

## IMMUNOLOGY

**1. We got an agglutinating serum after immunization of the rabbit with bacteria, which have antigen structure 1, 3, 4. How can we get monoreceptor serum against antigen 3, using our serum?**

+ By adsorption of agglutinins by antigens 1, 4

By precipitation reaction

By neutralization reaction

By immobilization reaction

By opsonization reaction

**2. New material for heart valves replacement found. How can we find out if this material is antigenic?**

+ We should immunize laboratory animals

Put agglutination reaction

Put precipitation reaction

Put reaction of binding complement

Put neutralization reaction

**3. The medicine which accelerates regenerative processes of the wound of mucosal membrane was prescribed to the patient. The medicine is thermostable protein, which is contained in tears, saliva, breast milk, and as can be found in new-laid chicken eggs. It is a factor of natural organism resistance. What is it?**

Complement

Interferon

+ Lysozyme

Interleukin

Imanin

**4. What is the chemical nature of endotoxin?**

Protein

Lipid

Peptidoglycane

Cytoplasmic membrane

+ Lipopolysaccharide

**5. What cells perform the main role in clinical manifestation of immediate hypersensitivity?**

+ B-lymphocytes

T-suppressors

T-helpers

T<sub>HDT</sub>

T-killers

**6. What class of immunoglobulins is concerned with atopic allergic reactions?**

Ig G

Ig M

Ig A

+ Ig E

Ig D

**7. What is exotoxin by chemical nature?**

Lipopolysaccharide

Lipid

+ Protein

Peptidoglycane

Cytoplasmic membrane

**8. What answer characterizes artificial passive immunity?**

Immunization with BCG

Immunization with tetanus anatoxin

Placental transplantation of antibodies to the fetus

Formation of antibodies in result of cholera convalescence

+ Injection of antitetanus serum

**9. Piece of donor skin was transplanted to the patient who had large burn. In 4-5 days the piece of skin had engrafted, but on the 8<sup>th</sup> day the transplant swelled, its color changed and on the 11<sup>th</sup> day it started to reject. What cells played role in rejection of transplant?**

Erythrocytes  
Basophiles  
Eosinophils  
+ T-lymphocytes  
B-lymphocytes

**10. For the treatment of pneumonia 5 years old child was injected with penicillin. In 40 minutes child had urticaria on its body, it started to itch. What is the mechanism of allergy?**

Cytotoxic reaction  
Arthus reaction  
Cell immune response  
+ Anaphylactic reaction

**11. Seller sold sausage, named "Pork sausage". Buyer suspected that the sausage was made of horse. What reaction can be used to identify the product?**

+ Precipitation reaction  
CFT  
Agglutination reaction  
Immunofluorescence  
PIHAT (reaction of indirect hemagglutination)

**12. At the estimation of the immune status of the patient with chronic pyoderma the decrease of absorptive and digestive function of phagocytes, neutrophils and monocytes was established. What medicine should be prescribed for recovering of functions of these cells?**

Lysozyme  
Antibiotic  
Glucocorticoids  
+ Interferon  
Thymus hormones

**13. Artificial active immunity is obtained after injection of:**

Serum  
+ Vaccine  
Anatoxin  
Antibiotics  
Immunoglobulin

**14. T-lymphocyte produces:**

Interleukin-1  
Immunoglobulin  
Alpha-interferon  
Beta-interferon  
+ Interleukin-2

**15. Resistance to infection during 2 weeks is obtained after:**

Having illness  
Injection of inactivated vaccine  
Injection of homologous immune serum  
+ Injection of heterologous immune serum  
Injection of attenuated vaccine

**16. Recidive is:**

Re-infection with the same causative agent after the recover  
Addition of infection, caused by conditionally pathogenic microflora  
+ Illness, which is caused by the agent, which is left in the organism  
Infection by the few agents at the same time  
Illness, which is typical for the location

**17. What class of immunoglobulins play role in natural passive immunity?**

Ig A  
+ Ig G  
Ig M  
Ig D  
Ig E

**18. Specific immune cell response is provided mainly by:**

Phagocytes  
+ T-lymphocytes  
Complement  
Immunoglobulin  
Natural killers

**19. What enzymes, which are produced by microorganisms, provide invasion and spread of bacteria in tissues?**

DNA-ase, penicillinase  
Cystinase, urease  
Collagenase, coagulase  
Hemolysin, leukocidin  
+ Hyaluronidase, neuraminidase

**20. When antigen invades into the organism, it reacts by the synthesis of antibodies. What class of immunoglobulin passes through the placenta and provides the development of natural passive immunity of the newborn?**

Ig A  
+ Ig G  
Ig M  
Ig D  
Ig E

**21. Some classes of immunoglobulins are able to activate components of complement. What are the classes?**

Ig A, Ig G  
Ig D, Ig A  
Ig M, Ig E  
+ Ig M, Ig G  
Ig E, Ig D

**22. Synthesis of antibodies takes a great place in the immune response of the organism. What kind of cell interaction is necessary for its synthesis?**

Macrophages, T-helpers, B-lymphocytes  
Dendrite cells, T-helpers, B-lymphocytes  
Macrophages, T-effectors, B-lymphocytes  
+ Antigen presenting cells, T-helpers, B-lymphocytes  
Langerhans cells, T-effectors, B-lymphocytes

**23. What are the quantitative methods of definition of T-lymphocytes?**

Lysozyme  
Antibodies  
BTCL on PHA  
+ E-PFC  
BTCL on LPS

**24. What are the methods of qualitative estimation of T-lymphocytes activity?**

BTCL on LPS  
+BTCL on PHA  
Antibodies  
Lysozyme  
M-RFC

**25. What are the quantitative methods of definition of B-lymphocytes?**

+M-RFC  
E-RFC  
BTCL on LPS  
BTCL on PHA  
Immunoglobulins of main classes

**26. What are the qualitative methods of definition of B-lymphocytes?**

E-RFC  
BTCL on LPS

BTLR on PHA

+Immunoglobulins of main classes

M-RFC

**27. What are the methods of estimation of adsorptive activity of phagocytes?**

+Phagocytory index

E-RFC

M-RFC

Lysozyme

EAC-RFC

**28. What are the methods of estimation of metabolic activity of the cell?**

+ NBT-test (test with nitro blue tetrasolium)

