

Ministry of health care of Ukraine
Highest state scientific institution of the Ukraine
«Ukrainian medical stomatological academy»

"Approved"
at a meeting of the Department of
Experimental and Clinical Pharmacology with
Clinical Immunology and Allergology
Head of the department
Professor _____ Devyatkina T.A.
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**Methodical guidance for students' self-directed
work when preparing for practical session**

Academic subject	Clinical Immunology and Allergology
Semantic module №1	Immunological status. Immunodeficiency diseases and immune-pathology
Topic 5	Acquired immunodeficiency diseases. AIDS immunopathogenesis, immunodiagnostics, and immunocorrection
Year of study	5
Faculty	medical

1. Relevance of the topic:

In connection with the steady increase in the incidence the and especially thorpe of clarity in the treatment, all the more urgent becomes the question of acquired immunodeficiency diseases (LIP) and secondary immune deficiency. (VIN) Under this according to the international qualification of disease (10 review.) need to understand the disorders of immunity, which arise as a result of physical or other diseases.

Secondary (acquired) immunodeficiency - a clinical and immunological syndrome, which is characterized by the following: a) develops, usually on the background before a normally functioning immune B; b) a sustained reduction in functional and morphological indicators of specific and nonspecific immunoreactivity factors; c) the immunodeficiency It is an area of risk chronic infectious diseases, autoimmune diseases, and allergic diseases and tumors.

2. Specific objectives:

1. Master the principles of diagnosis, differential diagnosis of acquired immunodeficiency diseases.

2. To learn the basic signs immunodiagnostics, clinical manifestations, medical tactics, approaches to treatment at isolated combined immunological peninsula governmental T - and B-dependent immunodeficiencies.

3. Identify the main clinical and laboratory signs of LIP and WINE if clinical signs persistence viral and chlamydial infections.

4. To be able to carry out a differential diagnosis, to determine the range of immunological surveys in patients with lymphadenopathy, fever of unknown origin.

5. To acquire the diagnosis and clinical immunopatological changes in patients with cryoglobulinemia with syndrome chronic fatigue.

6. Learn the tactics of the doctor, principles of treatment and prevention purchased and immunoproduktive disease and secondary immune shortcomings of STI for diseases of internal organs, and surgical pathology.

7. To develop creative abilities in the process of clinical, theoretical, laboratory studies of LIP and WINES.

3. Basic knowledge, skills necessary for studying the subject (interdisciplinary integration)

The name of the previous disciplines	These skills
Anatomy	Know the structure of the thymus, lymph nodes, plaques, spleen, bone marrow. Spend examination of patients.
Normal physiology	To know the functioning of the central and peripheral organs of the immune system. Take hold of the basics of clinical and laboratory studies.
Biochemistry	Learn the basics of biochemical laboratory studies. Action and effect of cytokines of different groups of biologically active substances.
Microbiology and Virology	Know the immune response, diagnosis of bacterial and viral infections. Take hold of the basics of special microbiological methods.
Therapy	Know the pathogenesis and clinical manifestations of allergic diseases and secondary immunodeficiencies. To be able to collect immunological and allergic history.
phthisiatry	To master the mechanisms of the immune response to cell dependence, course and clinical manifestations of tuberculosis.
Infectious diseases	Learn the pathogenesis, clinical manifestations of bacterial

	and viral infections. To be able to diagnose bacterial and viral infections.
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4. Tasks for independent work during preparation for classes.

4.1. List of basic terms, parameters, characteristics that must learn art udent while preparing for the class:

Time	Definition
Immune deficiency syndrome	High sensitivity to infections through the breach humoral, cell-mediated immunity.
Cryoglobulinemia	System immunopathology disease associated with the presence in the blood of abnormal heat-labile proteins
Agammaglobulinemia	Failure to produce immunoglobulins, as a rule - it is born immunodeficiency
Essential eosinofilling syndrome	Sustained increase in the number of eosinophils, greater than 0.6 g/L in the peripheral blood with the exception of well-known reasons development of the disease.
Blood stem cells	Hematopoietic bone marrow cells is the mother of all blood cells, a precursor of hematopoietic and limfoid bodies.

