



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

General Pathology

2021-1-I0101D005-I0101D017M

Aims

Know the basic mechanisms of the onset of disease and the means of defense. Understand the meaning of the laboratory tests and their clinical relevance. Acquire the basics of pharmacology. Acquire the basics of microbiology.

Contents

Know the underlying causes and pathogenic mechanisms of human diseases, as well as the etiology of the fundamental alteration of the structures, functions and control mechanisms at different levels of integration and acquire the basic knowledge to understand and deal with functional alteration. Control the appropriate terminology to interact with lecturers and, in perspective, with the multidisciplinary team and with patients to meet their health needs. Use the acquired skills to facilitate the development of additional advancement in clinical disciplines.

Detailed program

Concept of disease (acquired, congenital hereditary); areas of general pathology (etiology, pathogenesis). Chronic-degenerative and acute diseases. Immunology. Organs, B and T cells, antibodies. Concept of self and non-self. Complement. Immune reaction, primary and secondary. Hypersensitivity type I, II, III, IV. Etiology. Ionizing and exciting radiations as etiological agents. Diseases from radiation and from high temperatures. Burns, characteristics and pathogenic mechanisms. Freezing. Inflammation. Definition of acute inflammations, vascular phenomena in exudate development. The cells involved in inflammation acute, diapedesis, chemotaxis, phagocytosis, differences between exudate and transudate. Classification of exudates, evolution and complications of acute inflammation. Chronic interstitial inflammation and granulomatous. Cells involved in chronic inflammation. Formation and structure of the granuloma. Examples of granulomatous inflammation (TBC, Lue, silicosis, foreign body). Evolution of the granuloma. Systemic manifestations of inflammation: fever, leukocytosis, acute phase

proteins. Repair processes. Wound healing. Regeneration, repair, organization. Granulation tissue and its evolution. Scar tissue. Healing by first and secondary intention. Factors conditioning healing. Complications in wound healing. Fibrosis. Chronic degenerative diseases. Definition of atherosclerosis. Vessels affected by atherosclerosis. Structure of the altered arterial walls. Plaques distribution in the arterial tree. Etiology of atheromatous plaque and complications. Thrombosis, embolism. Functional adaptation. Hypertrophy, hyperplasia, homeostasis, balance and functional failure, organ failure, multiple organ failure and system failure. Growth disease. Pre-neoplastic lesions. Tumors: definition, classification (benign, malignant), nomenclature, malignant cancer features, atypia, TNM. Tumors etiology: chemical, physical and viral (general concepts). Genes involved in neoplastic transformation (general concepts). Concepts of tumor growth and angiogenesis phenomenon. Tumor metastasis, metastatic stages of the process. Biology of cancer cachexia.

Prerequisites

Positive evaluation in Biomedical Sciences 1.

Teaching form

Lectures through presentations in electronic form of drawings and diagrams explaining concepts and functions of the organism. The lessons of some disciplines will be provided by teledidattica.

In the period of COVID-19 emergency the lessons will be online asynchronous and some events with synchronous videoconference

Textbook and teaching resource

Pontieri G.M. (2007) Patologia generale e Fisiopatologia generale per le professioni sanitarie, II ed., Padova, Piccin; Spector T.D. e Axford J.S. (2007) Introduzione alla Patologia generale, II ed., Milano, Casa Editrice Ambrosiana; Quaglino E., Cavallo F., Forni G. (2010) Le difese immunitarie, I ed., Padova, Piccin

Semester

1st Year, 2nd Semester

Assessment method

Written examination: 60 closed quiz with multiple choice answer and one open ended question. The 60 quiz are subdivided for different subjects: 20 for general pathology, 20 for pharmacology, 10 for clinical biochemistry, 10 for microbiology. The examination will be passed with 36 exact answers.

In the COVID-19 emergency the examination will be online with 6 open question that cover the 4 discipline of the course.

Office hours