Skin tests

BTLR on PHA

BTLR on LPS

Lysozyme

**29. What are killer-cells?**

Mastocytes

Basophils

Thrombocytes

+ NK-cells

Erythrocytes

**30. What cells belong to mononuclear phagocytes?**

Neutrophils

Erythrocytes

Thrombocytes

Lymphocytes

+Macrophages

**31. What cells do not belong to immunocompetent?**

Lymphocytes

Monocytes

+ Plasmatic cells

Organ fixed macrophages

B- lymphocytes

**32. Plasmatic cells synthesize specific antibodies for the specific antigen. The quantity of plasmatic cells increases after the injection of the antigen. What blood cells provide the increase of plasmatic cells quantity?**

Monocytes

Eosinophils

Basophils

T-lymphocytes

+ B-lymphocytes

**33. There are 5 classes of immunoglobulins in blood: A, E, D, M, G. Which class of immunoglobulins have the highest concentration?**

Ig A

+ Ig G

Ig M

Ig D

Ig E

**34. The vaccination of a child results in reaction of humoral immune response. What are the main cells of spleen, which participate immune response?**

T-lymphocytes-killers, T-helpers

T-lymphocytes-suppressors, T-helpers, macrophages

B-lymphocytes

+ Macrophages, T-helpers, B-lymphocytes

**35. Bacteriologist picked out stock, which he partially identified by morphological, tinctorial, cultural and biochemical properties. For the final identification he used adsorbed agglutinating type-specific serum. What agglutinative reaction did the bacteriologist put for the final agent identification?**

- + Agglutination reaction on glass
- Reaction of hemagglutination
- Reaction of passive hemagglutination
- Hemagglutination reaction (by Widal)
- Hemagglutination reaction (by Gruber)

**36. In 24 hours after painting eye-lashes with water-proof mascara with ursol young lady had hyperemia, edema, itch of the skin of eyelids. Anamnesis showed that she was using only this mascara for 2 years. Doctor put diagnosis "allergic contact dermatitis". What type of reaction does this pathology belong to?**

- Immediate type hypersensitivity
- + Delayed type hypersensitivity
- Immunocompetent allergic reaction
- Atopic allergic reaction
- Cytopathic allergic reaction

**37. What is the central organ of the immune system?**

- Spleen
- + Thymus
- Lymphatic nodes
- Palatine tonsil
- Appendix

**38. Patient passed a course of medical treatment with cyclosporine after the kidney transplantation. The treatment resulted in generalized candidosis. Laboratory examination showed: Leukocyte amount in peripheral blood –  $10^9$  g/l, relative T-lymphocyte content – 38%, B-lymphocytes- 11%. After recovery the patient started having diarrhea, caused by E. coli. Further patient had frequent relapses of herpes, frequent acute respiratory illnesses. Skin allergic tuberculin test is negative, the amount of gamma-globulin in blood is twice decreased. What can we suspect?**

- Congenital T-cell immunodeficiency
- Hypogammaglobulinemia
- Agammaglobulinemia
- Congenital combined (total) immunodeficiency
- + Acquired immunodeficiency

**39. In most of cases newborns are immune against "infant" infections (measles, pertussis, scarlet fever). What class of immunoglobulins can pass through placenta and provide natural passive immunity?**

- Ig M
- + Ig G
- Ig E
- Ig A
- Ig D

**40. Serological laboratory informed about presence of standard diagnostic antigens. What for should doctor send serums for the examination to the laboratory?**

- For putting RBC for determination of antibodies
- For refinement of diagnosis of infectious disease in first day of illness
- + For refinement of diagnosis after the results of tests of definition of specific antibodies
- For the estimation of immune status by the antibodies level
- For the differential diagnostics of infectious and allergic states.

**41. Patient has clinical manifestation of allergic reaction. The level of Ig E in his blood is increased in 4 times. What preparation can we use for a treating purpose?**

- Immunomodulators, which have effect on cell immunity
- Medicine, which increases phagocytosis of bacterial antigens
- Immunodepressors, which decreases the level of T-lymphocytes
- + Medicine, which stabilizes the membrane of tissue basophils
- Adsorbents of immune complexes

**42. Patient has undiagnosed diagnosis. Immunological examination showed the increased level of Ig A. What can this feature of humoral immune response say?**

- Destructive processes in the organism
- Chronic bacterial infection
- Autoimmune sickness

Acute bacterial infection

+ Pathological process, which runs on the mucosal membrane

**43. The main role in pathogenesis of some infections have protein toxins. What is the specificity of its action?**

The mitochondria blockage

The increased permeability of internal organs cell membranes

+ Selective fixation of the toxin on the receptors of cells

Disfunction of DNA synthesis

The ability to destroy cell membranes

**44. Septicemia – is the stage of the infectious disease, when microorganism is:**

Secreted with bile

Can be found in lymph

Is transported by the blood

+ Multiplies in blood

Excreted with defecation

**45. What component of the bacteria can induce endotoxic shock?**

Capsule polysaccharide

H-antigen

rRNA

Lecytinase

+ Lipid A

**46. Essentially in allergy of anaphylactic type is the formation of immune complexes on:**

Endotheliocytes

Eosinophils

Thrombocytes

+ Tissue basophils

Macrophages

**47. The result of immunological examination showed hypogammaglobulinemia. What cells of immune system produce immunoglobulins?**

CD8<sup>+</sup>-cells

Plasmoblasts

CD4<sup>+</sup>-cells

+ Plasmocytes

NK-cells

**48. There are different disfunctions of B-lymphocytes system in immunodeficiency. What is the main link in pathogenesis of it?**

+ Disorder in antibody synthesis

The decrease of delayed type hypersensitivity

Disfunction of immunological reactions of cell type

The decrease of antitumoral immunity

Transplant rejection ability loss

**49. Worker, who is working at the chemical factory for 15 years has contact dermatitis (hyperemia, skin rash, puffiness) of upper limbs, neck and face. What group does this illness belong to?**

Immediate type allergic reaction

B-system immunodeficiency

+ Delayed type allergic reaction

Late gammaglobulinemia

T-system immunodeficiency

**50. There are 5 classes of immunoglobulins in blood. One of it has the largest amount – 8 to 16 g/l. Insufficient synthesis of it shows clinical signs of immunodeficiency. What class of immunoglobulins is this?**