4.2. Theoretical questions for the class:

1. The concept of acquired immunodeficiency. The causes, clinical features, immunodiagnostics.
2. Basic principles of classification acquired immunodeficiencies.
3. The main features of immunodiagnostic clinical manifestations, tactics of the doctor, treatment approaches at isolated immunoglobulin T s B-dependent immunodeficiency.
4. The main clinical and laboratory signs of NCDs and OH if clinical signs persistence viral and chlamydial infections.
5. Differential diagnosis, range of immunological surveys in patients with lymphadenopathy, Coy fever of unknown origin.
6. Diagnosis of clinical and immunopathological changes in patients with cryoglobulinemia syndrome chronic fatigue.
7. Tactics doctor principles of treatment and prevention purchased immunodeficiency disease first and secondary immune deficiency, which developed in internal diseases and surgical pathology

4.3. Practical questions for the class:

1. Learn basic clinical and laboratory signs of acquired immudefitsitnyh states. Rate importance of determining the absolute amount of immune cells.
2. To be able to detect signs of immunosuppression according to clinical in general blood test.
3. To master the basic principles of clinical diagnosis based on the wording of the indicators of clinical and research immunological.
4. Appoint immunotropic treatment, determine prognosis, conduct primary and secondary immunization with immune diseases.
5. Know the basic principles of purpose Immunotropic therapy in complex treatment of immune diseases.
6. To be able to assign immuno- therapy in treatment of infectious diseases.
7. Evaluate the effectiveness of immunotherapy appointed based on dynamic studies immunograms.
8. Ability to take into account the adverse effects immunotropic therapies, especially in combination with traditional therapy.

Content topic

Definition of secondary immunodeficiency

Secondary immunodeficiency (VT) - a disease characterized by persistent clinical and laboratory symptoms of the immune system, which are secondary.

This definition VT underlines its features:

- Immune system disorders are persistent nature, transient changes in immune parameters are considered as a situational response;
- Laboratory symptoms of the immune system are in violation of the number and functional activity of immune cells;
- Destruction of the immune system are really secondary, it is necessary the definition of the etiologic agent and the absence of a patient previously immunity disorders (according to history and immunological monitoring

The causes of secondary immunodeficiency:

1. Protozoal infestation and helminth infections (malaria, toxoplasmosis, leishmaniasis, trichinosis, ascariasis, etc.).
2. Bacterial infections: staphylococcal, pneumococcal, meningococcal, tuberculosis, and the like.
3. Viral infections:
 - a) sharp - measles, rubella, influenza, mumps virus I disease (mumps), windy pox, hepatitis, herpes, etc.;
 - b) persistent - chronic viral hepatitis B, subacute skleroze encephalitis, AIDS and the like;
 - c) born - salivary gland disease, rubella (TORCH-complex).
4. Malnutrition: protein-energy malnutrition, micronutrient deficiencies (Zn, Cu, Fe), vitamins - retinol (A) ascorbic acid (C), α -tokofepol and (E), folic acid; depletion, cachexia, loss of protein through the intestine, kidney, inborn errors of metabolism, obesity.
5. Malignant neoplasms, especially limfoproliferativnye.
6. Aytoimmynnye disease.
7. States that claim to loss rivodyat immukompetentny's cells and immunoglobulins (bleeding lymphorrhea, burns, nephritis).
8. Exogenous and endogenous intoxication (poisoning, thyrotoxicosis, decompensated diabetes).
9. Immunodeficiency after different influences:
 - a) physical (ionizing radiation, microwave and the like);
 - b) chemical (immunosuppressants, chemotherapy, corticosteroids, drugs, herbicides, pesticides, etc.).
10. Violation of neurohormonal regulation: the impact of stress (severe trauma, surgery, physical, including sports, Perrin apryazhe n s, trauma, etc.).
11. "Natural" immunodeficiencies - infancy, old age, pregnancy.

It is necessary to stress once again that by clinical signs and laboratory data of the secondary and primary immunodeficiencies are similar, until the existence of the relationship between the nature of immune disorders and the type of pathogen. The principal difference is the reason that Lège IT-based immune disorders: the primary - is a natural defect, in secondary - Acquired.

As the primary, secondary immunodeficiencies may be predefined dysfunction of one of the main immune systems: a humoral (B-systems, s), cellular (T-Systems), phagocytes, complement system, or multiple (combined defects).

The following are examples of situations that may be accompanied by the development of secondary disorders of phagocytic immunity (neutropenia, disorders of phagocytosis and chemotaxis of phagocytes defect).

