

MINISTRY OF HEALTH OF UKRAINE
Kharkiv National Medical University

Department of Internal Medicine №2, Clinical Immunology and Allergology named after
academician L.T. Malaya

Academic year 2021-2022

SYLLABUS OF THE EDUCATIONAL COMPONENT
"Actual Issues of Clinical Immunology and Allergology"
(name of the educational component)

Optional educational component

Form of education full-time
(full-time; part-time; distance)

Field of knowledge 22 Health care
(code and name of the field of knowledge)

Specialty 222 Medicine
(code and name of the specialty)

Specialization (if available) medicine

Educational-professional program (educational-scientific program) EPP

Second (master's) level of higher education

Course 6

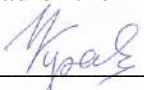
The syllabus of the educational component was approved
at the meeting of the Department of Internal Medicine
№2, Clinical Immunology and Allergology named after
academician L.T. Malaya

Approved by the methodical
commission of KhNMU on the
problems of professional training of
therapeutic profile

Protocol dated
August 27, 2021 № 28

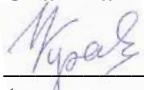
Protocol dated
August 31, 2021 № 1

Head of the Department



(signature) Professor Kravchun P.G.
(surname and initials)

Chairman



(signature) Professor Kravchun P.G.
(surname and initials)

Syllabus developers

Babadzhan Volodymyr Danylovych, Professor of the Department of Internal Medicine №2, Clinical Immunology and Allergology named after Academician LT Malaya, Kharkiv National Medical University, Doctor of Medical Sciences, Professor.

INFORMATION ABOUT TEACHERS TEACHING THE EDUCATIONAL COMPONENT

Surname, name, patronymic, position, academic title, scientific degree

Kravchun Pavlo Hryhorovych, Head of the Department of Internal Medicine № 2, Clinical Immunology and Allergology named after Academician LT Malaya, Kharkiv National Medical University, Doctor of Medical Sciences

Professional interests, link to the teacher 's profile (on the university website, department, in the Moodle system, etc. Theoretical and practical aspects of allergic diseases, molecular allergology.

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Consultations are held daily from 15⁰⁰ - 17⁰⁰, on Saturdays according to the schedule of the department and at the request of students and on the basis of the Department of Internal Medicine №2, Clinical Immunology and Allergology named after Academician LT Mala; are held by agreement with the lecturer in the Moodle or Zoom system

Location: Department of Internal Medicine №2, Clinical Immunology and Allergology named after Academician LT Malaya

Babajan Vladimir Danilovich, Professor of the Department of Internal Medicine №2, Clinical Immunology and Allergology named after Academician LT Small Kharkiv National Medical University, Doctor of Medical Sciences

Professional and interests, links to the teacher's profile (on the website of the university, department, in the Moodle system and more. Patomechanisms of allergy associated with IgE, molecular allergology, the main features of antigens and immune recognition of antigens, mechanisms of development, diagnosis and treatment of anaphylactic shock, urticaria, acute angioneurotic edema, allergic bronchial asthma, drug and food allergies; development of new methods of allergy diagnosis (ImmunoCAP, ISAC, ALEX) and therapy.

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Consultations are held daily from 15⁰⁰ - 17⁰⁰, on Saturdays according to the schedule of the department and at the request of students at the Department of Internal Medicine №2, clinical immunology and allergology. Academician LT Small; online consultations are held in agreement with the teacher in the system Moodle or Zoom.

Location: Department of Internal Medicine №2, Clinical Immunology and Allergology named after Academician LT Malaya

Krapivko Svitlana Oleksandrivna, Associate Professor of the Department of Internal Medicine №2, Clinical Immunology and Allergology named after Academician LT Malaya Kharkiv National Medical University, Candidate of Medical Sciences.

Professional interests, links to the teacher's profile (on the university website, department, in the Moodle system, etc. Allergen-specific diagnosis and allergen-specific immunotherapy of IgE-dependent allergy. Introduction of new methods of diagnosis and treatment of patients with anaphylactic shock, allergic bronchial allergy allergic rhinitis, urticaria, acute angioneurotic edema, drug and food allergies

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Consultations are held daily from 15⁰⁰ - 17⁰⁰, on Saturdays according to the schedule education and demanding applicants based on Department of internal Medicine №2, clinical Immunology and Allergology named after LT Malaya, online consultations conducted by agreement with the teacher in system Moodle or Zoom.