Ig D

Ig E

Ig A

+ Ig G

Ig M

**51. Rejection of organ occurred after kidney transplantation. It was established that rejection was caused by the reaction of specific immunity. What was the direct factor of the rejection?**

- T-lymphocytes-helpers
- + T-lymphocytes-cytotoxic
- Monocytes
- B-lymphocytes
- T-lymphocytes-suppressors

**52. A child, who was recovered from measles, has pleuropneumonia, which is caused by conditionally pathogenic *S. epidermidis*. What is the form of infection?**

- + Secondary infection
- Superinfection
- Re-infection
- Persisting infection
- Hospital infection

**53. Vaccines are used for making active immunity. What vaccine is live attenuated bacteria?**

- TAB vaccine
- APDT vaccine
- Solk's vaccine
- +BCG vaccine
- Anti hepatitis A vaccine

**54. 5 years old child has Butons disease, which manifests in severe clinical course of bacterial infections, absence of B-lymphocytes and plasmatic cells. What changes in immunoglobulin content in blood will be typical for this illness?**

- Increase of Ig D, Ig E
- Decrease of Ig D, Ig E
- Increase of Ig A, Ig M
- + Decrease of Ig A, Ig M
- No changes

**1. Immunoglobulins play the main role in humoral immune response. Choose the correct statement for Ig A.**

- + Only Ig G has higher concentration
- Has the highest concentration over all immunoglobulins classes
- Has the largest molecule in comparing to other immunoglobulin classes
- It can be produces in low concentrations in digestive tract, respiratory and urogenital ways
- Its concentration in serum is low

**2. What classes of immunoglobulins will start to synthesize at the same time after the agent invasion, so that concentration of one of it will rise first, then it will rapidly decrease?**

- + Ig M and Ig G
- Ig M and Ig D
- Ig G and Ig D
- Ig A and Ig D
- Ig A and Ig G

**3. Ig E plays the main role in anaphylactic and atopic reactions. What are the features of it?**

- + Low concentration in blood serum
- It is localized in skin
- Activates complement system
- High concentration in blood serum
- Passes through placenta

**4. Anaphylatoxins are important in the development of inflammatory process. Name the anaphylatoxins:**

- + Complement substances (C3a, C5a)
- Substances, which induce anaphylatoxy
- Toxins of vegetable nature
- Substances, which are secreted by mastocytes
- Interleukins 1, 4, 10

**5. What plays the main role in delayed type hypersensitivity mechanism?**

- + T-helpers 1 and lymphokins

B-lymphocytes and NK-cells  
Basophils and mastocytes  
Macrophages and B-lymphocytes  
Histamine and serotonin

**6. Rejection of transplant develops after the transplantation of isograft. Name the main pathogenic factors of rejection reaction:**

+ T- helpers 1, lymphokins, antibodies  
B-lymphocytes, antibodies, NK-cells  
T-helpers 2, T-effectors, macrophages  
T-effectors, complement, antibodies  
Macrophages, microphages, NK-cells

**7. Pathogenesis of serum sickness, systemic lupus erythematosus, autoimmune processes is connected with the formation of immune complexes – allergic reactions of III type. Long-term persistence of immune complexes in the organism may cause;**

+ Complement system activation by classic way  
Complement system activation by alternate way  
Phagocytosis system activation  
Coagulative system activation  
Interferon system activation

**8. Patient has alimentary pseudoallergic reaction. Name the main features of pseudoallergy.**

+ Absence of changes in immunoregulatory cells system  
Increase of immunoregulatory index  
Decrease of immunoregulatory index  
Parallel decrease of T-helpers and T-suppressors  
Parallel increase of T-helpers and T-suppressors

**9. Patient should do skin tests with standard allergens. The usage of what medicine should be stopped to obtain accurate results?**

+ Glucocorticoids, antihistamine preparations  
Antibiotics  
Sympathomimetics  
Hypotensive drugs  
Non-steroid antiinflammatory drugs

**10. 10 years old patient has helminthic invasion. What class of immunoglobulins dominates?**

+ Ig E, Ig M  
Ig M, Ig G  
Ig A, Ig D  
Ig A, Ig M  
Ig G, Ig A

**11. Patient has autoimmune thyroiditis. What immunological test should be performed to confirm the diagnosis?**

+ Definition of antibodies for thyroid and microsomal antigen of thyroid gland  
Definition of antibodies for DNA  
Definition of antibodies for RNA  
Definition of antibodies for antigens of salivary and thyroid gland  
Definition of antibodies for erythrocytes and thrombocytes

**12. What mechanism of immunological damage is typical for the reaction, which is induced by Ig E?**

+ Release of mediators of the immediate reaction  
Fixation of the antigen on the cellular membrane  
Activative effect of immune complexes on complement components  
Lymphokin effect on target-cells  
Antigen-antibody reaction with further agglutination

**13. 60 years old patient has Goodpasture's syndrome. What antigen caused immune response?**

+ Collagen of basis membrane of kidneys glomerules  
Fc fragment of Ig G  
Duplex DNA  
Parietal cells of stomach



Erythrocytes

**14. Inherited angioneurotic edema as the most severe clinical manifestation of dysfunction of complement system is connected with insufficiency of:**

+ Inhibitor C1

Complement component C2

Complement component C4

Complement component C3

Complement component C5

**15. Patient has local allergic reaction in few minutes after bee sting. What type of allergic reaction was described?**

+ Anaphylactic

Cytotoxic

Immune complexes

Delayed-type

Idiotypic-anti-idiotypic

**16. Patient's serum contains increased quantity of complement fractions. What illnesses is it typical for?**

+ Thyroiditis, rheumatoid arthritis

Systemic lupus erythematosus with kidney damage

Combined immunodeficiency

Primary immunodeficiency

Secondary immunodeficiency

**17. Patient has dysfunction of cell immunity, decrease of T-cells function, ability to develop delayed type hypersensitivity reaction is absent. What type of immune insufficiency takes place?**