Acquired disorders of phagocytosis and possible causes of their development

1. reducing ix opsonized activity:

- a) reduction of taftsin well (splenectomy);
 - b) reduction of complement (system nd nd red ox chunk, cirrhosis of the liver, adoption glyukokortikostero Ido c);
 - c) reducing the concentration of IgG / IgM (multiple myeloma, power failure);
 - d) reduction of the level of fibronectin;
 - d) disease (syndrome) Sjogren (reducing the number of IgG 2, pneumococcal disease);
 - g) sat projective deficit IgG subclasses;
 - h) but diseminovan e intravascular coagulation.
2. Infringement of fixation and Cl IgG antibodies to the bacteria under the influence of IgM-stand -revmatoï factor.
3. Syndrome hyperimmunoglobulinemia A.
4. Violation of the attachment to the pathogen (hyperglycemia).
5. actin dysfunction syndrome, hypophosphatemia.
6. Unknown mechanisms of disturbance of phagocytosis (burns, leukemia).

Acquired defects of chemotaxis of phagocytes and possible causes of their development

- 1. Violation of chemoattractant products.
 - 1.1. Reducing the level of complement C5a-components:
 - a) the impact of John activating factors (Hodgkin's disease, liver cirrhosis, uremia);
 - b) hypercatabolism (systemic lupus erythematosus, acute glomerulonephritis, a disease of immune complexes);
 - c) influence of drugs (corticosteroids);
 - g) local failure complement bacterial products (such as Pseudomonas aeruginosa ELAS-pelvis).
 - 1.2. Violation of the metabolism of arachidonic acid under the influence of the first drugs (indomethacin, salicylates and other nonsteroidal anti-inflammatory drugs, which block the production of prostaglandins and leukotrienes).
- 2. Violation microtubule cytoskeleton stability under the influence of drugs (colchicine those tracilin, ethanol, amphotericin B, anesthetics).
- 3. diseases and conditions that are accompanied by violation of chemotaxis and with unknown mechanism:
 - a) ichthyosis;
 - b) acrodermatitis enteropati;
 - at) indigestion;
 - g) Down's syndrome;
 - d) acute viral infection - herpes, influenza;
 - e) old age.

4. Influence of chemotaxis inhibitors:

- a) Candida albicans;
- b) Hyperlizotsimia (sarcoidosis).

Below are summarized the different signs, the presence of which (in one or another combination) allows the physician to a patient suspected primary or secondary immunodeficiency.

CLINICAL Manifestations Immunodeficiency (ID):

- increased incidence of uncomplicated infections caused by common pathogens governmental infectious pathogens: acute infectious disease of the upper respiratory tract, oral cavity, urinary system, thus candidiasis (8 or more times during the year);
- bronchitis (4 or more times during the year);
- frequent complications of acute incendiary disease of upper respiratory tract and respiratory tract: sinusitis, otitis, pneumonia (2 or more during the year);
- frequent development of exacerbations of chronic incendiary disease of the respiratory

and urinary tract (4 or more times during the year);

- move of atypical infectious diseases;
- resistance to standard schemes of causal and pathogenetic therapy (for 2 or more months of treatment);
- the need for antibiotics reserve;
- Doven's need for infusions of anti-infective agents.
- Zab Olevanov caused light virulent E (low pathogenic) and of atypical pathogens;
- frequent recurrence of the labial and / or genital herpes infection minutes (4 or more times a year);
- activation of flaccid (latent) infection with systemic clinical manifestations and the prevailing tendency to damage to the nervous system and organ of vision (Epstein-Barr virus, cytomegalovirus, Toxoplasma s and the like; mixed forms of infections;
- change causative infectious agent during the illness;
- Systemic fungal infections;
- development purulent processes in the skin and / or internal organs: generalizing IAOD neopioderma, boils, carbuncles, cellulitis, deep abscesses (throughout the year);
- The development of osteomyelitis, meningitis, sepsis, peritonitis (2 or more cases for life).