Locations: Department of internal Medicine №2, clinical Immunology and Allergology academician LT Malaya Time for classes: Monday, Tuesday, Wednesday, Thursday, Friday (8⁰⁰-12¹⁵/12²⁵-16⁴⁵ according to the schedule).

INTRODUCTION

The syllabus of the discipline "Actual Issues of Clinical Immunology and Allergology" is compiled in accordance with the educational-professional program (here in after - OPP) "222 Medicine" and the Standard of Higher Education of Ukraine (here in after - Standard), second (master's) level, field of knowledge 22 "Health" I", specialty "medicine".

Description (abstract) The elective course "Actual issues of clinical immunology and allergology" includes improving the understanding of the structure, laws and mechanisms of the immune system, knowledge of etiology, pathogenesis, clinical picture, methods of diagnosis and treatment of typical immunopathological processes (primary and secondary immunodeficiencies) and ability to diagnose the main clinical and laboratory syndromes of immunopathological, allergological processes, to determine the tactics of immunotherapy, to know the criteria for effective treatment. The course "Actual issues of clinical immunology and allergology" is designed to teach students 6 years of the second (master's) level of higher education.

Moodle page <http://distance.knmu.edu.ua/course/view.php?id=1690>

The subject of the elective course "Actual issues of clinical immunology and allergology" is to preserve public health by studying the body's immune system, its functioning normally and in pathology, methods of diagnosis and treatment of immune system disorders, immunodeficiencies, allergic diseases, immunological aspects.

Interdisciplinary links:

Prerequisites: pathological morphology, physiology and pathophysiology, microbiology, virology and immunology, internal medicine, pediatrics, surgery, obstetrics and gynecology.

Postrequisites: contributes to the study of students of clinical disciplines "Surgery" - including purulent inflammation, sepsis, "Internal Medicine with infectious diseases" - including inflammatory processes of different localization, rheumatic and autoimmune diseases, "Oncology" - including the diagnosis of hemoblastosis, down MCAT, "Obstetrics and Gynecology" - in particular the diagnosis and treatment of miscarriage, infertility, inflammation, tumors, "Emergency and emergency care" - in particular the diagnosis and treatment of anaphylactic shock.

1. PURPOSE AND TASKS OF THE COURSE

1.1. The purpose of the elective course "Topical issues of clinical immunology and allergology" is to deepen the knowledge, skills, abilities and other competencies in clinical immunology and allergology required in the professional activity of a doctor, which are established on the basis of educational and professional program.

1.2. The main objectives of the elective course "Current issues of clinical immunology and allergology" are to improve competencies in accordance with the general and professional competencies of the educational-professional program "Medicine" of the second (master's) level of higher education in 222 Medicine qualification Master of Medicine: 1) research, to determine immunological signs and to appoint differentiated treatment of immunological disorders (primary and secondary immunodeficiencies) and allergic diseases, to form dispensary groups, risk groups, to carry out immunoprophylaxis; 2) the ability to detect clinical and immunological signs of immune disorders in patients with acute, recurrent and chronic pathology, to establish a clinical diagnosis; 3) the ability to classify the symptoms and syndromes of immunological disorders; 4) the ability to make a differential diagnosis of hereditary and acquired immune disorders in various pathologies on the basis of immunological history, analysis of the family tree, data from clinical and laboratory examination of the patient; 5) the ability to make a plan of examination of the patient, to analyze the obtained research data taking into account the results of immunological examinations that can determine the state of immunity, its violation, signs of allergy, age, health, season; 6) maintaining medical records, the ability to apply knowledge in practical situations; 7) understanding of the subject area and professional activity, the ability to adapt and act in a new situation, making an informed decision, the ability to work in a team, to act socially responsibly and consciously.