+ Combined immunodeficiency

Cell link of immunity is insufficient

Humoral link of immunity is insufficient

Complement system insufficiency

Phagocytosis insufficiency

**18. A man, who lived in endemic region was ill with 3-day malaria. After moving to other place in 1,5 year, he was ill with malaria again. What form of the infection is it?**

+ Recurrence

Re-infection

Superinfection

Persistent infection

Secondary infection

**19. 2 years old child is ill with chronic often reversible pneumonia and colitis with severe diarrhea. He has decreased level of immunoglobulins of all classes. The amount of lymphocytes in peripheral blood is less than 1000 in 1 ml. Tuberculin test is negative. What is the diagnosis?**

+ Primary immunodeficiency with defect of T and B lymphocytes

Primary immunodeficiency with defect of B-lymphocytes

Primary immunodeficiency with defect of T-lymphocytes

HIV-infection

Ehrlich-Barr infection

**20. 1 year old child has agammaglobulinemia "swiss type", accompanied by the absence of cell immune reactions. What treatment is used to prolongate his life?**

+ Thymus and sternum transplantation from the born dead child

Constant injections of immunoglobulins from donor.

Treatment with recombinant interleukin 2

Transplantation of parent's dendritic cells with previous injections of antibodies for antigens of histocompatibility of the patient

Thymus transplantation

**21. What type of immunosuppressive therapy contradicts to the restoration of immune reactivity of the patient after cessation of therapy?**

+ Injection of corticosteroids and antilymphocytic serum

Injection of metabolites of purine, pyrimidine and protein synthesis of imuran or methotrexate type

Alkylating agents, cyclophosphamide type

Antibiotics, chloramphenicol type

Total radiation influence

**22. Patient, who got a course of penicillin therapy, has a decrease amount of erythrocytes – anemia. Doctor put diagnosis “drug allergy for penicillin”. What type of allergic reaction was shown?**

+ Complement cytolysis

Immune complexes reaction

Atopy

Antibody cytolysis

Delayed type hypersensitivity

**23. Nurse took blood from the patient to put immunologic reaction of Coomb’s. What is this reaction used for?**

+ Hemolytic disease

Ulcer

Hypertension

Gout

Spinal osteochondrosis

**24. The assessment of functional state of lymphocytes is a necessary condition for estimation of patient’s immune status. What method can display immune status?**

+All methods

Leukocytes migration inhibition reaction

Lymphocytes blasttransformation reaction

Lymphocytes cytotoxic activity reaction

Phagocytory activity index

**25. Patient has clinical signs of immunodeficient state by cellular type. After examination doctor put diagnosis - lymphogranulomatosis, Hodgkin’s disease. Name main symptoms of the disease:**

+ Structure disorder of lymphatic nodes with predomination of T-lymphocytes

Specific early symptoms

Infectious complications are not typical

Generalized beginning

Large amount of B-lymphocytes in blood serum

**26. Monoclonal antibodies are widely used in immunological diagnostics. What is the purpose?**

+ Diagnostics of specific antigens

For the treatment of infectious diseases

For the prophylaxis of infectious diseases

For obtaining non-specific serums

For hybrid stabilization

**27. What method is used for the quantitative definition and correlation of different types of lymphocytes?**

+ Reactions with the usage of monogeneous antibodies

Reactions of T-lymphocytes blasttransformation

Reactions of B-lymphocytes blasttransformation

Cytotoxic activity of lymphocytes

Immunoblotting

**28. Young woman has contact dermatitis after the usage of washing powder. What methods did doctor use for the definition of allergy cause?**

+BTLR (lymphocytes blasttransformation reaction) with the specific allergen

Definition of Ig G, M, A in blood serum

Definition of Ig E in blood serum

E-RFC reaction

Definition of phagocytory activity and phagocytory index

**29. Patient has malignant stomach tumor. Blood test showed decrease of relative quantity of T-lymphocytes in peripheral blood. What does it testify?**

+ Disorder of T-cell link of immunity

Virus reproduction in neurons, microglial cells of the brain

Virus persistance

Hypoimmunoglobuliemia

Immediate type hypersensitivity reaction disorder

**30. Complex antigen+antibody+complement was formed in result of binding complement reaction. What component should we use to detect the formation of this complex?**

+ Hemolytic system

Hemolytic serum

Diagnosticum

Antitoxic serum

Physiological solution

**31. You have: 1) brucellar skin vaccine. 2) leptospirosis vaccine. 3) BCG vaccine. 4) APDT vaccine. 5) adsorbed tetanus anatoxin. What immunity do these preparations provide?**

+ Artificial active immunity

Infection immunity

Antibacterial immunity

Artificial passive immunity

Antitoxic immunity

**32. Patient often has respiratory opportunistic diseases. Examination of saliva showed a disorder of specific link of local immunity. Lack of what component was established?**

+ Secretory immunoglobulins class A (sIg A)

Lysozyme

Immunoglobulins class E (Ig E)

Interferon  $\gamma$  ( $\gamma$ -IFN)

Complement

**33. Results of immunological examination of the newborn: the percentage of rosettes in the reaction of specific rosette-formation – 25%, blasttransformation reaction with phytohemagglutinin – 0%, blasttransformation reaction with pokeweed mitogen – 40%, concentration of immunoglobulins in serum insignificantly decreased. What organ of immune system does not functioning?**

+ Thymus

Spleen

Liver

Marrow

Tonsils

**34. There is a decrease of absolute and relative quantity of circulative  $CD4^+$ -lymphocytes in patient's blood. What examination gave these statements?**

+ Reaction with marked homogeneous antibodies

Reaction of rosette formation with sheep erythrocytes

Opsonization reaction

Reaction of blasttransformation with phytohemagglutinin

Reaction of blasttransformation with lipopolysaccharide

**35. Sensibilization of the organism by the allergen of poplar wool was established to the patient with bronchial asthma. What factor of immune system plays the main role in the development of these immunopathological state?**

+ Ig E

Ig D

Ig M

Sensitized T-lymphocytes

Ig G

**36. Young nurse complains on reddening and swelling of skin on hands, which appear in 1-2 days after contacting with analgin solution after performing injections to the patients. Pathological changes appear only in places of contact with injectible solution. What factor of immune system plays the main role in the development of this immunopathological state?**