RESEARCH PLAN IMMUNOLABORATORY

1. Complete blood count, Choe, C-reactive protein.
2. Evaluation of the cellular (T-units) immunity:
 - a) The number of populations and subpopulations of T-lymphocytes (CD2, CD3 CD4, CD8).; ratio CD4 + / CD8 +;
 - b) skin tests with so-called recall -antigenami (tetanus and diphtheria toxin, tuberculin, Candida, Trichophyton, Proteus and Streptococcus);
 - at) I proliferative activity in the RBT of PHA, ConA.
3. Evaluation of humoral (B-unit) immunity:
 - a) the number of B cells (CD19, CD20, CD23);
 - b) serum level of IgM, IgG, IgA, IgE, sIgA.
4. Measurement of phagocyte system:
 - a) the number of neutrophils, which phagocytose and monocytes;
 - b) phagocytosis activity;
 - at) kitty lorodoz and pendent metabolism of NBT-test.
5. Evaluation of the complement system:
 - a) C3 quantification;
 - b) determining the amount of C4;
 - at) determining the level of the total complement of CH50.

If necessary, a more in-depth study of the immune status evaluated:

1. The number and the PC-cells function etc (S016 / S056);
2. HLA phenotype.
3. Products about inflamed linseed x cytokines (IL-2, IFN- γ , and the PNP, IL-8, IL-12).
4. The production of anti-inflammatory cytokines (IL-4, IL-5, IL-10, IL-13).
5. The presence of specific autoantibodies.
6. The presence of specific cell sensitization.
7. The presence of T and B cells to activate features (DR, CD25, CD71, and so on.).

The only conventional classification IDs to date does not exist. There are classification, which are based on the etiological factor, the duration of, for example, transient - lasting up to 6 months and the system - the length of more than 6 months (Markova, TP, KHaitov RM). According to the literature cite one of the classifications of workers.

Classification of secondary immunodeficiency (ID).

The I. Combined ID.

1. Total limfocitopenic syndrome.

2. Syndrome polyclonal activation of lymphocytes.
3. Common variable immunodeficiency.
4. Syndrome hyperplasia of lymphoid tissue (lymphadenopathy, timikolimfatich EQF s syndrome, tonzilogeny syndrome).
5. Posttonziloectomic syndrome.

II. T cell ID.

1. T limfocitopenic syndrome.
2. Syndrome immunoregulatory T cell imbalance.
3. Deficiencies interleukin and lymphokine receptors.

III. The cell ID.

1. Common variable B-cells ID.
2. Pangipogammaglobulinemia.

The I V. Deficiencies mononuclear phagocytic system.

1. Granulocytopenia.
2. Deficiencies of the receptor and the adhesin in neutrophils.
3. Deficiencies of phagocytosis.

V. Deficiencies of molecular interactions of leukocytes.

VI. Deficiencies of the complement system.

1. Gipokomplementemi Syndrome.
2. Deficiencies of certain factors.

VII. Deficiencies of normal killers.

VIII. Deficiencies of nonspecific immunity factors.

IX. Metabolic VT

In the order of the Ministry of Health of Ukraine № 626 "On Approval of the cells independent protocols of falling IU Di Qing care to patients with immune diseases" (2007) clarified the clinical and laboratory findings and treatment plan and m Munoz pendent 's disease, in which there are "pure" signs of immunosuppression including acquired immune deficiency. IBC Code 10: D80.2

Selective deficiency of IgA - innate or acquired immunodeficiency, which is characterized by a persistent reduction in total serum IgA and normal values of all other chains immunity and in most cases does not manifest clinically.

diagnostic criteria

CLINICAL

- Increased frequency of bacterial infections of the respiratory tract and digestive system;
- Allergic diseases;
- Autoimmune disease;
- Often - asymptomatic course of selective IgA deficiency.

LABORATORY

- A decrease in serum IgA levels (less than 0.1 g / l);
- Normal levels of serum IgG and IgM;
- The normal level of the components of the complement system;
- The normal number, functional activity of T- and B-lymphocytes and phagocytes.

Medical therapies

- If there is an increased frequency of infections - the expansion hits the appointment of antibacterial therapy;
- The formation of chronic foci of infection - infection therapy with antibiotics and antifungal drugs according to the respective treatment protocols, taking into account the sensitivity of pathogens in the highest dose, duration of treatment 2-3 times a course of treatment, and immunonescomproment IAOD us three patients;
- Contraindication introduction of products and components blood; if necessary, their administration (for life displays) shows the transfusion of washed red blood cells.

