UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Integrated Medical and Surgical Pathology 1

2021-3-H4101D257

Aims

Patient’s history taking, with focus on cardiovascular and respiratory problems, Diagnostic assessment with critical data interpretation, Physical examination, Main clinical signs and symptoms. Knowledge of normal ranges of the main diagnostic tests for the cardiovascular and respiratory systems.

Contents

Collection and interpretation of patients’ medical history, main signs and symptoms of cardiovascular and respiratory diseases. To provide the tools for the correct use of biochemical tests, and the definition of their indications and interpretation. Information on how to perform correctly a physical examination with particular regards to venous and arterial vessels, as well as to cardiovascular and respiratory systems.

Detailed program

CLINICAL METHODOLOGY A-B

The medical history

- Techniques of history taking
- Evaluation of patient’s clinical data and files
- How to interview a patient
- Doctor-Patient interaction, physician’s attitude and behaviour
- The role of the family history
- Physiological and pathological history

General physical examination

- Head and neck
- Chest
- Abdomen

Diagnostic tests in Cardiology

- Electrocardiography (EKG), 24 hours EKG Holter recording
- Echocardiography
- Exercise Stress Testing
- Cardiac nuclear imaging
- Computed Tomography and Magnetic Resonance of the Heart
- Coronary Angiography

Systemic Hypertension (primitive and secondary forms):

- Clinical management
- Interpretation of diagnostic tests
- Therapy

Chest Pain

- Approach to the patient with chest pain, differential diagnosis and diagnostic tests

Congenital Heart Diseases

- Physiological and hemodynamic aspects of structural changes in the muscle and heart valves

Semeiotics of pain

- Somatic pain and visceral pain

- Chest, abdominal, radicular pain and headache

Pericardial, endocardial and myocardial diseases

- Pathophysiological mechanisms of pericarditis, endocarditis and myocarditis

- Signs and symptoms of the disease, its evolution and worsening

- Clinical management based on current international guidelines

- Follow-up and interpretation of instrumental and laboratory examinations

Ischemic heart disease

- Stable and unstable angina

- Myocardial infarction

- Pathogenetic mechanisms

Signs and symptoms of the disease, its evolution and aggravation

- Acute and chronic patient management

- Planning and interpretation of instrumental and laboratory examinations

Pulmonary embolism

- Pathophysiology

- Main etiological factors

- Clinical presentation

- Diagnostic process and follow-up

Pulmonary hypertension

- Pathophysiology

- Main etiological factors

- Clinical presentation

- Diagnostic process and follow-up

CARDIOLOGY A-B-C

Etio-pathological interpretation of the following symptoms and signs:

- dyspnoea, cough, haemoptysis, cyanosis, oedema, vertigo, vomit, diarrhoea

- Pathophysiology of fever

- Pathophysiology and semeiotics of loss of consciousness

Rationale for the correct prescription of instrumental tests

Measurement of blood pressure

- Measurement techniques.

Epidemiology, cardiovascular risk factors and prevention.

Physical examination of the Heart and Circulation

Valvular Heart Disease

- Congenital and acquired valvular heart diseases
- Physiopathological mechanisms
- Signs and symptoms of the disease and its evolution
- Follow-up and interpretation of diagnostic tests

Heart Rhythm Disorders

- Hypokinetic arrhythmias

- Hyperkinetic arrhythmias

- Genesis of cardiac arrhythmias

- Indications for cardiac pacemakers and cardioverter-defibrillators

Heart Failure

- Pathophysiological mechanisms and aetiology of heart failure

- Symptoms and signs: from development to disease progression

- Acute Pulmonary edema

- NYHA Classification

- Planning and interpretation of laboratory and instrumental examinations

- Management of Patients with acute and chronic heart failure

Syncope and hypotension

- Pathophysiological mechanisms and diagnosis of the various forms of syncope

- Clinical management and follow-up

Shock

- Physiology and etio-pathogenesis of the various forms of shock

- Clinical presentation and management

VASCULAR SURGERY

- Atherosclerosis and vulnerable plaque: plaque rupture, embolization and thrombosis.

- Vascular objective examination. Arterial wrists.

