

Azerbaijan State Medical University

"I CONFIRM"

“Allergology and

Immunology ”department

Director L.I. Allahverdiyeva

Signature _____

10.09.2021

ALLERGOLOGY AND IMMUNOLOGY

On the subject

EMPLOYEE TRAINING PROGRAM

(SYLLABUS)

SUBJECT CODE:

060922

TYPE OF SUBJECT:

Compulsory and optional

SUBJECT TEACHING SEMESTER:

Spring / Autumn-VI

Spring / Autumn-III-VI

DISCIPLINE HOURS: 30 hours- Treatment-prevention faculty-VI course

30 hours - Military Medical Faculty - II course

30 hours- Treatment-prevention faculty-III course

30 hours-Faculty of Public Health-VI course

FORM OF TEACHING THE SUBJECT: Visual

LANGUAGE TEACHING LANGUAGES: Azerbaijan, Russian, English

TEACHERS TEACHING THE SCIENCE: Prof. Allahverdiyeva L.İ.

Dos. Agayeva A.Q.

Dos. Axundov S.N.

Dos. Faramazov A.Z.

Dos. İsrailova SH.Y.

Dos.Quliyeva N.M.

Ass. Humbatova U.M.

Ass. Ibrahimova Sh.H.

Ass.Mustafayev I .A.

CONTACT NUMBERS OF THE DEPARTMENT:

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PREREQUISITES:

Subjects that must be taught in advance in order to teach the subject:

Physiology, pathological physiology, pharmacology, immunology, genetics, microbiology, Pulmonology, internal diseases, infectious diseases

COREQUISITES:

Simultaneously with the teaching of the subject, other subjects: clinical There is a need to teach internal diseases in pharmacology.

Description of department:

Etiology of allergic and autoimmune diseases, the pathogenesis algorithms of diagnostics, differential diagnosis, treatment and prevention of immunodeficiency's and congenital immunodeficiencies.

Assessment of urgent allergic reactions and treatment tactics.

The purpose of the Department:

The main purpose of department therapy and diagnosis of urgent reactions. Define bronchial asthma, seasonal and perennial rhinitis and conjunctivitis. Be able to differential diagnosis, diagnosis and treatment of these diseases. Asthma attack and remission, treatment.

Tactics for escaping severe asthmatic status in patients with bronchial asthma.

Determination of different phenotypes of asthma. Collecting an allergic history anamnesis to confirm the diagnosis of bronchial asthma, putting allergic skin tests, peakflowmetry, spirometry and interpretation of it results.

Conducting bronchial provocation tests. Improvement bronchial obstruction with bronchodilators test

Determination of the level of nitrogen 2 oxide in the exhaled air.

Allergic skin reactions

Skin prick tests

Prick to prick tests

Patch tests

For treatment, our department use modern methods .For saving patients from severe form of BA we use nebulizer treatment.

Students are shown the widely used allergen-specific immunotherapy for bronchial asthma treatment.

The etiology, pathogenesis, clinical manifestations, diagnosis of atopic dermatitis. Determination of the severity level of the disease on the scale of SCORAD. Food diary tactics, putting skin prick tests, putting elimination and provocation tests, differential diagnosis and teaching modern methods of treatment.

The etiology, pathogenesis, clinical manifestations, diagnosis of Urticaria and Quincke's edema. The differential diagnosis of acute and chronic Urticaria. Chronic and idiopathic Urticaria, cold and sun urticaria, allergic urticaria contact urticaria, acute urticarial, congenital angioneurotic Quincke's edema and its types, treatment methods and prevention.

The etiology, pathogenesis, clinical manifestations, diagnosis of food allergy. Keeping food diary for making good diagnostics of food allergy, putting skin prick tests. Diagnostics of Food allergy by immunoassay and immunocap methods and interpretation of its results.

The mechanisms, main causes and clinical manifestations, differential diagnostics of Anaphylactic shock. Determination of tryptase in blood, saving the patient from anaphylactic shock. The prognosis of anaphylactic shock due to molecular allergodiagnostic methods.

The main purpose of immunology department is to educate the students about immunodeficiency and preventions of these diseases. The etiology, pathogenesis, clinical manifestations, diagnosis of primary and secondary immunodeficiencies. Treatment methods of immunodeficiencies.