1.3. Competences and learning outcomes, the formation of which is facilitated by the discipline “Actual Issues of Clinical Immunology”:

In accordance with the requirements of the standard, the discipline provides the acquisition of the applicant's **competencies**:

- *integral*: Ability to solve complex specialized problems and practical problems during professional activity in the field of clinical immunology and allergology and in the educational process, which involves the application of theoretical principles and immunological methods of laboratory diagnosis to comprehensively assess the immune status of the body, detection of sensitization to different species allergen components in patients; to establish the diagnosis and degree of immunological allergological disorders, to control the prescribed immunomodulatory therapy.

- *general*: 1. Ability to conduct research at the appropriate level. 2. Ability to apply knowledge in practical situations. 3. Knowledge and understanding of the subject area and understanding of professional activity. 4. Ability to adapt and act in a new situation. 5. Ability to make an informed decision; work in a team; interpersonal skills. 6. Ability to communicate in the state language both orally and in writing; ability to communicate in a foreign language. 7. Skills in the use of information and communication technologies. 8. Definiteness and persistence in relation to the set tasks and responsibilities. 9. The ability to act socially responsibly and consciously. 10. The desire to preserve the environment.

- *special (professional, subject)*: 1. Interpret the concept of "immunity", factors of innate and acquired immunity. 2. To draw conclusions about the state of functioning of the immune system according to laboratory tests. 3. Analyze changes in immune status, taking into account the patient's age, health status and season. 4. Explain the methods of immunological testing to determine the quantitative indicators of immunity. 5. Conduct surveys and physical examinations of patients with immune disorders. 6. To determine the etiological and pathogenetic factors of acquired immunodeficiency states. 7. To determine the features of the development of antiviral immune protection. 8. To determine the features of the development of antibacterial immune protection. 9. Interpret the data of leukograms and immunograms taking into account clinical data, stage of immune response, immunological history. 10. Conduct surveys and physical examinations of patients with congenital and acquired immunodeficiency. 11. To determine immunopathogenetic factors in the development of immune-dependent diseases (human immunodeficiency virus (HIV), herpes viral diseases; chlamydial infection; infectious mononucleosis, etc.). 12. To substantiate the use of basic immunodiagnostic methods used in clinical immunology, to determine the indications and contraindications for their implementation in patients with various immune-dependent diseases. 13. Conduct surveys and physical examinations of patients with allergic diseases. Determine the etiological (groups of allergens) and pathogenetic (types of immune reactions) factors of allergic diseases. 14. Explain the basics of allergological research methods (laboratory tests, skin tests, provocation tests, etc.). 15. To make the plan of inspection of patients with allergic diseases, to substantiate application of the basic diagnostic methods applied in allergology, to define indications and contraindications for their carrying out, possible complications. 16. Identify different variants of the course and complications of allergic diseases. 17. Carry out a differential diagnosis, justify and formulate a diagnosis of major allergic syndromes based on the analysis of laboratory and instrumental examination. Carry out differential diagnosis between allergic and pseudoallergic diseases. 18. Prescribe antiallergic therapy, evaluate its effectiveness. Determine the prognosis, carry out primary and secondary prevention of allergic diseases. Ability to market medical services.

1.3.2. The study of the discipline ensures the acquisition by students of the following program learning outcomes (PLO):

PLO 1 - acquisition of general and special fundamental and professionally-oriented knowledge, skills, abilities, competencies necessary to perform typical professional tasks related to its activities in the medical field in the relevant position.

PLO 2 - knowledge of psychophysiological features of man, human health, health support,

disease prevention, human treatment, public health.

PLO 3 - the ability to apply the acquired knowledge, skills and understanding to solve typical problems of the doctor, the scope of which is provided by lists of syndromes and symptoms, diseases, emergencies, laboratory and instrumental studies, medical manipulations.

PLO 4 - collection of patient information.

PLO 5 - evaluation of survey results, physical examination, laboratory and instrumental research data.

PLO 6 - establishing a preliminary clinical diagnosis of the disease.

PLO 7 - determination of the nature, principles of treatment of diseases.

PLO 8 - determination of the necessary diet, mode of work and rest in the treatment of diseases.

PLO 9 - determination of tactics of contingent contingent of persons subject to dispensary supervision.

PLO 10 - diagnosing emergencies, determining the tactics of emergency medical care.

PLO 11 - carrying out sanitary and hygienic and preventive measures.

PLO 15 - performance of medical manipulations.

PLO N 16 - assessment of the impact of the environment on the health of the population.