+ Sensitized T-lymphocytes

Ig E

Ig D

Ig G

Ig M

**37. Patient with chronic renal insufficiency was recommended to perform kidney transplantation. He is expecting for the transplant organ now. What antigens should be donor organ checked for?**

- + HLA system antigens
- Rh system antigens
- HBs, HBc, Hbe antigens
- ABO system antigens
- O-, H-, K- antigens

**38. Doctor suspected that the child have congenital disfunction of immune system. Immunoogical examination showed considerable decrease level of cells, which form rosettes with sheep's erythrocytes. Disfunction of the immune system is conditioned by:**

- + Decrease level of T-lymphocytes
- Decrease level of B-lymphocytes
- Decrease level of natural killers
- Decrease level of phagocytes
- Decrease level of cells which produce antibodies

**39. Doctor suspected that the child have congenital agammaglobulinemia. It is necessary to examine the level of immunoglobulins in blood serum. It should be considered that the synthesis of these immunoglobulins begins:**

- + On 3<sup>rd</sup> month
- On 5-6 month
- On 2<sup>nd</sup> week
- Immediately after birth
- In antenatal period

**40. Patient is suspected to be ill with infectious disease. Blood test showed that blood contains antibodies to the probable antigen, but their titer is not enough to confirm the diagnosis. What will be the correct decision of the doctor?**

- + Repeat the titer definition in 10 days
- Preliminary diagnosis is not confirmed
- Use more sensitive reaction
- Put serological test with other antigens
- Check for possible technical mistakes, which can occur during the test

**41. Patient was passing through desintoxicative therapy. He was injected with drug-blood substitute for repeated times. On 8<sup>th</sup> day after the last drug injection the patient started to have skin rash, high temperature, proteinuria. What is the main mechanism of development of these symptoms?**

- + Formation of immune complexes
- Allergic reaction type I
- Cytotoxic reactions
- Hypersensitivity, which is caused by T-lymphocytes
- Atopic reactions

**42. What refers to cell factors of immune (specific) protection?**

- + Cytotoxic T- lymphocytes
- Macrophages
- Interferon
- Natural killers
- B-lymphocytes

**43. What is hapten?**

- + Defective antigen
- Molecules, which induce synthesis of immunoglobulins
- Substances, which cause allergic reactions by the type of HDT
- Substances, which activate phagocytosis
- Cells, which synthesize interferon

**44. What features of immunoglobulins define the opportunity of creation of antiidiotypical vaccines?**

- + Immunogenicity – the ability to induce antibody synthesis
- Allergic properties
- Specific connection with specific antigens
- The ability to neutralize specific antigens
- Opsonizing properties

**45. Antigens of histocompatibility complex of 1 class are represented on the surface of:**

+ All nucleus-containing cells  
Macrophages and B-lymphocytes  
Erythroblasts  
T-helpers  
Cells of the embryonal liver

**1. Patient has clinical manifestation of the primary immunodeficiency. Doctor established a disfunction of antigenpresentation to immunocompetent cells. The quantity of T- and B- lymphocytes and their functional activity are not changed. Disfunction of which cells was the reason of the primary immunodeficiency?**

+ Macrophages and monocytes  
T-lymphocytes, B-lymphocytes  
NK-cells  
Fibroblasts, T-lymphocytes, B-lymphocytes  
T-lymphocytes

**2. Patient complains on frequent infections, including fungous. Doctor suspected immunodeficiency and sent him for immunological examination. On electrophoresis was established that level and correlation of antibodies are almost normal. What examination should the patient do to define the quantity of T-lymphocytes?**

+E-RFC  
M-RFC  
EAC-RFC  
BTLR on PHA  
BTLR on LPS

**3. 29 years old patient has secondary immunodeficiency by T-cell type. Immunologic examination showed that the quantity of T-lymphocytes is normal. What test was used for the estimation of functional activity of T-lymphocytes?**

+BTLR on PHA  
BTLR on LPS  
E-RFC  
M-RFC  
EAC-RFC

**4. Anually patient complains on conjunctivitis, frequent asthma attacks on the blooming period. Basically the disbalance of T-helpers fractions play the great role in genesis of reagin-type allergy. What is the variety of T-helper lymphocytes?**

+ T-lymphocytes 0, 1, 2, 3  
T-lymphocytes 1, 2, 3, 4  
T-lymphocytes 1, 2, 3, 4, 5  
T-lymphocytes 1, 2  
T-lymphocytes 1, 2, 3

**5. 22 years old patient complains on periodic infectious illnesses of bacterial genesis. Their active period is long and remissions are short. Examination showed hypogammaglobulinemia. Disfunction of what cells was the cause of this illness?**

+ Plasmatic cells  
Phagocytes  
Neutrophils  
Macrophages  
Microphages

**6. Patient has atopic dermatitis. What can be the causative allergen?**

+ Antigen, hapten  
Hapten, half-hapten  
Different inorganic substances  
Hapten  
Antigen

**7. Patient has acquired defect of immune system – disorder of complement system activation by the classic way in condition of enough components of complement system content. Doctor suspected disorder in antibodies formation. Which class of immunoglobulins will decrease its level first of all?**

+ Ig M, Ig G  
Ig A, Ig M  
Ig D, Ig G  
Ig E, Ig A  
Ig M, Ig D

**8. Patient complains on periodical asthma attacks after inhaling different aromatic substances, contact with home dust and animal wool. Doctor put diagnosis "atopic bronchial asthma". Examination showed increased level of Ig E. What type of reaction is described?**

+ Allergic reaction  
Secondary immune response  
Primary immune response  
Reaction of binding complement  
Reaction of bacteria neutralization

**9. 24 years old patient after second contact with antigen – flower pollen started to complain on clinical manifestation of bronchial asthma. One of the methods of treatment of this pathology is the usage of antagonists for mediators of mastocytes. What mediators of mastocytes are the target for the treatment?**

+ Vasoactive amines, proteoglycans, cytokines, lipid mediators  
Chemokines, enzymes  
Toxic proteins  
Chemokines, toxic proteins, cytokines  
Lipid mediators, chemokines, enzymes

**10. Patient was taking antimicrobial drugs for a long time. Examination of vaginal bacterial content and pH examination showed the absence of lactobacteria and alkaline media. What should be prescribed to the patient to recover the normal vaginal microflora?**