The main causes of autoimmune and lymphoproliferative diseases. Treatment methods.

Vaccination. Vaccination methods. Indications and contraindications to vaccination.

The main Immunodiagnostic methods. Assessment of children and adults immune system.

The Results of Department :

After finishing course of Allergology and immunology our students must know how to give first aid in anaphylactic shock, what is mechanisms and causes of these diseases. How to differentiate different types of anaphylactic shock. At the end of the course students also must know the dangerous manifestations of allergic

diseases such as Urticaria, Quincke's edema, Bronchial asthma and etc. Students must know the main and modern methods of treatment of Allergic diseases.

At the end of Immunology course students must know the basics of immunology, the mechanisms of immune deficiencies, clinical manifestations, how to differentiate immunodeficiency and treatment methods. Students also should know how to diagnosis autoimmune and lymphoproliferative disease, and what is the main principles of treatment.

The calendar-thematic plan in a subject of "Allergy and Immunology" for students of the VI course of faculty of I General Medicine.

1. Introduction in allergy and immunology. Mechanisms of allergic reactions. Classification of allergens. Allergic rhinitis. Pollinosis. Aetiology, pathogenesis, clinical picture, diagnostics, treatment and prevention.
2. Bronchial asthma. Aetiology, pathogenesis, clinical picture, asthmatic condition, classification. Exercise-induced asthma. Hormone induced asthma.
3. Diagnostics, differential diagnostics, treatment and prevention of bronchial asthma. Specific immune diagnostics and immunotherapy of allergic diseases. School of asthma.
4. Food allergy and its clinical manifestation. Aetiology, pathogenesis, clinical picture, diagnostics and treatment. Atopic dermatitis. Clinical picture, diagnostics, differential diagnostics and treatment. Acute and chronic urticaria. Quincke oedema and its classification. Aetiology, pathogenesis, clinical picture, diagnostics and treatment.
5. Drug allergy. Aetiology, pathogenesis, clinical manifestations, diagnostics and treatment. Serum disease, clinical picture and treatment. Chemical allergoses, clinical picture and treatment. Anaphylaxis, clinical picture and treatment. Prevention of drug allergy.

Calendar topic plan of the immunology department

1. The concept of immunity. Types and forms of immunity. Central and peripheral organs of the immune system. Specific and non-specific immunity (GALT, BALT, MALT, SALT).
2. Classification and properties of antigens and haptens. Their structure and types. The main properties of antigens. Affinity and avidity. Epitopes. Superantigens. T and B-lymphocytes and their populations

3. Molecular structure of antibodies (immunoglobulins). Specificity of immunoglobulin molecules. Characteristics of different classes of immunoglobulins (IgG, IgM, IgA, IgE, IgD) and the tissues encountered. Isotypes, allotypes and idiotypes of immunoglobulins. Theories of the formation of antibodies. Genetics of antibodies. Apoptosis and necrosis. Tolerance. Primary and secondary immune response.
4. Transplant immunity and the mechanism of its formation. EHK. HLA antigens, their role in organ and tissue transplantation. Typing of HLA antigens. Types of transplant rejection and immune mechanisms, treatment tactics against rejection.
5. Types of pathological reactivity. Causes of allergies. Allergens and their classification. Modern classification of allergic reactions. Mechanisms and types of allergic reactions. Drug and food allergies. Hyposensitization and its treatment principles.
6. Primary and secondary -immune pathologies. Causes and classification. The main diseases and syndromes of B-lymphocytic, T-lymphocytic, combined, phagocytic and complementary system pathologies. Principles of treatment of primary immune pathologies. Principles of secondary immune deficiencies.
7. Autoimmune and lymphoproliferative diseases. The mechanism of their formation. Development of pathological processes and clinical variants in autoimmune diseases. Lymphoproliferative diseases: Hockin's disease and infectious mononucleosis.
8. Vaccines. Their classification. The role of vaccination in the prevention of modern diseases. Active and passive vaccination methods.
9. Immune status and its clinical assessment. Degrees of immune deficiency. Physiological changes in the immune system in children and the elderly. The main directions of immunocorrection and immune rehabilitation. Immunostimulants and immunomodulators, their nature and classification.

