MEDICINE AND SURGERY

Course: **Patient management**
Year: **5th**
Period: **Annual**
Credits: **16 credits**

Objectives

Knowledge and understanding

By the end of the course student will know the diseases associated with the most relevant symptoms, their pathogenesis, the appropriate diagnostic flowchart to distinguish different diseases, and the basic principles of therapy according to the final diagnosis.

Knowledge acquired during this course is essential to reach an overview of medical sciences and to perform differential diagnosis among diseases. This exam is propaedeutic to the beginning of the professional activity as Medical Doctor.

Application of knowledge and understanding

By the end of the course student will be able to:
- Identify and clinically evaluate the different diseases commonest signs & symptoms
- Choose the most appropriate diagnostic approach to perform differential diagnosis
- Formulate diagnostic hypotheses by an appropriate use and evaluation of clinical data, imaging findings and laboratory tests
- Propose the most appropriate therapeutic approach

Making judgements; Communication skills; Learning skills

By the end of the course students:
• will develop abilities to communicate and work in team
• will acquire learning skills such as the capability to organize knowledge, revise and retain information, select information, choose among different option and critically review their clinical reasoning

Prerequisites

To be allowed to attend the Patient Management exam, students must have successfully passed the exams of:

BIOSTATISTICS
SYSTEM DISEASES 1, 2 AND 3
CLINICAL IMMUNOLOGY AND DERMATOLOGY
INFECTIOUS DISEASES
BONE AND JOINT DISEASES
CLINICAL NEUROSCIENCE
PATHOLOGY
NEUROPHARMACOLOGY
ONCOLOGY

CONTENTS

YEAR/SEMESTER: *5TH YEAR-1ST SEMESTER*

Introduction to Patient Management: course presentation, syllabus, assessment

During this lecture the students will receive explanations about the course organization, the items and issues that will be addressed, the principles of the teaching techniques and the final evaluation test

Fever of unknown origin

Learning outcomes

After this lecture, the students should:
- Know the mechanism of fever
- Know the algorithm for management of fever of unknown origin (FUO)

After this lecture, the students should be able to:
- Perform differential diagnosis focusing on:
- Infective diseases related FUO (abscesses or osteomyelitis due to pyogenic organisms; systemic infections in particular endocarditis, brucellosis; granulomatous infections; viral infections, in particular CMV, HIV; protozoan infections; spirochetosis)
- Immunological disorders related FUO (connective tissue diseases; vasculitis)
- Hematological/ malignances related FUO
- Identify the most appropriate tests to formulate a correct diagnosis
- Plan the right treatment

Introduction to pain (Part 1)

Learning outcomes

After this lecture, the students should:
- Know the anatomical pathways of pain
- Know the physiological aspects of pain
- Know the difference between nociceptive versus neuropathic pain
- Know the WHO analgesic ladder
- Know the Pharmacologic approach to nociceptive pain
- Know the visceral pain syndromes
- Understand characteristics pain and phantom sensation after limb amputation

After this lecture, the students should be able to:
- Differentiate between nociceptive and neuropathic pain

- Differentiate between acute pain syndromes and chronic pain syndromes
- Identify visceral pain syndromes
- Diagnose pain and phantom sensation after limb amputation

Introduction to pain (Part 2)

Learning outcomes

After this lecture, the students should:
- Know pain relievers: families and mechanisms of action
- Know nociceptive versus neuropathic pain: different drugs

After this lecture, the students should be able to:
- Choose the most appropriate pain reliever according in different clinical scenarios

Choosing wisely: best practice in diagnostic imaging

Learning outcomes

After this lecture, the students should:
- Know different imaging modalities, their pro and cons
- Know how to assess the diagnostic performances of different imaging modalities

After this lecture, the students should be able to:
- Choose the best practice in diagnostic imaging

Chest pain (Part 1)

Learning outcomes

After this lecture, the students should:
- Know the mechanism of chest pain
- Know the different potential causes of chest pain (cardiovascular, respiratory, vascular, gastrointestinal and thoracic wall)

After this lecture, the students should be able to:
- Perform differential diagnosis of chest pain focusing on:
  - Cardiovascular causes of chest pain (coronary heart disease; aortic dissection; pericarditis, myocarditis; valvular heart disease; stress-induced cardiomyopathy; cardiac syndrome X)
  - Respiratory causes of chest pain (acute pulmonary thromboembolism/pulmonary hypertension and cor pulmonale; pneumonia, sarcoidosis, cancer; pleural effusion/pleuritis/serositis; pneumothorax)
  - Vascular causes of chest pain (aortic dissection and rupture)