- Carotid atherosclerosis, pathophysiology of the cerebro-afferent pathology, quantification of the degree of stenosis, evaluation of carotid plaque morphology, definition of symptomatic carotid stenosis.

- Subclavian theft syndrome. Arterial and venous thoracic strait syndrome (TOS).

- Chronic obliterative arteriopathy of the lower limbs. Leriche syndrome. Arterial ulcers.

- Organ hypoperfusion. Hypoxia, ischemia, necrosis. Acute obliterations of the limbs. Compartment syndromes. Damage from ischemia-reperfusion.

- Aortic aneurysmal pathology. Collagen. Rupture of aortic aneurysm.

- Arterial pathology of large non-atherosclerotic vessels.

- Post-caterpillar Pseudoaneurysm. Traumatic pseudoaneurysm and isthmic aortic rupture.

- Acute aortic syndromes. Aortic dissection, Stanford classification, organ complication. Aortic penetrating ulcer (PAU). Intramural hematoma (IMH).

- Venous thromboembolic disease: deep venous thrombosis and superficial thrombophlebitis. Venous ulcers.

- Differential diagnosis of pain in the lower limbs.

PNEUMOLOGY

- Anatomy, physiology and pathophysiology of the lung;

- basic knowledge of respiratory endoscopy, pulmonary function tests, imaging of the thorax, acute and chronic respiratory failure, including blood gas analysis interpretation;

- prevention and diagnosis of lung infections, including pneumonia and tuberculosis;

- chronic pulmonary diseases, including asthma, COPD, bronchiectasis and cystic fibrosis;

- pleural diseases, including pneumothorax, pleural effusion and pleural infections. Basic knowledge of pleural procedures and imaging;

- interstitial lung disorders, including sarcoidosis and idiopathic pulmonary fibrosis;

- epidemiology, diagnosis and staging of pleural and lung tumors;

- Principles of smoking cessation.

- Principles of palliation in chronic pulmonary diseases

- Evidence based medicine diagnostic guidelines of the main pulmonary pathologies

SCIENCES AND TECHNIQUES OF LABORATORY MEDICINE and CLINICAL PATHOLOGY

- The concept of evidence-

based laboratory medicine (EBLM): diagnostic appropriateness

- The test request. Peanalytic, analytical and post-analytical variability.

- Interpretation of laboratory results: reference values, critical difference and decision-making process; sensitivity, specificity and predictive value of the test.

- The concept of marker, function markers, injury markers.

- Tumor markers

- Biochemical tests for cardiovascular risk, for the diagnosis of myocardial damage and heart failure

- Test for the evaluation of coagulation. Bleeding and thrombosis. Monitoring of therapy

- Diagnosis of immunopathologies. Immunodeficiencies. The laboratory in allergic diseases.

- Laboratory evaluation of inflammatory states.

Prerequisites

Propaedeutic skills.

Teaching form

Lectures and exercises

In the Covid-19 emergency period, lessons will be held remotely asynchronously with synchronous videoconferencing events

Textbook and teaching resource

Harrison's: "Principles of Internal Medicine" Ed. McGraw Hill

For further insight

HURST- The Heart 12th Ed. McGraw Hill

Dioguardi – Sanna: Moderni aspetti di semeiotica medica - Segni sintomi e malattie Ed.Seu

Sabiston: “Textbook of surgery” Ed. Saunders

Zanussi: “Il metodo in medicina clinica” Ed. Mattioli

McPherson RA, Pincus MR Henry's Clinical Diagnosis and Management by Laboratory Methods, 23a English edition. Ed. Elsevier, 2016

Federici G. Medicina di laboratorio ed McGraw-Hill. IV ed., 2014

Marshall W, Lapsley M., Day A Clinical chemistry ed Mosby. 8a ed. Ed. Elsevier, 2016

Semester

First Semester

Assessment method

Written and oral test. Multiple choice test comprising 30 questions with only one correct answer (among 5) aimed at evaluating global comprehension of course program. Each correct answer is scored 1.

In consideration of the COVID emergency period, the oral exams will only be telematic. They will be carried out using the WebEx platform.

Office hours

by appointment by mail