Calendar-topic plan of the lecture in the immunology department

1. History of development of immunology. The effect of ecology on immune organs and cells. Ecopathological diseases. Antigen and its main features. Basic human histocompatibility complex (MHC). Characteristics and classification of HLA-antigens. Secretory immune factors (GALT, BALT, MALT, SALT)
2. Cellular factors of non-specific defense (phagocytic system, natural killer cells - NK, dendrites and Langerhans cells). Humoral factors of resistance (complement system, interferon system, properdin system, lysozyme, fibronectin, acute phase proteins).

3. Specific cellular immunity. Immunoglobulins of serum and mucous membranes and their role in immune defense. Primary and secondary immune response. Development of T- and B-lymphocytes, primary membrane receptors, subpopulations.
4. Types of pathological reactivity. Hypersensitivity reactions - allergies. Classification of allergens. Types and mechanism of allergic immune reactions. Drug and food allergies. Diagnostic methods in allergic diseases, specific hyposensitization.
5. Primary and secondary immunodeficiency. Classification, types, degrees of immune deficiency. The main causes are clinical options, immunological changes. Principles of diagnosis and treatment of pathological immune conditions.
6. The concept of autoimmunity, types of autoantigens, classification of autoimmune diseases and theories of origin. Specific immune diagnosis of autoimmune diseases. Immune mechanisms, clinical manifestations, diagnostic methods and characteristic immune indicators, forms of pathological cells in lymphoproliferative diseases. Leukemia caused by pathology of B-lymphocytes and plasma cells, myeloma. Determination of modern immune markers.

Practical lessons for faculty of public health.

1. Cell composition of bone marrow. Formation of immune system cells in the bone marrow. Normal levels of immune cells in peripheral blood. Features of immune indicators at different ages. Determination of non-specific immune cells: determination of phagocyte cells (NBT test), phagocytic activity, phagocyte index) and NK cells.
2. Interferon system, properdin system, lysozyme and fibronectin, determination of CRP (screening test). Components of the complement system, their biological significance, determination of C1, C3, C4, CH50. Determination of hemolytic unit.
3. General characteristic, classification of cytokine system – inflammatory and non-inflammatory cytokines and their determination methods. Their normal levels in blood.
4. Types and differences of specific immune cells. Normal and pathological indicators of T-lymphocytes and their subpopulations . Normal levels of B-lymphocytes in blood and their age characteristics. Differences between B1-l and B2-l populations.
5. Biological significance of IgA, IgM, IgG, IgE, IgD in plasma and their normal and pathological indicators. Biological importance and normality of sIgA in

secretions. Immunological methods for the determination of immunoglobulins (Mancini method, Immunodiffusion, ELISA method).

6. Determination of heavy and light chains of immunoglobulins (IFA, ELISA) and their diagnostic significance in immunoglobulin pathologies (gammopathy). Classification of circulating immune complexes depending on size, composition and their increase during various diseases.

7. Classification of blood groups and Rh factor. Hemolytic anemia caused by the confusion of these factors. Normal blood parameters of hemoglobin and erythrocytes. Methods for the determination of pathological erythrocytes in hemoglobinopathy (target and sickle erythrocytes, microspherocytosis).

8. Evaluation of immune status. Primary and comprehensive immunological examinations. Types,

kinds and rates of immunodeficiency.

9. HLA antigens, main classes. The role of tissue compatibility in donor and recipient selection in transplantation.

10. Diagnostic value of specific tumor markers in cancer (breast, prostate gland, human papilloma virus).

11. The concept of allergy. Mechanisms of allergic and pseudoallergic reactions. Determination of specific allergens: skin, subcutaneous, intravenous, intranasal, enteral, etc. methods.

12. The concept of autoimmunity, organ-specific (IAA, GAT, Anti-TPO, ANA, AMA, etc.) and non organ-specific autoimmune pathology.

Lecture topics for faculty of public health.

TOPICS DATE TIME

1. History of Immunology. Antigen and its main features. The main human histocompatibility complex (MHC). Characteristics and classification of HLA-antigens. Primary and secondary immune responses. Specific cell immunity. Development of T- and B-lymphocytes, the main membrane receptors, subpopulations. Cell factors of non-specific protection (phagocytes, natural killer cells-NK, dendrites and Langerhans cells). Humoral factors of resistance (complement system, interferon system, properdin system, lysozyme, fibronectin, acute phase proteins). Transplantation immunity, HLA antigens, grades. Role of HLA antigens' typing in donor-recipient selection.