- Gastrointestinal causes of chest pain (gastroesophageal reflux disease; esophageal achalasia/ hyperalgesia; esophageal rupture, mediastinitis, and foreign bodies; medication-induced esophagitis; radiating or referred visceral pain)
- Thoracic wall causes of pain (musculoskeletal pain associated with rheumatic and non-rheumatic diseases; skin and sensory nerves: i.e., herpes zoster, post-herpetic and post-radiation neuralgia)
- Decide the most appropriate treatment

Chest pain (part 2)

Learning outcomes

After this lecture, the students should:
- Know the available tests and imaging modalities to reach a diagnosis in patients with chest pain
- Understand the clinical priorities of differential diagnosis in patients with chest pain
- Know the most appropriate imaging modalities to formulate a diagnosis and their pro and cons according to different clinical scenarios

After this lecture, the students should be able to:
- Decide the most appropriate diagnostic test according to the clinical presentation
- Decide the most appropriate treatment

Chest pain (part 3) - Group work activities (Clinical cases)

Learning outcomes

The purpose of these activities is to activate and solidify knowledge acquired during lectures and independent study, in a collaborative learning setting.

After this activity, the students should be able to:
- Perform differential diagnosis of chest pain
- Decide the most appropriate treatment

Focal lesions - Breast / Thyroid

Learning outcomes

After this lecture, the students should:
- Know the commonest focal lesions of the breast and thyroid
- Know main signs and symptoms associated with those focal lesions
- Know the principles of the surgical and non-surgical treatments of these focal lesions

After this lecture, the students should be able to:
- Identify the main signs and symptoms associated with those focal lesions
- Approach a patient with new focal lesions of the breast and thyroid

- Focus the physical examination according with these focal lesions
- Perform differential diagnosis of focal lesions
- Define the proper diagnostic and therapeutic strategy

Focal lesions - Liver / Pancreas

Learning outcomes

After this lecture, the students should:
- Know the commonest focal lesions of the liver and pancreas
- Know main signs and symptoms associated with those focal lesions
- Know the principles of the surgical and non-surgical treatments of these focal lesions

After this lecture, the students should be able to:
- Identify the main signs and symptoms associated with those focal lesions
- Approach a patient with new focal lesions of the liver and pancreas
- Focus the physical examination according with these focal lesions
- Perform differential diagnosis of focal lesions
- Define the proper diagnostic and therapeutic strategy

Focal lesions - Lung

Learning outcomes

After this lecture, the students should:
- Know the commonest focal lesions of the lung
- Know main signs and symptoms associated with those focal lesions
- Know the principles of the surgical and non-surgical treatments of these focal lesions

After this lecture, the students should be able to:
- Identify the main signs and symptoms associated with those focal lesions
- Approach a patient with new focal lesions of the lung
- Focus the physical examination according with these focal lesions
- Perform differential diagnosis of focal lesions
- Define the proper diagnostic and therapeutic strategy

Focal lesions - Kidney / Prostate

Learning outcomes

After this lecture, the students should:
- Know the commonest focal lesions of the kidney and prostate
- Know main signs and symptoms associated with those focal lesions
- Know the principles of the surgical and non-surgical treatments of these focal lesions

After this lecture, the students should be able to:
- Identify the main signs and symptoms associated with those focal lesions
- Approach a patient with new focal lesions of the kidney and prostate
- Focus the physical examination according with these focal lesions
- Perform differential diagnosis of focal lesions
- Define the proper diagnostic and therapeutic strategy

Dyspnea

Learning outcomes

After this lecture, the students should:
- Know the mechanism and the commonest causes of dyspnea
- Know the most appropriate tests to formulate a correct diagnosis

After this lecture, the students should be able to:
- Perform differential diagnosis focusing on:
– Respiratory system causes of dyspnea (airways, chest wall and lung diseases)
– Cardiovascular causes of dyspnea (left ventricle, pulmonary vasculature, pericardium diseases)
– Dyspnea responsive of surgical treatment (spontaneous pneumothorax, cancer and exstrinsic compression of the airways)
- Choose the most appropriate tests to formulate a correct diagnosis
- Plan the most adequate treatment

Hemoptysis

Learning outcomes

After this lecture, the students should:
- Know the definition of hemoptysis
- Know the mechanism and the commonest causes of hemoptysis
- Know principles of differential diagnosis in patients with hemoptysis: signs & symptoms, laboratory tests and investigations