PLO 17 - maintaining medical records, processing of state, social and medical information.

PLO 18 - the ability to assess the state of human health and provide its support taking into account the impact of the environment and other health factors.

PLO 20 - the ability to apply the acquired knowledge about the existing health care system to optimize their own professional activities and participate in solving practical problems of the industry.

PLO 21 - the formation of a specialist with appropriate personal qualities, who adheres to the code of ethics of the doctor.

1.3.3. The study of the discipline ensures the acquisition of education by students the following **social skills (Soft skills)**: skills of critical thinking, problem solving, public speaking, business communication, teamwork, digital communication, organization of activities, which are also influenced by the level of leadership, knowledge of work ethics, discipline, sense of responsibility, compassion man.

2. VOLUME OF INFORMATION

Name of indicators	Area of knowledge, specialty, degree of education, OPP	Feature discipline
		full-time education
Credits - 4	Area of knowledge 22 "Health Care" (code name)	Regulatory
Total hours - 120	Specialty: 222 "Medicine" (code and title)	Year of preparation:
		6th
		Semester
Hours for full-time study: classroom - 20 independent work student - 100	Educational degree: Master of OPP 222 Medicine	Practical classes
		20 hours.
		Independent work
		100 hours
		Type of control: credit

2.1 Description of the discipline

2.1.2 Practical classes

№ o/n	Title of the topic	Number of hours	Methods of teaching	Forms of control
1	Tasks of clinical immunology and allergology. Structure and functions of the immune system. Immune cells and their cooperation. The concept of immunogram. Indicators of a normal immunogram.	2	Narrative-explanation, demonstration, presentation, video, modeling of processes and situations, case method, use of immunograms, results of multicomponent methods of allergy diagnosis.	<i>Current control:</i> abstract. <i>Final control:</i> credit.
2	Activated T- and B-cell immune response. Immune system dysfunction. Clinical picture and immunogram in acute and chronic infectious diseases of viral and bacterial etiology. Methods of immunocorrection.	3		
3	Clinical picture and immunogram in congenital (primary) immunodeficiencies. Methods of immunocorrection.	3		
4	Clinical picture and immunogram in acquired (secondary) immunodeficiencies. Methods of immunocorrection. Immune system dysfunction as an immunological complication.	2		
5	Fundamentals of molecular allergology, one- and multi-component methods of allergodiagnosics (ImmunoCAP, ISAC, ALEX).	3		
6	Specific immuno-diagnostics and immunotherapy of patients with polynosis and allergic bronchial asthma. Food allergy.	2		
7	Urticaria and angioneurotic edema. Differential diagnostics of immune and non-immune mechanisms (allergies and pseudoallergies). Atopic dermatitis.	3		
8	Drug allergy. Anaphylactic shock. Laela syndrome.	2		
9	Credit			
Total hours of practical classes		20		

2.2.3. Individual work

№ o/n	Title of the topic	Number of hours	Methods of teaching	Form of control
1	Structure and principles of functioning of the immune system. Immunological methods of investigation. The concept of immunogram, ELISA, PCR. Immune inflammation and infectious diseases: immunopathogenesis, immunodiagnostics, immunocorrection.	20	virtual consultation	<i>Current control:</i> oral examination (individual and frontal); written survey; test control; individual tasks; presentation; abstract; report <i>Final control:</i> credit
2	Congenital immunodeficiency diseases. Acquired immunodeficiency diseases. Principles of immunocorrective therapy	40		
3	IgE - dependent diseases. Pollinosis, allergic rhinitis, allergic bronchial asthma. Skin tests. ELISA determination of general and specific IgE. One- and multicomponent methods of allergodiagnostics. CAST-ALISA, Flow-CAST. Methods of specific immunotherapy.	20		
4	Anaphylaxis. Food, insect allergies. Angioedema, urticaria, atopic dermatitis and other allergodermatoses. Diagnosis and treatment of drug allergies.	20		
Total hours of independent work of the applicant		100		

3. EVALUATION CRITERIA

3.1. Evaluation of educational success of students is carried out on the basis of the current "Instructions for evaluating the educational activities of students of KhNMU"