Common variable immunodeficiency (CAR) - a natural immune deficiency chains

humoral and cellular immune system.

diagnostic criteria

CLINICAL:

- Immunodeficiency debut as recurrent infections in adulthood, rarely - in childhood;
- The development of recurrent bacterial infections bronchopulmonary internal systems: bronchitis, pneumonia (at least 2 episodes per year);
- Recurrent upper respiratory tract infections: recurrent sinusitis 1-2 times a year, chronic sinusitis refractory to antimicrobial therapy lasting longer than 1 month;
- Recurrent 2-3 times a year, resistant to therapy lasting longer than 1 month;
- Septicemia, osteomyelitis;
- Recurrent and Persistent viral (herpesviruses), fungi (Candida) and parasitic (giardiasis) infection;
- Autoimmune disease in 50% of patients;
- Abnormal gastrointestinal channel: malabsorption syndrome, lymphoid hyperplasia;
- Granulomatous lung disease, liver, spleen, and skin;
- Increased risk of developing malignancies.

LABORATORY

- Significant decrease relative to the age old standards two of the three major isotypes common with at about x immunoglobulins (IgG, IgM, IgA);
- Total amount of IgG + IgM + IgA <4 g/l;
- Weeks residual response to the vaccine is white on a (diphtheria toxoids and tetanus) and polysaccharide antigens (Haemophilus influenzae, Streptococcus pneumoniae);
- Normal or a reduced number of B-lymphocytes;
- Possible anomalies and the number of T-lymphocyte function in: a decrease in CD4 - lymphocytes, reduced proliferative response to one or more mitogens Therapeutic measures

The basic method. Immunoglobulin Doses second - permanent lifetime regular replacement therapy every 3-4 weeks. Dose selection is carried out individually depending on the severity of the infectious syndrome. The best is achievable supervised transfusion of serum IgG of 5 g / L, but not less than 4 g / L. In case of severe infection, the GOVERNMENTAL bacterial infections (sepsis, pneumonia, osteomyelitis, septic arthritis) shows the introduction of an additional dose. IBC Code 10: D89.1

Latest viral fatigue syndrome (MSS) -Increased fatigue, which is formed after a viral infection and does not disappear after rest and sleep, which leads to a significant reduction in mental and physical performance.

diagnostic criteria

Main criteria

- Constant fatigue more than a month after a viral infection that does not go away with rest and so pronounced that reduces the average physical and mental activity more than 50%;

It is necessary to rule out other conditions that may lead to the emergence of such symptoms: mental, oncological diseases, hematological malignancies, substance abuse, alcoholism, drug addiction, tuberculosis, autoimmune, allergic, endocrinological diseases, fungus, bacterial, protozoal infections, abuse of drugs, sarcoidosis, and the like.

Differentiation with essential fatigue syndrome (except postvirus genesis)

Symptomatic criteria (these symptoms occur simultaneously with fatigue or after the start and kept more than a month after a viral infection):

- Mild fever or chills;
- Pain and sore throat;
- Enlarged lymph nodes;
- Migratory arthralgia, not associated with inflammation of the joints;
- Myalgia;
- Nemoto IAD and overall muscle weakness;
- Increased fatigue after exercise;

- The emergence of generalizing headache;
- Photophobia, temporary loss of field of vision, fainting, excessive irritability, inattention, difficulty thinking, carrying The ability to focus, Dept. Rexam;
- sleep disturbance.

Criteria for physical studies: these criteria physician must establish at least, twice, with intervals at least during months:

- Low fever ($37,6-38,6^{\circ}\text{C}$ - orally or $37,8-38,8^{\circ}\text{C}$ - rectally);
- Nonexudative pharyngitis;
- Increase or sensitive to palpation front, rear or axillary lymph nodes.

Diagnosis is confirmed by reliable, if there are two main, six symptomatic criteria and two physical criteria, or if there are two major and eight symptomatic criteria.

Medical therapies

- Immunoglobulin administration Doven 1 time per month for 3 months;
- Antiviral therapy with acyclovir and ganciclovir and, foscarnet as well (for the displays);
- Immunotropic preparations based on data immunogramm;
- Nonsteroidal anti-inflammatory drugs (such as symptomatic agents for headaches, joint and muscle pain);
- Antidepressant (in the case of Depero with sive x states);
- Physiotherapy (electric sleep).

The mean duration of hospital treatment 14-18 days - for differential diagnosis, selection of treatment, stabilization of the patient's condition.