After this lecture, the students should be able to:
- Perform differential diagnosis
- Choose the most appropriate tests to formulate a correct diagnosis
- Plan the most adequate treatment according to the hypothesized diagnosis

Purpura and Lymphadenopathy

Learning outcomes

After this lecture, the students should:
- Know the mechanisms and the commonest causes of purpura and lymphadenopathy

- Know the most appropriate tests to formulate a correct diagnosis

After this lecture, the students should be able to:
- Perform differential diagnosis of purpura focusing on:
  - Purpura as a primary cutaneous disorder (trauma, solar, steroid)
  - Purpura as a sign of systemic diseases (clotting disturbances, vascular fragility, disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, vasculitis, acute meningococcemia)
    - Non-Palpable (coagulopathies/platelets disorders)
    - Palpable (ANCA, IgA, Cryoglobulinemia, cutaneous vs systemic Polyarteritis nodosa, Sjogren)
- Perform differential diagnosis of lynphadenopathy focusing on:
  - Malignant diseases (hematologic and metastatic tumors to lymph nodes)
  - Infectious diseases (Viral, bacterial, fungal diseases)
  - Immunologic diseases (Rheumatoid Arthritis, Systemic Lupus Erythematosus, dermatomyositis)
  - Miscellaneous diseases (Sarcoidosis, Amyloidosis)
- Choose the most appropriate tests to formulate a correct diagnosis
- Plan the most adequate treatment according to the hypothesized diagnosis

Back pain (part 1 & 2)

Learning outcomes

After this lecture, the students should:
- Know the mechanism and the commonest causes of back pain
- Understand the role of working activity on back pain
- Understand the role of physical therapy
- Know the basis of the surgical approach to back pain

After this lecture, the students should be able to:
- Differentiate simple lower back pain versus life threatening forms of lower back pain
  In particular, focus on:
- Mechanical causes of back pain (injury to muscles, ligaments, bones, disks)
- Non-mechanical causes of back pain (spondyloarthropathy; spinal infection; osteoporosis; cancer; referred visceral pain)
- Severe causes of back pain: how to recognize red flags
- Identify the most appropriate tests to formulate a correct diagnosis
- Plan the correct treatment in relation to anti-inflammatory, surgical and physical therapies

Back pain (part 3) - Group work activities (Clinical cases)

Learning outcomes

The purpose of these activities is to activate and solidify knowledge acquired during lectures and independent study, in a collaborative learning setting.

After this activity, the students should be able to:
- Perform differential diagnosis of back pain
- Decide the most appropriate treatment

Altered mental status

Learning outcomes

After this lecture, the students should:
- Know the mechanism and the commonest causes of altered mental status (alterations of awareness/arousal)
- Know the most appropriate tests to formulate a correct diagnosis

After this lecture, the students should be able to:
- Perform differential diagnosis focusing on:
- alterations of mental status due to medical conditions (drugs and toxins; sepsis/systemic infections; fever-related delirium; systemic organ failure/physical disorders, i.e. burns)
- alterations of mental status due to endocrinological disorders (metabolic derangements i.e. electrolyte disturbance, hyperglycemia and hypoglycemia, nutritional; hypothyroidism)
- Alterations of mental status due to neurological disorders (stroke; cancer; non-convulsive status epilepticus; CNS infection; neurodegenerative disorders)
- Choose the most appropriate tests to formulate a correct diagnosis
- Plan the most adequate treatment according to the hypothesized diagnosis

Peripheral Pain

Learning outcomes

After this lecture, the students should:
- Know the vascular causes of peripheral pain
- Know the muscle and joint causes of pain
- Know causes and characteristics of peripheral neuropathy

After this lecture, the students should be able to:
- Perform differential diagnosis
- Choose the most appropriate tests to formulate a correct diagnosis
- Plan the most adequate treatment according to the hypothesized diagnosis

Transient loss of consciousness

Learning outcomes

After this lecture, the students should:
- Know the epidemiology, the main causes and prognosis of the transient loss of consciousness