+ Lactacid bacteria  
Suppository with antibiotics  
Sodium permanganate solution  
Sulfanilamides  
Suppository with antiseptics

**11. Patient with oncological pathology lost almost all of the large intestine in operation. What medicine can compensate functions of large intestine microflora?**

+ Vitamins  
Antistaphylococcal plasma  
Polyvalent bacteriophage  
Antibiotics  
Sulfanilamides

**12. 7 years old child is frequently ill with respiratory and intestinal illnesses. What cells provide non-specific organism protection against infections?**

+ Macrophages, neutrophils, natural killers  
Macrophages, T-lymphocytes  
Macrophages, B-lymphocytes  
T-helpers, T-killers  
T-lymphocytes, B-lymphocytes

**13. Patient after antibiotic therapy started to complain on intestinal dysbacteriosis. What medicine should be prescribed to recover the normal microflora of the intestine?**

+ Eubiotics  
Sulfanilamides  
Interferon  
Antifungal preparations  
Cephalosporins

**3 years old child has petechial rash after taking paracetamol. After examination and laboratory tests doctor put diagnosis "thrombocytopenic purpura". What immunopathologic mechanism is described?**

+ Cytotoxic reactions, conditioned by antibodies and complement  
Anaphylactic reaction  
Hypersensitivity of delayed type  
Immunocomplex reactions

Interaction of Ig E with hapten on the surface of mastocytes

**14. Bacteria is adsorbed by macrophage. What is the role of macrophages in cooperation with immunocompetent cells in formation of immune response?**

+ Provide processing and presentation of the antigen to T-helpers

Activate T-killers

Activate B-lymphocytes

Produce immunoglobulins

Provide processing and presentation of the antigen to T-killers

**15. Liquidator of the consequences of Chernobyl AES, who got a large dose of radiation did the transplantation of marrow. In some time after operation transplant against host reaction started to develop. What antigens were the triggers to this reaction?**

+ Antigens of HLA cells system of the liquidator organism

Antigens of Rh system of the liquidator erythrocytes

HBs, HBc, Hbe antigens

Antigens of ABO system of the liquidators erythrocytes

Antigens of HLA cells system of the donors marrow

**16. In the estimation of immune status the decrease of the cells, which form rosettes with sheep erythrocytes. How should we estimate examination results?**

+ Decrease of T-lymphocytes level

Decrease of B-lymphocytes level

Total defect of immunity system

Depression of marrow function

Congenital thymus defect

**17. Doctor examined patient's blood serum with reaction of binding complement for the serological diagnostics of ornithosis. Due to apparatus malfunction, the examined serum was not enough warmed up and complement of patients blood serum did not inactivate. The reaction result is negative (hemolysis of erythrocytes). Why the serum examination should be repeated?**

+ Complement excess in blood serum caused hemolysis

Decreased antibodies titre due to complement activity

Complement of blood serum blocked an antigen

Complement of blood serum blocked reaction

Complement binding did not occur

**18. What is the main function of  $\gamma$ -interferon?**

+ Immunomodulating

Antivirus

Antiparasitic

Antiproliferative

Antibacterial

**19. Immune diagnostic serums are used for:**

+ Serologic identification

Treatment of viral infections

Serologic diagnosis

Antitoxic therapy

Septicemia prophylaxis

**20. Local immunity is defined by the presence of:**

+ Ig A

Ig M

Ig E

Ig D

Ig G

**21. What can be used for treatment of some bacterial infections?**

+ Autovaccines

Chemical vaccines

Anatoxines

Attenuated vaccines

Inactivated vaccines

**22. Complement system plays an important role in the protection system of the organism from heterogenous agents. What is the final link in complement system activation?**

- + C9
- Properdin
- Cascade reaction
- C3
- Membrane-attacking complex

**23. The frequency of some illnesses of human is associated with the determined histocompatibility antigens. What is the antigen, which is the most frequently associated with the inclination of the individual to the determined illness?**

- + HLA-DR
- ABO
- HLA-B
- Rh+
- HLA-A

**24. Newborn has symptoms of hemolytic disease. In which case this pathology will manifest?**

- + Mother (Rh-), fetus (Rh+)
- Mother (Rh+), fetus (Rh-)
- Mother (0), fetus (AB)
- Mother (AB), fetus (0)
- Mother (Rh-), fetus (Rh-)

**25. Immunocompetent cells play the most important role in immune protection of the organism. What is typical for B-lymphocytes?**

- + B-lymphocytes differentiate into antibody-producing cells
- B-lymphocytes differentiate and study in thymus
- The source of B-lymphocytes is the lymphoid tissue of the intestine
- B-lymphocytes provide cell immunity
- B-lymphocytes differentiate into neutrophils

**26. The worker of galvanic shop, who worked with nickel for a long term has contact dermatitis. What is the cause of allergic contact dermatitis?**

- + Sensitized T-lymphocytes
- Ig G
- Basophils and mastocytes
- Ig E
- Sensitized macrophages

**27. Antibodies have an important role in immunity, which interacts with antigen. What site of immunoglobulin molecule interacts with antigen determinant?**

- + Variable sites of H- and L- chains
- Articulated site
- H-chain
- Contact sites of H- and L- chains
- L-chain

**28. Immunocompetent cells play the most important role in immune protection of the organism. What is typical for T-lymphocytes?**

- + T-lymphocytes provide cell immunity
- T-lymphocytes differentiate into plasmocytes
- The source of T-lymphocytes is the lymphoid tissue of the intestine
- T-lymphocytes differentiate into macrophages
- T-lymphocytes differentiate into neutrophils

**29. In case of long term persistence of the antigen in the organism, histotoxic immunocomplex reactions develop. Their symptoms caused by:**

- + Inflammation
- Histamine
- Autoantigen
- Autoantibodies



Ig E

**30. Patient was suffering from allergic rhinitis for a long period. Using specific allergic tests the foundation of the causative allergen succeed. Gradual injection of ascending doses of some substance was used for desensitizing and prevention of the illness. What was the substance?**

+ Allergen

Ig E

Antihistamine preparations

Antibodies

Ig G

**31. In which reaction complement is used?**

+ Hemolysis

Precipitation

Agglutination

Neutralization

Hemagglutination

**1. What is the vaccine, that contains microorganisms and inactivated exotoxin and it is used for specific prophylaxy?**