One of the manifestations of an immunosuppressive condition, which connects a large group of diseases that have **a systemic vasculitis (SV)**. This is - a heterogeneous group of diseases, the main feature of which is the inflammation of the blood vessels to the development of ischemic changes in the relevant organs and tissues. Clinical manifestations depend on the NE type, size and location of the affected vessels, severity of associated disorders incendiary.

Vasculitis can occur without base pathology and represent the group of primary or CB associated with various infectious diseases and somatic - is secondary NE. Vasculitis are local and vascular lesions of the body, but more often generalizing that cause damage to several organs. The inflammation of the vascular wall can lead to damage to the segmental vessel, predetermining the development of stenosis and occlusions or aneurysms creation.

The first attempts to explain the reasons for this or other disease from the group of NE were made in the 30-40-years XX century. Based on the values provided Mycobacterium tuberculosis, streptococcus treponemes pale, non-infectious factors (hypertension, drug allergies). The etiology of most primary CB before this time is not clear, but they believe that many environmental factors can trigger the development of inflammation of vessels of different caliber. For different types of CB established a leading influence certain factors, but the main importance are the various infectious agents: in the first place - viral (hepatitis C virus (HAV, HBV, HCV), cytomegalovirus (CMV), Epstein-Barr virus (EBV), herpes simplex (NegSV), pespiratorno syncytial (RCV), parvovirus B19 (RUV19), human immunodeficiency virus (NSU in picornavirus (EN)). Yes, in the majority of patients with nodular polyarteritis detect serological and clinical signs of infection, pre-defined with hepatitis B (40-90% of cases) there is strong evidence that the hepatitis C virus plays an important role in the development of crioglobulinemic vasculitis - essential mixed cryoglobulinemia discussed "etiological significance of other viruses in SW development..

Intravenous administration of monoclonal immunoglobulin treatment time CB significantly extended in recent years. It is especially effective for Kawasaki disease, hemorrhagic vasculitis. In therapy, CB use different protein preparations, particularly from placentas packaged blood and recombinant origin.

Persistation infectious agent can promote the progress of vasculitis, because in many cases, immunosuppressive therapy supports the development of intercurrent infection. Possible

further viral replication and progress of destruction of target cells, because when virusasotsi IAOD us SW offered treatment plasmapheresis combined with antiviral therapy. Antiviral drugs inhibit the replication of HBV, HBC, CMV, EBV and contribute conversion. As anti-viral agents and use-IFN, vidorabin lamivudine.

Materials for students' self-directed work

A. Tests to verify the initial level of knowledge:

1. The major immunoglobulins in the secretions from upper respiratory tract of healthy human are:

1. IgM
2. IgG
3. IgA
4. IgE
5. IgD

2. The main features of a cellular immune deficiency:

1. Intracellular pathogen
2. Elementary
3. Extracellular bacteria
4. Fungal generalizing flora

3. The main features of immune humoral immunity:

- a) diseases caused by opportunistic infections
- b) Infections caused by extracellular bacteria
- c) Frequent cancer pathology
- d).Sistemic mycoses

4. Which cells are antigenpresent their cells:

1. Neytrofitlies
2. Dendritnye cells
3. Monocities
4. Eozinofilies

5. Which of the following statements about the T-lymphocytes is wrong:

1. There are several T lymphocyte subpopulations, which perform individual specific functions

2. T lymphocyte capable of antibody production only in severe infections

3. Helper T are the main regulatory cells of the immune system

4. T-dependent immune otve those products immunoglobulino goes through B-lymphocytes.

6. Should I be vaccinated against diphtheria, if the patient had this infection?

1. Yes;
2. No;
3. c depending on the nature of the disease;
4. through suffered after 10 years of disease.

7. The Signs of immunodeficiency IgG and of Ig the M:

1. Diseases caused by opportunist infections
2. Infections caused by extracellular bacteria
3. Often cancer pathology
4. Sistemic mycoses

8. So Respiratory patients combined immunodeficiency in typical cases is not:

1. Prolonged cough;
2. Symptoms of interstitial lung disease on radiographs;
3. Signs of pneumonia on x-ray;
4. Hemoptysis.

9. Engineer (3 years of work on the contract in Africa) in the last 2 g. feeling himself satisfactorily, hospitalized in the pulmonology department with complaints of general weakness, night sweats, dry, non-productive cough. In the analysis of blood found lymphopenia. What is necessary to conduct primary laboratory studies ?