Evaluation	Criteria
"Excellent"	The applicant shows special creative abilities, is able to acquire knowledge independently ability to make decisions in unusual situations, argues convincingly answers independently discovering their talents and inclinations
"very good"	getter speaks volume of material studied, applying it in practice, free to solve exercises and problems in common situations, self-corrects mistakes, the number of which is insignificant
"Good"	The applicant is able to compare, summarize, systematize information under the guidance of a teacher; as a whole to apply it independently in practice; control their own activities; to correct mistakes, among which there are significant ones, to choose arguments to confirm the opinions
"Satisfactory"	The applicant reproduces a significant part of the theoretical material, shows knowledge and understanding of the main provisions; with the help of a teacher can analyze teaching material bugs include a significant amount of material
"enough"	Applicant has educational material at a level higher than the original, much of it reflects on the reproductive level

"unsatisfactory" with the possibility of re-assembly semester control	getter has material at the individual pieces that make up a small part of the training material
"unsatisfactory" with a mandatory re-study test credit	getter material has a basic level of recognition and reproduction of certain facts, items, objects of
particular criteria for assessing practical skills in the disciplines	
"Excellent"	The applicant meets a high (creative) level of competence: the student shows special creative abilities, without errors demonstrates the implementation of practical skills and has systematic theoretical knowledge (knows the method of practical skills, indications and contraindications, possible complications, and n.) and has the ability to make decisions in unusual situations.
"Good"	The applicant demonstrates the implementation of practical skills, admitting some inaccuracies, which he corrects quickly, has theoretical knowledge (knows the method of practical skills, indications and contraindications, possible complications, etc.)
"Satisfactory"	The applicant demonstrates the implementation of practical skills, allowing some errors that can be corrected by correcting them by the teacher, has satisfactory theoretical knowledge (knows the basic principles of methods of practical skills, indications and contraindications, possible complications, etc.).
"Unsatisfactory"	The applicant can not independently demonstrate practical skills (performs them, making gross errors), does not have a sufficient level of theoretical knowledge (does not know the methods of practical skills, indications and contraindications, possible complications, etc.).

3.2. Control questions and questions to the credit:

Topic № 1. Tasks of clinical immunology and allergology. Structure and functions of the immune system. Immune cells and their cooperation. The concept of immunogram. Indicators of a normal immunogram. ELISA, PCR.

Indicate and describe the structure and function of the central and peripheral organs of the immune system.

Define the concept of "immunity", describe the factors of innate immunity: cellular (monocytic - macrophage system, natural killers and granulocyte cells), humoral (complement system, cytokines, etc.).

Complement system. Biological consequences of complement system activation.

Define the concept of "immunity", describe the factors of acquired (specific) immunity.

Antigens: their characteristics, structure, functions. Haptens. What cells are antigen-presenting and their functions.

Monocytic - macrophage system: functions, features, role in realization of immune response.

Modern aspects of phagocytosis.

Specify the stages of phagocytosis. What is antigen presentation.

Populations (T- and B-lymphocytes) and subpopulations (T-helpers of types 1 and 2, T-regulatory, T-cytotoxic cells) of lymphocytes, their function. B-cell function. Clusters of differentiation of T- and B-cells.

Antigenic structure and functions of T-helpers type 1 and 2. How they activate the T- and B-cell immune responses. The value of the functional balance between T-helpers (Th1 \ Th2).
Structural components of immune complexes. What is an antigen, antibody, complement. Classes of immunoglobulins. Dynamics of immunoglobulin levels in the immune response.
Classification of immune reactions by Jell and Coombs.
Flow cytometry, detection of immune cells using anti-CD anti-erythrocyte diagnosticum.
Flow cytometry, determination of immune cells using anti-CD anti-erythrocyte diagnosticum.
ELISA. PCR.
Immunogram, main indicators.
Methods for determining the phagocytic activity of lymphocytes.
Methods for determining the concentration of serum immunoglobulins of the main classes.
Characteristics of immune chains according to the immunogram (T-, B-cells, immunoglobulins, circulating immune complexes, phagocytosis, complement).

Topic № 2. Activated T- and B-cell immune response. Immune system dysfunction. Clinical picture and immunogram in acute and chronic infectious diseases of viral and bacterial etiology. Methods of immunocorrection.