+ Associated

Genetically-engineered

Anatoxin

Chemical

Live (attenuated)

**In determination of phagocytory activity of leukocytes, in two hours after the experiment, each leukocyte captured 9 microorganisms. In 7 hours there was not more than 5 microorganisms in each leukocyte. What is the phagocytory number of leukocytes?**

+ 9

7

6

2

1,3

**Secretions of many of human's glands contain antibacterial substance – lysozyme. Which structure of the bacterial cell does it lysate?**

+Peptidoglycane

Lipopolysaccharide

Cytoplasmic membrane

Teuchoic acids

Ribosomes

**2. Sensibilization of the organism by the allergen of poplar wool was established to the patient with bronchial asthma. What factor of immune system plays the main role in the development of these immunopathological state?**

+ Ig E

Ig D

Ig M

Sensitized T-lymphocytes

Ig G

**3. Serological diagnostics showed that blood serum has antibodies to the determined pathogene. In what case the estimated result will be enough to put the diagnosis?**

+ If antibodies were found in diagnostic titre

The definition of antibodies has diagnostical value independently of titre

If antibodies were found in titre, which is higher than diagnostical

The definition of antibodies does not have diagnostical value anyway

It is not possible to put a reliable diagnosis only after serological examination

**4. As usual the repeated serological examination is performed for showing up the increase of antibodies titre in dynamics. The examination only of the serum test is enough if the antibodies to the pathogene are:**

+ Ig M

Ig G

Ig D

Ig E

It is not possible to put a reliable diagnosis only after serological examination

***Doctor suspected congenital toxoplasmosis. The determination of specific antibodies in the umbilical blood was performed by enzyme immunoassay. Which class of immunoglobulins will confirm the antenatal infection?***

+ Ig M

Ig A

Ig G

Ig D

Ig E

***5. Medical examination found painless ulcer with dense margins on the mucosal membrane of the cheek. What express method can confirm the diagnosis?***

+DRIF

The microscopy of the smear, which is taken from the fauces and dyed by Romanovsky

Reaction of agglutination on glass of the material from the ulcer with antiserum

The cultivation of the ulcer exudation on the chicken embryo

Reaction of binding complement

***Pediatrist put diagnosis "atopic dermatitis". As mother was saying, the child has alimentary allergy "to everything". Laboratory tests, which will be used for finding out the causative agent, should include:***

+ The definition of the total amount of Ig E and the amount of specific Ig E

The definition of the HLA phenotype of the child

The definition of the interleukin level

The definition of T-lymphocytes amount

The definition of B-lymphocytes amount

***After the repeated injection of medical serum the patient started to complain on anxiety, breathlessness, loss of consciousness, the decrease of blood pressure and temperature. What type of allergic reaction is described?***

+ Immunocomplex

Anaphylaxy

Cytotoxic

Cellular

Combined

***Specific homogeneous antibodies are used for treatment and diagnostics of infectious diseases. What cells produce homogeneous antibodies?***

+ Hybridomas

Plasmocytes

B-lymphocytes

T-lymphocytes

B-cells of immunological memory

***Tensed and prolonged is the artificial active immunity, which is acquired by the injection of vaccine:***

+ Of living microorganisms with low virulence

Of killed microorganisms

Of separate antigens of microbe cells (O- or K- antigenes)

Chemical

Genetic-engineered

***Gastroenterological illnesses are often accompanied by dysbacteriosis. What bacteria will not be present in bacteriological analysis of faeces on dysbacteriosis?***

+ Corynebacterium sp.

Escherichia coli

Bifidobacterium sp.

Lactobacterium sp.

Enterococcus sp.

***A 25 years old woman suffered from an allergy for plant's pollen. The treatment was done by the method of organism desensibilization (periodic injection of an allergen in small doses) and it helped patient to recover from the allergy. What was the mechanism of allergy reaction inhibition?***

+ The accumulation of T-suppressors and Ig G  
Inactivation of basophils  
Blockade of cell receptors to histamine and heparin  
The formation of immune complexes

The decrease of complement concentration in blood serum

***8 month old child has a disfunction of intestine. High quality and quantitative analysis of the intestinal microflora allowed doctor to diagnose dysbacteriosis. Coli-proteus bacteriophage was prescribed for the treatment. What is the mechanism of drug action?***

+ Causes the lysis of conditioned-pathogenic enterobacteria  
It supports bifidobacteria reproduction  
It increases antagonistic activity of lactobacilli  
It stimulates synthesis of secretory Ig A  
It promotes barrier properties of mucous membrane of intestine

***During the first 6 month of life a child have resistance to infectious diseases, which is conditioned by transmission of antibodies from mother to child through placenta and breast milk. What form of acquired immunity does the child have in this age?***

+ Natural passive immunity  
Natural active immunity  
Artificial passive immunity  
Artificial active immunity  
Constitutional immunity

***Chicken flu virus can cause massive illness of people in many countries. This case is called:***

+ Pandemia  
Epidemia  
Epizootia  
Superinfection  
Reinfection

***What pathogenic factor is specific for the considerable part of gram-negative bacteria and play an important role in illness pathogenesis caused by these microorganisms?***

+ Endotoxin  
Exotoxin  
Invasive factor  
Capsule  
Hemorrhagic factor

***The process of preparation of inactivated (killed) vaccine consists of a few stages. Thus the main role has a selection of vaccine culture. What criterion of the vaccine culture selection is the most important?***

+ The culture of bacteria should be characterized by the maximal virulence  
Bacteria should have finely expressed biochemical characteristics  
The cultures of bacteria should have weak pathogenicity  
The cultures of bacteria should have weak antigenicity and immunogenicity  
The cultures of bacteria should be resistant to antibiotics

***There were different infections in the anamnesis of the 6 month old patient: there was meningitis, caused by Haemophilus influenzae and pneumocystic pneumonia. What is the cause of immunodeficiency?***

+ Stem cells do not differentiate into the precursors of B- and T-lymphocytes  
B-cells do not differentiate into plasmocytes  
There is no differentiation of CD-8 cells in thymus  
The absence of membrane-stabilizing complex of the complement  
Neutrophils do not synthesize the enzymes of the oxygen explosion.