- a) a test for renewal of district and trosin his tetrazolium I;
- b) determining the activity of the complement;
- c) determining fanotsitarnogo index;
- g) search for antigens to AIDS.

10. The patient, 58 for, during a course of chemotherapy for cancer, there was a sore throat. The examination of the throat on the tonsils, mucosa revealed areas of necrosis. Many carious teeth. The blood on the background of leukopenia suite completely absent neutrophilic granulocytes. Leukocytes are presented primarily lymphocytes and monocytes. On which of the listed diseases should be thinking?

1. lacunar angina
2. syphilitic angina
3. Vincent's infection-Simanovski
4. angina agranulotsitarnoy
5. diphtheria

11. Patient, which was held for 5 courses of treatment because back actions about focal tubercule of light, applied to the TB dispensary for deregistration. At follow-up examination is set lymphadenopathy, before a positive Mantoux test became negative. Think about that:

- A. Here the patient is cured of tuberculosis;
- B. kept active tubercular process;
- C. the patient shows a BCG vaccination;
- D. immunodeficiency occurs (possibly AIDS).

12. In women over 22, there were weakness, increasing paleness, fever, hemorrhages in the skin and mucous membranes. In bone marrow - inhibition of all germs hematopoiesis. Diagnose aplastic anemia, subacute. What is the leading method of treatment is shown in this disease?

- A Corticosteroids + cytostatics
- B Cytostatics + bone marrow transplant
- C Antibiotics + transfusion
- D Corticosteroids + bone marrow transplant
- E Splenectomy + transfusion

13. The patient 43 years after several days of concern, anorexia, subfebrile, appeared jaundice, hepatosplenomegaly, dark urine and yellow discoloration of feces. At the age of '41 were transfusion. What is the most likely diagnosis?

- A Atresia of biliary tract
- B Hemolytic anemia
- C Viral Hepatitis B
- D Viral hepatitis A
- E Horse jaundice

B. The final level of knowledge

1. infectious lesions often occur in immunodeficiency in system:
A viral etiology
V. caused by protozoa
C. The bacterial etiology
D fungal origin
E. caused by chlamydia
2. The human immunodeficiency virus (HIV) is the causative agent of atypical directly pneumonia:
B yes;
C no.
3. Which of the following characteristics are generally not a character or combined immunodeficiency?
 1. Increase of body weight;
 2. The loss of body weight;
 3. Recurrent bacterial infections;
 4. Complication after administration of live vaccines
5. affects primarily negative stress on the immune system?
T 1.urgent reaction link immune system;
T 2.stimulate reaction link immune system;
3. Urgent chsin of immune system;
4.stimulative chain of immune system.
- 6). The main symptoms of deficiency early complement components:
 1. Diseases caused by opportunity infections
 - 2.Immunocomplex disease
 - 3.Infectiond caused by extracellular bacteria
 4. Frequent cancer pathology
- 7).Pr and selective immunosuppression Ig A says:
 - 1.High level components of the complement system
 - 2.Low level components of the complement system
 - 3.Normalny level components of the complement system
 - 4.Lowing functional state of phagocytes
8. The disappearance of antibodies from the blood serum after the impact of organism person maximum permissible 's physical and psycho-emotional stress due to:
 - a) diffusion of immunoglobulins in the tissue;
 - b) sorption of immunoglobulins on the formed blood elements and their rapid release from the body.
 - c) burning in the Krebs cycle
9. Women and 24 years went to the doctor in connection with the long-term fever, night sweating. Over the past three months she lost 7 kg. I had the demon decent sex. Objective: increase in all groups of lymph nodes, Banti's syndrome. In the blood: Lake. - $2.2 \times 10^9 / L$. What diseases must be suspect ?
 - A Infectious mononucleosis
 - B limfogranulomatoz
 - C Tuberculosis

D HIV infection

E hroniosepsis

10. The patient 17 for, after a stay in the Crimea were severe pain in the large joints of the hands, in the heart, palpitations, swelling of the feet. Body temperature - 38,8C. Pale skin, over the affected joints - erythematous rash. Erosion on the border of the red portion of the lips, alopecia hair loss. Pleural rub under the left shoulder blade. Heart sounds muffled. Poole with - 124 beats / min, blood pressure - 160/100 mm. Hemoglobin - 92 units, ESR - 66 mm / Time. CRP - +++. Positive reaction Wasserman. Which of the additional studies will be most informative for the disease?

