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Guidelines for conducting a practical lesson with 6th year students of the Faculty of Medicine on the topic:

LYMPHOMAS. HODGKIN'S DISEASE. NON-HODGKIN'S LYMPHOMAS

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The incidence of lymphogranulomatosis (Hodgkin's lymphoma) is 3-4 new cases per 100,000 population per year. Approximately 7,500 new cases of Hodgkin's lymphoma are diagnosed annually in the US and approximately 1,400 deaths annually are associated with this disease. More often the disease is observed in the United States, less often in Japan. The first peak of incidence falls on 20-30 years, the second peak - after 50 years. Representatives of the black race get sick less often than representatives of the white race. Men make up 60-70% of all patients with lymphogranulomatosis.

The incidence of non-Hodgkin's lymphomas is 19 cases per 100,000 population in men and 12 cases per 100,000 population in women. Approximately 55,000 new cases of non-Hodgkin's lymphoma are diagnosed annually in the US and approximately 20,000 deaths annually are associated with this disease. The peak incidence is recorded in patients over 65 years of age and in HIV-infected individuals aged 20-40 years. Representatives of the black race get sick less often than representatives of the white race.

The relevance of timely diagnosis and adequate management of lymphomas stems from the fact that these diseases are characterized by multiple organ disorders and a serious prognosis, and thus have adverse medical and social consequences.

Learning goals:

to define lymphomas; to get acquainted with the etiology and pathogenesis of different types of lymphomas; get acquainted with modern classifications of lymphomas; learn to recognize the main symptoms and syndromes in lymphomas; get acquainted with the research methods that are used to diagnose lymphomas; indications and contraindications regarding their implementation; methods of their implementation; the diagnostic value of each of them; learn to independently interpret the results of the research; learn to recognize certain types of lymphomas; learn how to prescribe treatment for lymphomas.

What should a student know?

main etiological factors and pathogenetic mechanisms of development of lymphomas and multiple myeloma; main clinical syndromes in lymphomas and multiple myeloma; complaints and physical examination data for lymphomas and multiple myeloma; methods of physical examination of patients with lymphomas and multiple myeloma; diagnostic value of a clinical blood test and myelogram in lymphomas and multiple myeloma; diagnostic value of the results of histological examination of the punctate of the lymph nodes in lymphomas; a list of additional instrumental studies that are used to detect splenomegaly, hepatomegaly, enlarged internal lymph nodes, plasma cell infiltrates in various organs and tissues; complications in lymphomas and multiple myeloma; features of management of patients with lymphomas and multiple myeloma; features of the treatment of lymphomas and multiple myeloma (chemotherapy, radiation therapy, treatment with glucocorticoids, treatment with α2-interferon, bone marrow transplantation). Preventive measures to prevent the occurrence of lymphomas and multiple myeloma.

What should a student be able to do?

highlight the main clinical syndromes in lymphomas and multiple myeloma; determine the program of examination of patients with lymphomas and multiple myeloma; interpret laboratory results for lymphomas and multiple myeloma; carry out differential diagnostics of lymphomas and multiple myeloma; prescribe treatment for patients with lymphomas and multiple myeloma; assess prognosis in patients with lymphoma and multiple myeloma.

Lymphomas (lymphocytomas) are extramedullary tumors that occur in the lymph nodes or lymphoid tissue of other organs and are characterized by local growth, and the morphological substrate of these tumors are mature lymphocytes or lymphocytes and prolymphocytes.

Lymphomas are mature cell monoclonal lymphatic tumors that are characterized by a benign course. Transformation of lymphomas into lymphosarcomas is rare.

Lymphosarcomas are extramedullary malignant tumors that arise in the lymph nodes or lymphoid tissue of other organs and are characterized by local growth, and the morphological substrate of these tumors are lymphoblasts or lymphoblasts and prolymphoblasts.

Lymphomas and lymphosarcomas can be B- and T-cell, and according to the nature of growth, nodular and diffuse forms are distinguished.

Lymphomas and lymphosarcomas differ from leukemias in that at the initial stages of the disease, the bone marrow is not involved in the pathological process.

Traditionally, extramedullary tumors of the lymphoid tissue are divided into Hodgkin's disease (lymphogranulomatosis) and non-Hodgkin's lymphomas.

^ General information about the structure and function of the lymphatic system.