***At the estimation of immune status the determination of immunoglobulins of different classes is compulsory. What reaction is used for the determination of immunoglobulins of different classes in blood serum?***

+ Reaction of radial immunodiffusion by Mancini  
Reaction of blast transformation  
Reaction of reverse indirect hemagglutination  
Reaction of double immunodiffusion  
Polymerase chain reaction

***The immunofluorescence reaction is widely used as express method nowadays. What bacteria features does the immunologist define in this reaction?***

- + Morphological and antigenic
- Morphological and tinctorial
- Antigenic and immunogenic
- Cultural and antigenic
- Cultural and enzymatic

***Humoral immunity has an important role in a number of infectious diseases. What activity is typical for antibodies?***

- + Phagocytory
- Opsonizitory
- Complement acivation
- Neutralization
- The actiation of cellular cytotoxicity

***11 years old boy has eczematous rash on feet and trunk. He has frequent otitis, pneumonias, furunculosis. The results of laboratory examination: thrombocytopenia, the decrease of T-helpers and T-suppressors activity, the decrease of Ig M titer, but the maintenance of Ig A and Ig G is normal. What immunodeficient disease is diagnosed for the patient?***

- + Viskott-Oldridge syndrome
- Louis Bar syndrome
- Swiss type of immunodeficiency
- Di-George syndrome
- Chediak-Higashi syndrome

***As the examination of a 2 years old child with heavy small-pox flow, pediatrician marked the defects the defects of face, mongoloid shape of eyes. The child has cramp, proof mycosis of the mucous membrane of month, lymphocytopenia at normal maintainance of B-lymphocytes and blood immunoglobulins. What type immunodeficiency syndrome does the child have?***

- +Di-George syndrome
- Klinefelter's syndrome
- Louis Bar syndrome
- Turner's syndrome
- Viskott-Oldridge syndrome

***Young lady with blood group II (A), who got into the traffic accident was accidentally transfused with blood group III (B). A posttransfused reaction started to develop. What type of allergic reaction does posttransfusional reaction belong to?***

- +Cytotoxic
- Anaphylaxy
- Immunocomplex
- Cellular
- Stimulative

***The dysbacteriosis which is accompanied by the changes of quantity and quality composition of humans microflora showed be corrected by the usage of preparations, which contain microorganisms of normal microflora. What are the preparations, which contains microorganisms of normal microflora?***

- +Eubiotics.
- Xenobiotics.
- Antibiotics.
- Vaccines.
- Immunomodulators.

***Vaccination is performed for the specific prophylaxy of illnesses and the formation of immunity. The cooperation of what immunocompetent cells is necessary for the effective formation of primary immune response of the humoral type?***

- + Macrophages, T-lymphocytes, B-lymphocytes
- T-lymphocytes, plasmocytes, B-lymphocytes
- Macrophages, plasmocytes, B-lymphocytes
- B-lymphocytes, macrophages, plasmocytes

***Vaccination is performed for the specific prophylaxy of illness and formation of immunity. The formation of what immunocompetent cells is necessary for the effective formation of primary immune response of the cellular type?***

- + Macrophages and T-lymphocytes
- T-lymphocytes and plasmocytes
- Macrophages and plasmocytes
- B-lymphocytes and T-lymphocytes

***There are three competent in the development of infections and epidemic processes. The first component of the infectious process is the pathogenic organism. What is the first component of the epidemic process?***

- + The source of the infection
- The dosis of the microorganism
- The entry of infection
- The environmental conditions
- What interleukin does macrophages secrete at the end of phagocytosis for the start of immune response for the bacterial antigen?

- + IL -1
- IL – 5
- IL – 6
- IL – 2
- IL – 3

***The patient felt badly in 1,5 month after the transplantation of donor's organ and the rejection reaction started. What factor of the immune system played the main role in the rejection of the transplant?***

- + T-killers
- Interleukin 1
- Natural killers
- B-lymphocytes
- T-helpers

***The immunization of children was planned for the prophylaxy of illness. What properties should the vaccine have?***

- + Immunogenicity, avirulence, areactivity
- Immunogenicity, areactivity
- Avirulence, simple production of vaccine technology
- Areactivity, the simple way of injection
- Immunogenicity

***If bacteriological examination gave negative result, the diagnosis can be put by the serologic examination. The formation of agglutinate of the microorganisms with patient's antibodies is the reaction of:***

- + Agglutination
- Precipitation
- Binding complement
- Lysis
- Immobilization

***The vaccines for immunization are created in the institute of bacterial preparations. What is the vaccine that consists of bacterial cells and the anatoxin of other agent?***

- + Associated
- Chemical
- Genetic-engineered
- Autovaccine
- Combined

***In initial surgical debridement for the creation of artificial passive immunity the patient was injected with:***

- + Immune serum
- Vaccine
- Anatoxin
- Antibiotics
- Vitamins

***For the determination of patient sensitivity to antibiotics he was injected with 0,2 ml solution of penicillin. Patient started to complain on hyperemia and edema on the site of injection in 10 minutes after the performed procedure. What type does this reaction belong to by Coomb's classification?***

+ Anaphylactic reaction (Overi phenomenon)

Cytotoxic reaction

Delayed-type hypersensitivity

Reaction of Arthus phenomenon type

Tuberculin reaction

***25 years old woman who was doing the repairment of the flat started to complain on asthmatic fit, which is characterized by the feeling of air insufficiency, difficulty of outbreathing, dry cough, nervousness. The doctor put the diagnosis of bronchial asthma. What allergy mediator stimulated the asthmatic fit?***

+ Histamine

Serotonin

Prostaglandin E

Interleukin 1

Interleukin 6

***40 years old woman started to complain on itch, redness and burning of skin feeling, the swell on cheeks. The patient was using the cosmetic cream in 1 hour before the symptoms. What type of allergic reaction of I type did the patient have by the classification of Coomb's?***

+ Quincke's edema

Bronchial asthma

Anaphylactic shock

Urticaria

Pollinosis

***The worker, who was working at plant for 20 years, has contact dermatitis of hands. What type of immunological dysfunctions does this illness belong to?***

+ Delayed type hypersensitivity

Primary immunodeficiency

Immediate type hypersensitivity

B-cell immunodeficiency

T-cell immunodeficiency