Activated T-cell immune response. Immunogram, main indicators.
Activated B-cell immune response. Immunogram, main indicators.
Describe the features of the development of antiviral immune protection, indicate changes in the immunogram in acute viral infections.
Describe the features of the development of antibacterial immune protection, indicate changes in the immunogram in acute bacterial infections.
Describe the features of the development of antifungal immune protection, indicate changes in the immunogram in fungal infections.
Describe the changes in the immunogram in the dynamics of acute viral infection.
Describe the changes in the immunogram in the dynamics of acute bacterial infection.
Describe the changes in the immunogram in the dynamics of chronic viral infection. What is the dysfunction of the immune system by T-cell type. Prescribe appropriate immunocorrective treatment.
Describe the changes in the immunogram in the dynamics of chronic bacterial infection. What is the dysfunction of the immune system by B-cell type. Prescribe appropriate immunocorrective treatment.
Describe the changes in the immunogram in the dynamics of chronic bacterial infection. What is the dysfunction of the immune system by phagocytic type. Prescribe appropriate immunocorrective treatment.
The importance of the immune system in the development of opportunistic and protozoan infections. Prescribe appropriate immunocorrective treatment.
Immune reactions and complications during vaccination. Призначте відповідну імунокоригуючу терапію.
Immunopathogenesis, stages of development, classification of HIV / AIDS.
Clinical and laboratory criteria for diagnosis, control over the results of treatment of HIV / AIDS.
Methods of immunodiagnosics HIV infection.
Immunodiagnosis of herpes viral infection, chlamydial infection, Epstein-Barr infection (infectious mononucleosis). Призначте відповідну імунокоригуючу терапію.

Topic № 3. Clinical picture and immunogram in congenital (primary) immunodeficiencies. Methods of immunocorrection. Immune system dysfunction as an immunological complication.

Basic principles of classification of congenital (primary) immunodeficiencies.

Types of congenital immunodeficiencies of the B-cell link: mechanisms of development, features of the clinical course, immunodiagnostics and treatment.

Types of congenital T-cell immunodeficiencies: mechanisms of development, features of the clinical course, immunodiagnostics and treatment.

Types of congenital combined immunodeficiencies of B- and T-cell units: mechanisms of development, features of the clinical course, immunodiagnostics and treatment.

Congenital immunodeficiencies are caused by disorders of the phagocytic immune system: mechanisms of development, features of the clinical course, immunodiagnostics and treatment.

Congenital immunodeficiencies are caused by a deficiency of complement proteins (congenital deficiency of C1-complement inhibitor): mechanisms of development, features of the clinical course, immunodiagnostics and treatment.

Topic № 4. Clinical picture and immunogram in acquired (secondary) immunodeficiencies. Methodes of immunocorrection.

Acquired immunodeficiency diseases: definition, causes, mechanisms of development, classification, diagnosis. The role of acquired immunodeficiency diseases in the pathogenesis of various diseases. Immunogram. Immunotherapy.

Basic approaches to treatment.

Secondary immunodeficiency. Chronic fatigue syndrome. Immunogram. Immunotherapy.

Prolonged fever syndrome: etiology, clinical, instrumental, laboratory and immunological criteria for diagnosis, differential diagnosis, basic principles of immunotherapy and immunoprophylaxis.

Lymphadenopathy syndrome: etiology, pathogenesis, classification, research methods, immunological diagnostic criteria, differential diagnosis, basic principles of immunotherapy and immunoprophylaxis.

Types of harmful environmental factors, periods of their impact on the immune system.

Classification of immunotropic drugs, mechanism of action, side effects.

Principles of clinical use of immunotropic drugs, dose selection, immunological control of therapeutic efficacy. Immunosuppressive drugs.

Immunocorrective drugs; blockers of mediators of immune reactions; replacement therapy; cytokine therapy, antireceptor drugs, etc.

Types and features of specific immunoprophylaxis of infectious diseases. Basic principles of immunoprophylaxis of bacterial and viral infections.

Topic № 5. Fundamentals of molecular allergology, one- and multi-component methods of allergodiagnosics (ImmunoCAP, ISAC, ALEX).

Allergy. Stages of formation of allergic reaction. Classification of allergens and allergocomponents. Characteristics of allergocomponents.

