selective arteriography (celiac trunk, hepatic, mesenteric and splenic arteries) in the assessment of digestive disorders.

18. Diagnostic paracentesis
Methods. Aetiological diagnosis of ascites on the basis of the macroscopic, biochemical and cytological characteristics of the ascitic fluid.

C. DIAGNOSIS AND TREATMENT OF THE MAIN DISEASES OF THE DIGESTIVE APPARATUS
TC: Theory class  
SCT: Scheduled clinical teaching (seminars)  
IL: Independent learning

1. Oesophagitis (SCT)

2. Oesophageal motor disorders (IL)
Motor disorders of the upper oesophageal sphincter and upper third of the oesophagus. Acalasia: aetiology, pathogeny, clinical manifestations; radiological, endoscopic and manometric diagnosis, pharmacological treatment; endoscopic treatment via dilatation, surgical or endoscopic myotomy. Diffuse oesophageal spasm: physiopathology, clinical manifestations, radiological, endoscopic and manometric diagnosis. Pharmacological treatment, treatment with surgical or endoscopic dilatation. Systemic diseases associated with oesophageal motor disorders: connective tissue disease, diabetes mellitus and chronic alcoholism.

3. Oesophageal cancer (TC)
Squamous oesophageal cancer: incidence and epidemiology, clinical manifestations, radiological and endoscopic diagnosis (biopsy and cytology). Differential pathoanatomical characteristics between this kind of tumour and adenocarcinoma. Surgical treatment, radiotherapy, palliative treatment through fitting a prosthesis or laser fulguration; prognosis. Adenocarcinoma: adenocarcinoma of the gastric cardia or gastric fundus spreading to the distal third of the oesophagus. Adenocarcinoma over Barrett’s epithelium. Clinical manifestations, diagnosis, treatment and prognosis. Other malignant oesophageal tumours. Benign oesophageal tumours.

4. Peptic ulcer (TC)
5. Gastritis (TC)

6. Functional disorders of the digestive apparatus (IL)

7. Gastric neoplasias (TC)

8. Malabsorption-maldigestion syndrome (TC)

9. Vascular disorders of the intestine (IL)

10. Infectious and parasitic enterocolitis (TC)
11. Chronic inflammatory intestinal disease (SCT)

12. Intestinal obstruction (TC)

13. Colonic diverticular disease (IL)

14. Intestinal polyposis and colorectal cancer (SCT)

15. Non-endocrine intestinal neoplasias (IL)

16. Anorectal disorders (TC)
Pathogeny and clinical manifestations of disorders in this region of the digestive tract: haemorrhoids, anal fissures and fistulas, anorectal abscess, anal itching, sexually-transmitted diseases affecting this region, anal incontinence, rectal prolapse, solitary anal ulcer, proctalgia fugax and coccygodynia. Symptoms and types of presentation of anal canal tumours. Cloacogenic carcinoma.

17. Acute pancreatitis (TC)

18. Chronic pancreatitis (TC)
Diseases of the digestive apparatus


19. Pancreatic neoplasias (TC)

20. Endocrine tumours of the intestinal tract and pancreas (IL)

21. Abdominal wall disorders (TC)
Overview of abdominal wall anatomy. Definition, pathogeny, diagnosis and treatment of abdominal wall anomalies: umbilical hernia, inguinal hernia, crural hernia, other hernias, evventration, surgical wound infections, wounds of other aetiology, tumours and haematomas.

22. Peritoneal and mesenteric disorders (IL)

23. Acute abdomen (SCT)

24. Abdominal trauma (IL)
Open and closed abdominal traumas. Lesions in solid and hollow viscera. Diagnosis and treatment. Priorities in the context of a patient with multiple traumas.

25. Jaundice (TC)
Physiology of the formation, transport and hepatic excretion of bilirubin and biliary salts. Clinical anatomy of the intrahepatic and extrahepatic biliary tracts. Concept of metabolic jaundice. Jaundice to an increase in indirect bilirubin: haemolytic syndrome, ineffective haematopoesis, Gilbert’s syndrome, Crigler-Najjar disease types I and II. Jaundice due to an increase in conjugated bilirubin: Dubin-Johnson syndrome, Rotor syndrome. Differential diagnosis and therapeutic strategy. Concept of cholestasis. Most common causes of intrahepatic cholestasis. Most common causes of extrahepatic cholestasis. Diagnostic methods and the order in which they should be performed to identify the location (intra- or extra-hepatic) of the obstruction to biliary flow and its aetiology. Cholangitis and biliary sepsis: concept, diagnosis, complications and treatment. Adverse effects of chronic cholestasis on the liver (secondary biliary cirrhosis) and other organs (intestinal malabsorption, malabsorption of liposoluble vitamins, osteoporosis) and its treatment. Cholestasis during pregnancy, relapsing benign cholestasis.