A The titer of the SLA - About

B Reaction RI T and P and P

C Determination of rheumatoid factor

D Antinuclear antititela

E A biopsy of the skin and muscle

11. In consultation with a referral immunologist, which is suffering for 15 years, an infectious-dependent bronchial asthma, with a view to assigning them immune register therapy. Immunological examination, the patient showed a reduction in CD -marker of T-lymphocytes. How the drug most intact feature start and immune projection of ?

A Gamma globulin

B interferon

C Imunofan

D Cyclosporine A

E D and drokortizon

12. Patient O., in 19 g. It lags behind in physical development, there is a periodic yellowing of the skin. On-no: Spleen 16h12h10 cm holetsistol and so on and az, skin ulcer n / 3 left shin. In blood - Er.3,0h1012 / 1, Hb 90 g / 1, KP 1.0 microspherocytosis, reticulocytosis. Bilirubin blood 56mkmol / 1, indirect - 38 u mol / L. Elect treatment:

A Omentosplenopexia I

B spleen transplantation

C Pulmonary embolism

D Splenectomy

13. In the girls 18 over about a year ago appeared irritability and tearfulness. At the same time determined diffusely enlarged thyroid gland II degree. State seen as a manifestation of the pubertal period. Treatment not conducted. Irritability is gradually replaced by complete apathy. There puffiness of the face, pasty soft tissue, bradycardia, constipation. Appeared waxy pallor of the skin with a hint of the density of the prostate. what the disease must be assumed?

A Subacute thyroiditis

B Diffuse toxic goiter

C Autoimmune thyroiditis

D Thyroid Cancer

E Puberty youthful basophilism

Tasks for self-control:

Tasks 1.

Patient M., 4 years. Often ill acute respiratory diseases that end, as a rule, purulent bronchitis, otitis. Suffered pneumonia (2, 6 IU with. And 3 years 8 months.). From history: up to 6 IU with. not sick. For the first time I had GRVI 6 IU with age. At 1 year, of ate in kindergarten, in cell dependence. It has GRVI, and in terms of - bronchitis (with bronchospasm).

Immunogramm: A 6,4h109 / l; B 1%; E 8%; P / I 10%; C / I of 50%; Lim, 26%; Mon 5%; 60% T; V1 11%; 42% Ti; 18% T; Th / Ts 2.3. General sputum analysis: crude, the white blood cells to the entire field of view.

Question: Why is the child's illness? What additional and immunological RP G examination is necessary to carry out?

The answer is: the boy sign it immunodeficiency but mainly by humoral type. Req of them to continue and immunological survey MANDATORY a certain immunoglobulin in, indicators phagocytosis, and CD marker on in.

Tasks 2.

Patient D., 52 the year. Gets chemical paragraph of operation and cr pulm. In the course of treatment found: Er. 2: June 1012 / L, 111 g Hb / l, KP 0.84; LA 2.3 x 109 / L, BS 2%, 5% E., P. 1% C. 48% Lim.40% M 4%, ESR 40 mm T. 7%, V1. 35% About 58%.

Question: Tactics doctor.

- a) continue chemotherapy;
- b) to stop the chemotherapy;
- c) continue chemotherapy with concurrent use and immunostimulator on in?

Answer: by the possibility to stop chemotherapy. Therapy and including lymphoma - and leukopoeza (imunofan, likopid and others.)

Task 3.

Patient P., 18 years hit the narkological department for treatment of drug addicts and. On against 1 year and 8. It makes injection drugs. During the review physician discovered deficit scales (grown T 174 cm, weight 51 kg), an increase in all groups limfatic nodes liver and spleen. Signs of a relapse iviruses herpes infection. It has chronic diarrhea. On against 6m. three suffered pneumonia, is now worried about a bad cough. Clinical and immunological: Ig G 24 g / l; Ig A 10 g / l; Air 3,8h1012 / L, L3, 3h109 / l; B1%; E 3%; P / I 4%; C / I of 51%; Mon 8%; Lim, 33%; T (CD52) 40%; Th (CD4) 9%; Tc (CD8) 14%; Tx: T - 0.6.

Q: What disease is the patient? Tactics doctor.

1. Already existing assays to calculate the absolute level of helper cells.
2. Continue to live examination of the patient.

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Methodical guidelines composed by

Vakhnenko A.V.