After this lecture, the students should be able to:
- Recognize the syncopal origin of transient loss of consciousness
- Perform the clinical evaluation of patient with a transient loss a transient loss of consciousness
- Distinguish syncope from epilepsy
- Rule-out the cardiac origin of syncope
- Stratify the clinical risk of patient with syncope in Emergency Department: the role of prognostic scores and clinical judgment
- Manage patient with syncope after the first evaluation in Emergency Department
- Assess the reflex cause of syncope
- Recognize the dysautonomic causes of syncope: orthostatic hypotension
- Recognize pseudosyncope or psychogenic causes of transient loss of consciousness
- Evaluate the cardiovascular autonomic profile: the tests of cardiovascular autonomic functioning (Synus Arrhytmia, Valsalva Maneuver, Sinus Carotid Massage, Head-up Tilt-test).
- Make a global risk stratification on patient with syncope including working and driving activities: Why address the issue of returning to work and to driving after syncope? Who should be involved in the patient's management? How can the risk stratification be designed to adequately support patients and society?
- Decide the most appropriate tests to formulate a correct diagnosis

YEAR/SEMESTER: *5TH YEAR-2^{NDT} SEMESTER*

Diarrhea and constipation

Learning outcomes

After this lecture, the students should:
- Understand small and large intestine function
- Understand inflammatory, osmotic, secretory and bowel motility causes of diarrhea
- Know the commonest causes of constipation
- Know the Clostridium Difficilis-related diarrhea
- Know critical implications of acute diarrhea

After this lecture, the students should be able to:
- Perform differential diagnosis in patients with diarrhea and in those with constipation
- Choose the most appropriate tests to formulate a correct diagnosis
- Plan the most adequate treatment according to the hypothesized diagnosis

Abdominal pain

Learning outcomes

After this lecture, the students should:

- Know the main signs and symptoms associated with abdominal pain
- Understand the basic principles of the assessment of patient with abdominal pain
- Know the most frequent non-surgical causes of abdominal pain
- Know the most frequent surgical, gynecological, and vascular causes of abdominal pain
- Know the basic principles of the surgical approach to abdominal pain

After this lecture, the students should be able to:
- Perform physical examination of the abdomen
- Perform differential diagnosis in patients with abdominal pain
- Choose the most appropriate investigations to formulate a correct diagnosis
- Plan the most adequate treatment according to the hypothesized diagnosis

Weight loss

Learning outcomes

After this lecture, the students should:
- Know the commonest causes of weight loss including malignancies, gastrointestinal, infective and psychiatric causes

After this lecture, the students should be able to:
- Perform clinical assessment of unintentional weight loss
- Perform differential diagnosis in patients with weight loss
- Identify the most appropriate investigations to formulate a correct diagnosis
- Plan the appropriate treatment

Dysphagia

Learning outcomes

After this lecture, the students should:
- Know the definition of dysphagia (oropharyngeal and esophageal)
- Understand pathophysiology of dysphagia
- Know the commonest and the most relevant causes of dysphagia
- Know the basis of surgical approach to benign esophageal lesions and to esophageal cancer (including staging)

After this lecture, the students should be able to:
- Perform differential diagnosis in patients with dysphagia
- Identify the most appropriate investigations to formulate a correct diagnosis
- Plan the appropriate treatment according to the hypothesized diagnosis

Edema

Learning outcomes

After this lecture, the students should:
- Understand pathophysiology of edema

- Know the commonest and the most relevant causes of edema

After this lecture, the students should be able to:
- Perform differential diagnosis in patients with edema
- Identify the most appropriate investigations to formulate a correct diagnosis
- Plan the appropriate treatment according to the hypothesized diagnosis

Overweight and obesity

Learning outcomes

After this lecture, the students should:
- Know the definition of overweight and obesity
- Know the epidemiology of obesity over time
- Know the social risk factors and disease implications
- Understand obesity as a major risk factor for cardiovascular, respiratory, metabolic and neoplastic diseases
- Know basic principles of bariatric surgery: indications, types of procedure and their different mechanisms of action, results and complications
- Know life style and behavior modifications as initial treatment for overweight and obesity

After this lecture, the students should be able to:
- Perform a proper clinical evaluation of overweight and obesity
- Identify the most appropriate investigations to perform
- Plan the appropriate treatment, including dietary and drug treatments

Jaundice

Learning outcomes

After this lecture, the students should:
- Know the anatomy of the liver and of the biliary tract
- Understand liver physiology
- Know the commonest causes of jaundice
- Understand the difference between conjugated and unconjugated hyperbilirubinemia
- Know endoscopic and radiological procedures to solve obstructive jaundice
- Know the basis of surgical approach to obstructive jaundices due to hepatic, biliary, and pancreatic tumors

After this lecture, the students should be able to:
- Assess of liver function
- Perform differential diagnosis in patients with jaundice
- Identify the most appropriate investigations to formulate a correct diagnosis
- Plan the appropriate treatment according to the hypothesized diagnosis