26. Portal hypertension (TC)
27. Ascites (TC)

28. Hepatic encephalopathy (TC)
Identify acute hepatic encephalopathy by establishing a differential diagnosis with respect to neuropsychiatric disorders of other aetiology. Be familiar with the clinical information required to determine the severity of acute hepatic encephalopathy. Recognize when acute hepatic encephalopathy is due to chronic liver disease or secondary to severe, acute hepatic insufficiency. Be familiar with the factors that precipitate hepatic encephalopathy in chronic liver diseases. Identify chronic hepatic encephalopathy by establishing a differential diagnosis with respect to other chronic neuropsychiatric disorders. Be familiar with the complementary procedures used to diagnose hepatic encephalopathy and their value in terms of determining the extent of the problem (number connection test, electroencephalogram, evoked potentials test). Recognize sub-clinical hepatic encephalopathy. Concept of hepatic encephalopathy. Physiopathology: neurotransins (ammonia, mercaptans), alteration of GABA-ergic neurotransmission, false neurotransmitters. Clinical features and diagnosis: grading the clinical severity of the encephalopathy, psychometric tests, electroencephalography, evoked potentials. Clinical significance of hepatic encephalopathy in acute and chronic liver diseases. Factors that precipitate hepatic encephalopathy in cirrhosis. Hepatic encephalopathy: dietary treatment, oral neomycin, lactulose.

29. Viral hepatitis (SCT)

30. Chronic viral hepatitis (TC)

31. Hepatic disorders caused by prescribed drugs and industrial or natural toxins (IL)
32. Severe acute hepatic insufficiency (TC)

33. Alcohol-induced hepatic disorders (TC)

34. Liver cirrhosis (TC)

35. Hepatic disorders of probable autoimmune origin (IL)

36. Inherited hepatic disorders (IL)
37. Liver tumours (SCT)


38. Vascular liver disorders (IL)


39. Specific liver infections (IL)


40. Cholelithiasis (TC)


41. Bile duct neoplasias (TC)


42. Biliary tract malformations and non-parasitic liver cysts (IL)

Diseases of the digestive apparatus

43. Liver transplant (TC)

THEORY CLASSES

T. 3. Oesophageal cancer (Dr. Grande)
T. 4. Peptic ulcer (Dr. Piqué)
T. 5. Gastritis (Dr. Bordas)
T. 7. Gastric neoplasias (Dr. Fuster)
T. 8. Malabsorption-maldigestion syndrome. Intestinal disorders that may be accompanied by malabsorption (Dr. Piqué)
T.10. Infectious and parasitic enterocolitis (Dr. Vila)
T.12. Intestinal obstruction (Dr. García-Valdecasas)
T.16. Anorectal disorders (Dr. García-Valdecasas)
T. 17 and 18. Acute and chronic pancreatitis (Dr. Fernández-Cruz)
T.19 and 41. Periampullary neoplasia (neoplasias of the pancreas and bile duct) (Dr. Fernández-Cruz)
T.21. Abdominal wall disorders (Dr. Fuster)
T.25. Jaundice. Concept of cholestasis (Dr. Rodés)
T.26. Portal hypertension (Drs. Bosch and Visa)
T.27. Ascites (Dr. V. Arroyo)
T.28. Hepatic encephalopathy (Dr. Terés)
T.30. Chronic viral hepatitis (Dr. Bruguera)
T.32. Severe acute hepatic insufficiency (Dr. Rimola)
T.33. Alcohol-induced hepatic disorders (Dr. Rodés)
T.34. Liver cirrhosis (Dr. Bruguera)
T.40. Cholelithiasis (Dr. Astudillo)
T.43. Liver transplant (Dr. Rimola)

SCHEDULED CLINICAL TEACHING

A. Seminars offered simultaneously to all students, alternating with theory classes
- Chronic inflammatory intestinal disease (Dr. Piqué)
- Intestinal polyposis and colorectal cancer (Dr. García Valdecasas)
- Pathological anatomy of digestive disorders (Dr. Bombí)
- Abdominal ultrasonography, tomography and magnetic resonance (Dr. Ayuso)
- Radiological treatment of digestive diseases (Dr. Montañá, Dr. Rovira and Dr. Bru)
- Influence of hepatic and gastrointestinal diseases on bioavailability and the intraorgan drug cycle. Undesirable drug effects on the liver and digestive apparatus (Dr. Forn)
- Influence of digestive diseases on drug bioavailability (Dr. Forn)
- Decision-making in gastroenterology (Dr. Granados)
- Digestive haemorrhage (Dr. Rimola)

B. Seminars run during the placement period, in the corresponding Service
- Oesophagitis (Dr. Grande)
- Acute abdomen (Dr. Fernández-Cruz)
• Viral hepatitis (Dr. Sánchez Tapias)
• Liver tumours (Dr. Visa)
• Extrahepatic cholestasis (Dr. Astudillo)
• Digestive endoscopy (Dr. Bordas)
• Surgical approaches. Laparoscopic surgery (Dr. Fuster)

INDEPENDENT LEARNING
T. 02. Motor disorders of the oesophagus
T. 06. Functional disorders of the digestive apparatus
T. 09. Vascular disorders of the intestine
T. 13. Colonic diverticular disease
T. 15. Non-endocrine intestinal neoplasias
T. 16. Anorectal disorders
T. 20. Endocrine tumours of the intestinal tract and pancreas
T. 22. Diseases of the peritoneum and mesentery
T. 24. Abdominal trauma
T. 35. Hepatic disease of probable autoimmune origin
T. 36. Inherited hepatic disorders
T. 38. Vascular liver disorders
T. 39. Specific liver infections
T. 42. Bile duct malformations and non-parasitic liver cysts