ETIOPATOGENESI DELLE MALATTIE (IDU124)

1. LANGUAGE

Italian

2. contenTS

Coordinator: Prof. MARINO MARIAPAOLA

Year Course: 1

Semester: II

UFC: 6

Modules and lecturers:

- PATHOLOGY (IDU10A) - 1 UFC - SSD MED/08 Prof. Francesco Federico
- INFECTIOUS DISEASES (IDU12A) - 1 UFC - SSD MED/17 Prof. Simona Di Giambenedetto
- GENERAL MICROBIOLOGY (IDU11A) - 2 UFC - SSD MED/07 Prof. Tiziana D'Inzeo
- GENERL PATHOLOGY (IDU09A) - 2 UFC - SSD MED/04 Prof. Mariapaola Marino

3. bibliography

Pontieri G.M. Elementi di Patologia generale e Fisiopatologia generale - Per i corsi di laurea in professioni sanitarie. Piccin Ed., IV Edizione, 2018.
Eudes Lanciotti. Principi di microbiologia clinica. Casa editrice Ambrosiana.
J.A. Regezi, J.J. Sciubba, R.C. Jordan. Patologia orale. Correlazioni clinico-patologiche. IV Edizione. Delfino Antonio Editore.
M. Moroni, R. Esposito, F. De Lalla. Malattie infettive. Elsevier Editore.

Support teaching material for topics not adequately addressed by the reference texts will be provided / pointed out during the lectures.

4. LEARNING OBJECTIVES

The modules of the Integrated Course *Etiopatogenesi delle malattie* aim to provide the student with:

- the pathophysiological knowledge that allows the understanding of the basic concepts of health and disease;
- knowledge on the main causes of pathological manifestations and on the biological mechanisms of degenerative, inflammatory, neoplastic and regenerative processes of tissues;
- knowledge of the main pathogenic microorganisms (bacteria, viruses and fungi) and their mechanisms of action, with particular reference to microorganisms present in the oral cavity;
- knowledge of the main histological diagnostic techniques and of the main preneoplastic and neoplastic lesions of the oral cavity and salivary glands.

• ***Knowledge and understanding (Dublin 1):*** at the end of the Integrated Course students will have to demonstrate that they have acquired knowledge of the causes of cellular and molecular damage, of the body's reaction mechanisms and of the underlying pathological processes that result from it. The student will also have to demonstrate knowledge of the mechanisms of action of the main microorganisms specifically involved in pathologies of the oral

cavity. Finally, they will have to demonstrate knowledge of the histo-pathological characteristics of the main non-neoplastic and neoplastic lesions that may be evident in the oral cavity and salivary glands.

- ***Applied knowledge and understanding (Dublin 2***): at the end of the Course the student will have to demonstrate that they are able to use the knowledge acquired to understand how the basic pathological processes can alter the functions of organs and systems and contribute to the development of a disease. They will also have to demonstrate that they are able to use the knowledge acquired to understand how the main microorganisms studied (bacteria, viruses, fungi) can induce pathologies in the oral cavity. They will also have to demonstrate that they can identify the presence of any pathological lesions in the oral cavity.
- ***Independent judgment (Dublin 3)***: at the end of the Course the student will have to demonstrate that they can integrate the knowledge and skills learned to identify major problems in relation to the area of professional interest.
- ***Communication skills (Dublin 4):*** at the end of the Course the student must be able to communicate the knowledge acquired about the causes and mechanisms involved in the development of pathological manifestations using adequate and precise scientific terminology, to be able to express the concepts clearly and knowing how to perform correctly and consistently in the field of professional interest.
- ***Ability to learn (Dublin 5):*** at the end of the Course the student must have acquired an independent study method, referring to several textbooks and / or to the supporting teaching material possibly provided by the teachers of the Integrated Course.

5. PREREQUISITES

Basic school education and knowledge of basic science subjects are required: mathematics, chemistry, physics, biology.
Knowledge of the subjects of the first semester is required.

6. TEACHING METHODS

Interactive lectures (knowledge and understanding)

7. OTHER INFORMATIONS

The teachers are available for group or individual interviews by appointment.