2. Evaluation of immune status. Primary and comprehensive immunological examinations. Types, kinds and rates of immunodeficiency.

3. The concept of autoimmunity, organ-specific (IAA, GAT, Anti-TPO, ANA, AMA, etc.) and non organ-specific autoimmune pathology

LITERATURE AND MATERIALS:

1. “Uşaqlarda respirator allergiya”, Monoqrafiya, Allahverdiyeva L.İ., Bakı, 2008
2. Azərbaycan uşaqlarında bronxial astmanın profilaktik tədbirləri və müalicəsi. Milli proqram. Bakı, 2008
3. “Uşaqlarda bronxial astma” metodik vəsait, Allahverdiyeva L.İ., Hübətova Ü.M., 2009
4. “Аллергология и иммунология”, Национальное руководство - Хаитов Р.М. 2009
5. “Kliniki allerqologiya və immunologiya” dərsliyi 2010; II nəşr, işlənmiş və tamamlanmış, 2011-ci il, 283 səhifə. Prof. Allahverdiyeva L.İ.-nin redaktəsi ilə
6. “Övrə və Kvinke ödemi”, Tədris-metodiki vəsait, 47 səh., Allahverdiyeva L.İ., Axundov S.N., Cəfərova S.Ə., Bakı, 2011
7. “Uşaqlarda allergik xəstəliklər” (ali məktəblər üçün dərslik), Allahverdiyeva L.İ., Bakı, 2012, 244 səhifə
8. “Qida allergiyası” tədris-metodiki vəsait, 47 səh. Allahverdiyeva L.İ., İsrailova Ş.Y., Bakı, 2012
9. “Dərman allergiyası” Tədris-metodiki vəsait, Allahverdiyeva L.İ., Ağayeva A.Q., Cəfərova S.Ə., Bakı, 2013
10. “Anafilaktik şok”, tədris metodik vəsait, Allahverdiyeva L.İ., Ələkbərova N.A., Bakı, 2015
11. “Allergik rinit”, Metodik vəsait, Allahverdiyeva L.İ., Əhmədova G.P., Axundov S.N., Hübətova Ü.M., Bakı, 2016
12. “Atopik dermatit”, Metodik vəsait, Allahverdiyeva L.İ., Ağayeva A.Q., Cəfərova S.Ə., Bakı, 2017
13. “Azərbaycan allerqologiya və klinik immunologiya” jurnalı, ildə 2 nömrə buraxılır
14. Стенли М. Нагуа, М. Эрик Гершвин. Секреты аллергологии и иммунологии.

Protocols:

1. CLINICAL PROTOCOL ON ANAPHYLACTIC SHOCK (28 pages).
2. CLINIC FOR CHRONIC OBSTRUCTIVE DISEASE OF THE LUNGS

PROTOCOL Protocol (40 pages) - 1375 KB

3. RESPIRATORY INFECTIONS OF THE UPPER RESPIRATORY AND
CLINICAL PROTOCOL ON INFLUENZA (23 pages).

Sites in the Azerbaijani language:

<http://www.isim.az/isim/protokol.php>

Sites-in Russian:

<http://www.lvrach.ru/rub/11000043/>,

http://www.mediforum.sk/pdf/GINA_2006.pdf

<http://old.consilium-medicum.com/media/pulmo/>,

http://www.rmj.ru/numbers_81.htm

Sites-in English:

<http://allergies.about.com/od/medicationinformation/a/blackbox.htm>

<http://pollen.aaaai.org/nab/index.cfm?p=default>, <http://www.ginasthma.com/>

<http://www.wrongdiagnosis.com/a/allergies/intro.htm>

<http://www.wrongdiagnosis.com/a/asthma/intro.htm>

DEPARTMENT WORK:

Department work on this subject is not provided.

EXPERIENCE:

Summer internship in this subject is not provided.

PREPARED:

Head of the department

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Deputy head of the department for educational work

dos. Quliyeva N.M.