Nausea and vomiting

Learning outcomes

After this lecture, the students should:
- Know the upper Gastrointestinal function and its neural regulation
- Understand the mechanisms of vomiting
- Know the commonest causes of nausea and vomiting

After this lecture, the students should be able to:
- Perform differential diagnosis in patients with nausea and vomiting
- Identify the most appropriate investigations to formulate a correct diagnosis
- Plan the appropriate treatment according to the hypothesized diagnosis

Pelvic and perineal pain

Learning outcomes

After this lecture, the students should:
- Know the pelvic and perineal anatomy
- Understand pathophysiology of pelvic and perineal pain
- Know the commonest surgical (including proctologic), gastroenterological, and urologic causes of pelvic/perineal pain
- Know the principles of the surgical approach to pelvic/perineal disorders

After this lecture, the students should be able to:

- Perform physical examination of the pelvis and perineum
- Perform general assessment of the pelvic and perineal pain
- Perform differential diagnosis in patients with pelvic and perineal pain
- Identify the most appropriate investigations to formulate a correct diagnosis
- Plan the appropriate treatment according to the hypothesized diagnosis

Upper and lower gastrointestinal bleeding

Learning outcomes

After this lecture, the students should:
- Understand bleeding manifestations
- Know the most frequent causes of upper and lower gastrointestinal bleeding
- Know endoscopic and radiological procedures for treatment
- Understand the surgical approach to gastrointestinal bleeding

After this lecture, the students should be able to:

- Evaluate a patient with gastrointestinal bleeding: severity of bleeding, hemodynamically stable vs. unstable patients, potential sources of bleeding, clinical priorities and upfront treatment.
- Perform differential diagnosis in patients with upper and lower gastrointestinal bleeding
- Identify the most appropriate investigations to formulate a correct diagnosis
- Plan the appropriate treatment

Discussion of clinical cases

Learning outcomes

After this lecture, the students should be able to:
- Identify the priority presenting problem
- Evaluate clinical conditions of the patient
- Perform a differential diagnosis
- Identify the most appropriate investigations to reach a final diagnosis
- Plan the appropriate treatment

Teaching Methods

Lectures

The main purpose of lectures is to transfer knowledge to students by guiding them through the most relevant subjects of the disciplines included in the course of Patient Management.

For each topic, a multidisciplinary approach will be adopted. Professors of the main disciplines having an active role in diagnosis and treatment of symptom-related diseases will give separate lectures. One professor will coordinate lectures and provide a conclusive overview about the topic. Students are expected to participate to lectures in a proactive manner and to take notes as part of the learning process.

All lectures will be held synchronously, either in presence or using Teams.

Group work activities/activation of knowledge

The purpose of these activities is to activate and solidify knowledge acquired during lectures and independent study, in a collaborative learning setting.

For these activities, students will be divided in groups.

Participation is mandatory. Student that cannot be on Campus for reasons related to the pandemics will participate on-line by Teams

Attendance

To access the final exam, the students must attend ≥75% of the lectures and group work activities

Verification of learning

Assessment of learning will take place through an exam having the following parts:

- <u>Written part</u>: The analysis of one chest X-ray and one ECG. Chest X-ray and ECG will be provided by the examiners. Students will have 30' to write a detailed medical report including main findings and diagnosis. After conclusion of the written part, all students will be admitted to the oral part (the same day).

- <u>Oral part I</u>: Examiners will evaluate the medical report provided for the chest X-ray and ECG. They will ask the student to comment on main findings and proposed diagnosis.

- <u>Oral part II</u>: Discussion of some clinical cases (at least one proposed by Internal Medicine professor and one by General Surgery professor). For each clinical case, the student will receive a concise description of clinical scenario. According to the main presenting symptoms the student must set diagnostic hypotheses, possible flowcharts, make a differential diagnosis. Interpretation of clinical data, radiological findings and laboratory test is required. Finally, students must plan a therapeutic approach and know the most important side effects of any mentioned drug.

Texts

Jameson, et. al.
Harrison's Principles of Internal Medicine, 20th Edition
Publisher: McGraw-Hill
Publish Year: 2018

Goldman, Schafer et al.
Goldman-Cecil Medicine, 26th Edition
Publisher: Elsevier
Publish Year: 2019

Townsend, et al.
Sabiston Textbook of Surgery, 20th Edition
Publisher: Elsevier
Publish Year: 2016

Online resource

UpToDate
https://www.uptodate.com