8. METHODS FOR VERIFYING LEARNING AND FOR EVALUATION

The score will be expressed out of thirty and the exam will not be passed with a grade lower than 18/30

Knowledge verification will take place in two ways:

written tests of *General microbiology* and *Infective diseases* (multiple choice test). The written tests include 30 questions for each test. to each correct answer is assigned a score equal to 1. To each incorrect or unanswered question is assigned a score equal to zero. The tests that present at least 18 correct answers (number corresponding to the vote 18/30) is considered to have been passed.

Oral exam of *General pathology* and *Pathology*. Students will be assessed by oral examination based on at least three questions for each module. To pass the exam, the student must fully satisfactorily answer at least one of the three questions.

Students who pass the exam will be evaluated with a grade from 18 to 30 cum laude based on the criteria indicated below.

<18: Exam failed. The student did not fully answer any of the questions.

18: Sufficient. The student answers the questions, but inadequately, with serious failings on all three questions.

21: More than enough. The student answers in a general way to most of the questions, but the exposition has several inaccuracies.
24: Good. The student answers all three questions well, even if, in some cases, exposition presents some oversights.
27: Very Good. The student answers all questions very comprehensively. Exposing him presents only one or two minor oversights.
30: Excellent. The student answers all questions comprehensively without any oversight or imperfection.
30 and honors: Extraordinary. The student answers all questions comprehensively, with distinction in the level of depth and competence without any oversight or imperfection.

The modulation of the questions allows to evaluate how much the student was able to understand (**Understanding skills - Dublin 1**), apply the knowledge and skills provided by the Course to the specific area of professional interest (**Applied understanding skills - Dublin 2**).

The final grade will be the result of the weighted average on the number of credits of the final grades obtained in the individual modules and is expressed out of thirty, with possible honors.

9. PROGRAM

Pathology
General elements of techniques for histological diagnosis. Diseases of the oral cavity: major examples of white, red, vesiculo-bullous, raised, ulcerated, pigmented lesions; caries. Diseases of the periodontium and gums. Benign tumors and preneoplastic lesions of the oral cavity. Carcinoma of the oral cavity. The development of the teeth and the main odontogenic tumors. Soft tissue tumors and oral melanoma. General information on salivary gland diseases.
Infectious diseases of the oral cavity. General information on infections and defense mechanisms against infections.

Infective diseases
Clinical and epidemiological characteristics of HIV disease, of hepatitis from viruses A, B, C, of infections with Herpes virus and Candida. Infections associated with health care. Infections caused by microorganisms resistant to antibiotic therapies.

General microbiology
General bacteriology: organization and structure of the bacterial cell, bacterial division, and growth, sporogenesis, metabolism and bacterial genetics, pathogenicity of bacteria.
Special bacteriology: microbial flora residing in the oral cavity, bacteria involved in the etiology of caries and periodontal diseases.
Principles of antibiotic therapy.
Fungi and protozoa: general characteristics.
Virology: general information on viruses, hepatitis viruses, HIV.
Principles of microbiological diagnostics.

General pathology
Introduction to general pathology. General concepts of health and disease.
General etiology: physical agents; chemicals; genetic basis of the disease.
Mechanisms of immune defense: innate and adaptative immune system; general principles of immune pathology.
Mechanisms of tissue damage: cell death (necrosis and apoptosis); adaptive responses (atrophy, hypertrophy, hyperplasia, metaplasia).
Reactive processes: acute inflammation; vascular reaction, cell migration, phagocytosis, chemical mediators of inflammation; functions, evolution, and types of exudates; outcomes of inflammation; systemic response to inflammation: etiopathogenesis of fever, acute phase proteins, leukocytosis;

chronic inflammation.
Alterations of differentiation: dysplasia.
Pathological neoplastic growth: benign and malignant tumors; classification; morphological and biological characteristics; metastasis; molecular basis of carcinogenesis; chemical, physical, and biological carcinogens.
Pathophysiology of blood: anemias: morphological and pathophysiological classification of the main forms of anemia.
Pathophysiology of the circulation: hemostasis, thrombosis, embolism, ischemia, infarction, atherosclerosis, hypertension, shock.
Pathophysiology of glucose metabolism: diabetes mellitus.