Methods of diagnosing allergies: clinical, blood tests, smears from the nasal mucosa, total IgE.

Methods of allergy diagnosis: skin scarification and pre-tests, intradermal test, challenge test and provocation tests.

Methods for diagnosing allergies: ELISA determination of total IgE, specific IgE.

Methods for diagnosing allergies: ImmunoCAP study.

Methods of diagnosis of allergies: a multicomponent study of ISAC, ALEX2.

Topic № 6. IgE - IgE - dependent diseases. Pollinosis, allergic rhinitis, allergic bronchial asthma. Methods of specific immunodiagnostics and immunotherapy.

Classification of allergic reactions according to Jel and Coombs. Types of diseases that have in their pathogenesis I type of reactions.

Pollinosis, allergic rhinitis, allergic conjunctivitis: etiology, immunopathogenesis, clinic, allergy diagnosis, principles of immunotherapy, drugs, regimens.

Skin prik-tests, scarification tests, patch tests. Methods of conducting and evaluation.

Specific immunotherapy, types (sublingual and injection), methods. Methods of conducting and evaluation.

Nonspecific immunotherapy, drugs, regimens.

Insect allergy. Acute angioneurotic edema. Definition, causes, immunopathogenesis, clinic, treatment.

Topic 7. Anaphylaxis. Food, insect allergies. Angioedema, urticaria, atopic dermatitis and other allergodermatoses: types, immunopathogenesis, immunodiagnostics. Modern antiallergic drugs.

Anaphylaxis: definition, causes, immunopathogenesis, clinic, allergy diagnosis, laboratory diagnosis, tryptase determination and prevention.

Acute urticaria: definition, causes, immunopathogenesis, clinic, treatment.

Differential diagnosis of urticaria caused by immune and nonimmune mechanisms.

Chronic urticaria: definition, causes, immunopathogenesis, clinic, treatment.

Food allergy.

Histamine intolerance syndrome. Principles of treatment.

Classification of antihistamines, doses. Systemic and topical intranasal and inhaled

glucocorticoids, doses. Antileukotriene drugs, doses. Systemic glucocorticoids, doses.

Topic № 8. Drug allergy. Anaphylactic shock. Laela syndrome.

Drug allergy. Clinical forms. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug allergy. Acute urticaria. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug allergy. Acute angioedema. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug toxicoderma. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug allergy. Allergic contact dermatitis. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug allergy. Stevens-Johnson and Lyell syndromes. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug allergy. Allergic vasculitis, leukoclastic variant. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug allergy. Anaphylactic shock. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

Drug allergy. Emergency care for anaphylactic shock. Laboratory diagnostics. Skin tests with drugs.

Drug allergy. Serum sickness. Immunopathogenesis, clinic, allergodiagnostics, treatment, allergoprophylaxis.

3.3. Individual tasks

Preparation of a review of scientific literature or conducting scientific research (optional):

- Significance and methods of immunogram using flow cytometry
- Immuno-neuro-endocrine regulation of body functions.
- Apoptosis as a regulation of the immune response.
- Immunology of mucous membranes.
- Immunopathogenesis and immunotherapy of sepsis.
- Herpes virus infection: immunopathogenesis, immunotherapy.
- Epstein-Barr virus infection: immunopathogenesis, immunotherapy.
- Methods for diagnosing allergies: ELISA determination of total IgE, specific IgE.
- Methods for diagnosing allergies: ImmunoCAP study.

- Methods for diagnosing allergies: a multicomponent ISAC study.
- Methods for diagnosing allergies: a multi-component study of ALEX2.
- Pollinosis. Allergen-specific immunotherapy: principles of appointment. Indications and contraindications, the development of complications.
- Drug allergy.

Types of individual tasks:

1. Curation of a patient with allergic pathology.
2. Report of the patient's medical history in a practical lesson.
3. Report of the abstract or presentation in a practical lesson.
4. Writing abstracts, articles.
5. Participation in competitions and student conferences.

3.6. Rules for appealing the assessment If the student does not agree with the assessment, he informs the teacher. The teacher should ask additional questions to clarify the level of knowledge of the student and inform him about the results of the additional survey. If the applicant does not agree with the assessment, his survey is conducted collectively by two teachers, who are appointed by the head of the department. The survey commission may include a teacher who conducted practical classes in the group. If necessary, the head of the department joins the commission. After an additional survey, the commission notifies the student of the final grade received.

