SUBJECT CARD

Faculty of Medicine and Health Sciences
Field of Studies: Medicine
Form of studies: Full-time course
Degree: long-cycle Master's programme
Specializations: No specialization
Academic year: 2022/2023

BASICS OF THE IMMUNE SYSTEM	
SUBJECT NAME	**The basic of immune system**
NUMBER OF ECTS POINTS:	4
LANGUAGE OF INSTRUCTION	English
TEACHER(S)	dr hab. Jolanta Kaszuba-Zwoińska dr Dagmara Jaworska
PERSON RESPONSIBLE	dr hab. Jolanta Kaszuba-Zwoińska
NUMBER OF HOURS	
LECTURES	45
CLASSES	3
SEMINARS	15
GENERAL OBJECTIVES	
OBJECTIVE 1	Knowledge of the basic elements of the human immune system, unspecific (innate) and specific (acquired) humoral and cellular immunity; immune system structure and functions, cells of immune system, antigens and immunoglobulins - types and structures, the major histocompatibility complex proteins system. Understanding the pathomechanisms of immune pathologies: hypersensitivities, autoimmunity and immune deficiencies, and their clinical manifestations.

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OBJECTIVE 2	Introduction to immunomodulation. Understanding the basics of tumor immunology and anticancer immune response. Cognition the forms and possible application of immunotherapy. Introduction to transplant immunology - transplant rejection mechanisms and graft versus host reaction (GvH). Knowledge of immunological techniques and their destination in diagnostics procedure.
LEARNING OUTCOMES	
MK1	Mentions and characterizes elements of the immune system, classifies types of immunity, characterizes immune response cells and knows their function in immune response. Knows the main cellular and humoral phenomena of the inflammatory response depending on the etiology and their regulatory mechanisms.
MK2	Describes the major histocompatibility complex protein - is able to list and characterize MHC class I, MHC class II and MHC class III proteins with distinguishing their functions. Knows the complement system, activities resulting from its activation for immune response and its participation in the pathogenesis of diseases.
MK3	Knows types of hypersensitivity reactions, types of immunodeficiency and basics of immunomodulation (immune tolerance, immune stimulation and immunosuppression). Describes cancer immunology. Presents forms and examples for application of immunotherapies. Lists the basic immunological techniques and knows their application for diagnostic process.
MC1	Student is active during classes, is able to cooperate in a group and elaborate and present prepared multimedia presentation.
INTRODUCTORY REQUIREMENTS	
[1] Knowledge of elementary terms of immunity (lymphocytes T and B, lymphatic system, monocytes/macrophages, neutrophils, eosinophils). [2] Knowledge of the main groups of pathogens (bacteria, viruses, fungi, parasites). [3] Knowledge of eukaryotic cell biology and biochemical cellular pathways.	
COURSE PROGRAM	**DETAILED DESCRIPTION OF THE TOPIC BLOCKS**
LECTURE 1	Immune system structure and components, immune competent cell characteristics – morphology and functions
LECTURE 2	Unspecific – innate - cellular immune response. Complement system.
LECTURE 3	Specific (adaptive) immune response. Structure and function of antibodies, isotypes of immunoglobulins. Characteristics of antigens. Monoclonal antibodies.

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LECTURE 4	Major Histocompatibility Complex (HLA) – structure and role in immune response.
LECTURE 5	Inflammation: cellular and humoral mechanisms and phenomena inflammatory response to different pathogens.
LECTURE 6	Regulatory mechanisms of inflammatory immune response, inflammatory mediators and their activities.
LECTURE 7	Primary and secondary immune deficiencies – mechanisms and clinical examples.
LECTURE 8	Hypersensitivity reactions, mechanisms, clinical manifestations and examples.
LECTURE 9	Autoimmune diseases, classification, pathomechanism, diagnostics and clinical manifestations.
LECTURE 10	Immunomodulation: immune tolerance and immune suppression mechanisms.
LECTURE 11	Immunology of tumor, tumor antigens, antitumor immune response.
LECTURE 12	Anti-infective immunity, vaccinates and immunotherapies.
LECTURE 13	Introduction to transplantology, transplant rejection mechanism and graft versus host reaction.
LECTURE 14	Immune techniques and its diagnostic usage.
LECTURE 15	Photo allergy and electromagnetic hypersensitivity – EHS.
SEMINAR 1	Introduction to the immune response.
SEMINAR 2	Immune response to viral infections.
SEMINAR 3	Immune response to bacterial and fungal infections.
SEMINAR 4	Immune response in parasitic infections.
SEMINAR 5	Regulatory mechanisms of immune response.
DIDACTIC METHODS (APPLIED)	
	Lectures Discussion Case study Multimedia presentation
STUDENTS WORKLOAD	

BASICS OF THE IMMUNE SYSTEM	
CONTACT HOURS WITH THE ACADEMIC TEACHER	60 hours
HOURS WITHOUT THE PARTICIPATION OF THE ACADEMIC TEACHER	Preparation for classes: 5 Preparation of report, presentation, medical history: 10 Preparation for the exam: 45
TOTAL NUMBER OF HOURS FOR THE COURSE	120
CONDITIONS FOR COURSE COMPLETION	
	Obligatory seminar attendance, seminar group changing strongly prohibited, student's initiative and activity during classes required, preparing selected topics for seminar to present twice during course; The absence has to be make up after establishing with teacher. Credit regulations - description of conditions for getting credit: 1. 100% attendance to seminars; 2. Final positive evaluation from both running teachers.
METHODS OF ASSESMENT	
IN TERMS OF KNOWLEDGE	Multiple-choice test with one proper answer
IN TERMS OF SKILLS	NA.
IN TERMS OF SOCIAL COMPETENCE	NA.
FORMATIVE	NA.
SUMMATIVE (I & II terms)	EXAM: np. Multiple-choice test with one proper answer - 50 questions RETAKE EXAM: oral form of exam, 5 open questions - arithmetic mean of partial grades of each answer
GRADING SCALE	
3,0 (Satisfactory)	**60-69%**
3,5 (Satisfactory plus)	**70-75%**
4,0 (Good)	**76-84%**
4,5 (Good plus)	**85-90%**
5,0 (Very Good)	**91-100%**
BASIC LITERATURE	
[1] **Immunology**. **8th** Edition. With STUDENT CONSULT Online Access. Editors: David **Male** Jonathan **Brostoff** David **Roth** Ivan **Roitt**.	

SUPPLEMENTARY LITERATURE

[1] https://www.ncbi.nlm.nih.gov/pubmed/
PubMed