4. DISCIPLINE POLICY

In order to achieve the goals of training and successfully complete the course, it is necessary to: join the work from the first day; attend lectures regularly; read the material in advance, before its consideration in a practical lesson; not to be late and not to miss classes; come to the department dressed in a medical gown, have changeable shoes, have a phonendoscope, notebook, pen; perform all necessary tasks and work every day; be able to work with a partner or in a group; ask for help and get it when you need it.

Academic mobility, interchangeability of credit credits (volume of 1 credit 30 hours) is provided. Students can discuss different tasks, but their performance is strictly individual. It is not allowed to write off, use various software, tips, use a mobile phone, tablet or other electronic gadgets during the lesson. Students are not allowed to be late for practical classes. Omissions of practical classes are worked out hour by hour to the teacher of group or the next teacher. Admission and consultations are held daily from 15⁰⁰ - 17⁰⁰, on Saturdays in accordance with the "Regulations on the procedure for students to study" from 07.12.2015 № 415.

Students with special needs must meet with the teacher or warn him before classes, at the request student this can be done by the group leader. If you have any questions, please contact the teacher.

5. ACADEMIC INTEGRITY

Observance of academic integrity by students provides:

- independent performance of educational tasks, tasks of current and final control of learning outcomes (for persons with special educational needs this requirement is applied taking into account their individual needs and opportunities);
- references to sources of information in the case of the use of ideas, statements, information;
- compliance with copyright law;
- providing reliable information about the results of their own educational (scientific, creative) activities.

Violation of academic integrity is considered to be:

1) academic plagiarism - publication (in part or in full) of scientific results obtained by others as the results of their own research, and / or reproduction of published texts by other authors without

indication of authorship; a form of academic plagiarism is self-plagiarism, which consists in reproducing one's own previously published texts without reference to the source of information;

2) fabrication - falsification of research results, references, or any other data related to the educational process;

3) deception - providing knowingly false information about their own educational activities or the organization of the educational process;

4) writeoff -- the use without external permission of external sources of information during the evaluation of learning outcomes;

5) bribery - the provision (receipt) of a participant in the educational process or a proposal to provide (receive) funds, property or services of a tangible or intangible nature in order to obtain illegal benefits in the educational process.

For *violation of academic integrity*, students may be held liable for such academic liability.

5. Recommended reading:

Basic

1. Essentials of clinical immunology / Ed.: Helen Chapel, Mansel Haeney, Siraj Misbah, Neil Snowden. – Sixth edition.- Wiley Blackwell.- 2014.- 377 p.

2. Molecular Allergology. User's Guide/ Ed.: Matricardi P.M., Kleine-Tebbe J., Jürgen H.H., Valenta R., Ollert M. // EAACE, 2016.-402p.

3. Oxford Handbook of Clinical Immunology and Allergy / Third edition / Edited by Gavin PS - Oxford University Press, 2015 - 659 p.

Auxiliary

4. Component-Cross-reactivity-Map-150903_ru

5. Lectures of the head of the department MD Professor Kravchun PG, MD Professor Babadzhan VD, 2020 - 2021 year.

6. Recommendations for the use of molecular diagnostics in the diagnosis of allergic diseases / Valenta R., Tonutti E., Bizzaro N. et al // Eur Ann Allergy Clin Immunol.- Vol 50, No. 2, 52-59, 2018.

7. USMLE STEP 1 Lecture Notes, 2016 / Immunology and Microbiology / Tiffany L. Alley, Kim Moscatello- NY-Kaplan, Inc., 2016 - 519 p.

6. Information resources

1. Page in Moodle <http://distance.knmu.edu.ua/course/view.php?id=1690>

2. Ukrainian Library Association www.ula.org.ua

3. <http://repo.knmu.edu.ua/>

4. <http://dspace.meduniv.lviv.ua/>

5. <https://studfiles.net/mgmu/2741/> Allergology and Immunology National Guide R.M. Haitov 2014.pdf

6. www.allergen.org

7. www.allergyeducation-ma.com

8. www.allergyeducation-ma.com