The lymphatic system is a collection of vessels, tissues and organs that serve as a source of immunocompetent cells, a filtering complex, a means of transporting fats and other substances, as well as a drainage system through which tissue fluid enters the blood.

Lymph nodes are located on the path of the lymphatic vessels, sometimes singly, but more often in groups.
Groups of lymph nodes are usually located:
at the gates of the internal organs (in the roots of the lungs, in the mesentery of the intestine, at the gates of the liver and spleen, etc.); in protected and mobile places where movements assist the flow of lymph through the nodes (in the popliteal fossa, in the groin, in the armpit, on the neck, etc.); along the large blood vessels of the pelvis and abdominal void. The lymph node is covered with a capsule, from which trabeculae extend deep into. Lymphoid tissue is located between the trabeculae, which forms three sections: cortical substance, paracortical zone, medulla. The cortical substance contains typical macrophages, dendritic cells (derived from macrophages), B-immunoblasts, plasmablasts. The paracortical zone contains T-cells (T -helperi, T-killeri, T-supessors) The medulla contains reticular cells, plasmacytes and macrophages. The lymphoid system of the mucous membranes includes: Pharyngeal lymphoid ring (Pirogov's ring) - tonsils of the tongue, two palatine tonsils, two tubal tonsils, pharyngeal tonsil. In the wall of the small intestine - single (solitary) lymphatic follicles, as well as their concentration (Peyer's patches). In the wall of the respiratory tract - lymph nodes and diffuse lymphoid tissue (broncho-associated lymphoid tissue). In the lymphoid tissue, 1) lymph nodes (follicles), which are a zone of B-lymphocytes, 2) parafollicular accumulations of lymphoid tissue, which are They are a zone of T-lymphocytes. The meeting of lymphocytes for antigens occurs in the lymphoid tissue. Contact of the elements of the lymphoid tissue of the mucous membranes with antigens occurs through the mediation of the epithelium.

LYMPHOMA OF HODGKIN

Lymphogranulomatosis (Hodgkin's disease) is a primary tumor disease of the lymphatic system, which is characterized by granulomatous growth with the presence of specific Reed-Sternberg cells.
Lymphogranulomatosis has long been considered a lymphoproliferative disease, but at present, the monocyte-macrophage origin of the disease has been proven.
Morphological classification of lymphogranulomatosis.
A variant of nodular sclerosis (the most common is 75%).
Mixed cell variant.
Variant with lymphoid depletion (least common - less than 5%).
A variant with a large number of lymphocytes.
Nodular variant with a predominance of lymphocytes.
Etiology of lymphogranulomatosis. The etiology is unknown. There are assumptions about the participation in the occurrence of the disease of viruses, ionizing radiation, autoimmune process, genetic predisposition.
^ Pathogenesis of lymphogranulomatosis. The basis of the disease is the formation of polymorphocellular granulomas with the growth of fibrous structures in the lymph nodes and organs. The granuloma consists of lymphocytes, reticulocyte cells, neutrophils, eosinophils, plasma cells, Hodgkin cells, Reed-Sternberg cells, fibrous tissue.
Reed-Sternberg cells (in the domestic literature - Berezovsky-Sternberg cells) are large cells with basophilic cytoplasm and two nuclei, which are of monocytic origin.
Hodgkin cells are large mononuclear cells with basophilic cytoplasm.
^ Clinical picture. Initial period. Clinical manifestations of the disease are varied. There are several options for the onset of the disease.
^ Enlargement of peripheral lymph nodes - observed in 70% of patients. The cervical-supraclavicular lymph nodes are predominantly enlarged, less often - axillary, inguinal. Enlarged lymph nodes are mobile, painless, densely elastic, not soldered to the skin. Over time, the formation of conglomerates is possible. There are no signs of intoxication.
^ Enlargement of the lymph nodes of the mediastinum - observed in 20% of patients. There are dry cough, shortness of breath, swelling of the cervical veins, neck enlargement, chest pain, venous network on the chest (signs of the “superior vena cava syndrome” due to compression of mediastinal lymph nodes by conglomerates). Intoxication occurs simultaneously with the syndrome of the superior vena cava.
^ Enlargement of the para-aortic lymph nodes is rare, only in some patients. Characterized by pain in the lumbar region at night, symptoms of compression of the spinal cord.
^ Acute onset of the disease - observed in 10% of patients. Characterized by a sudden increase in body temperature, sweating, rapid weight loss. Lymph nodes enlarge later.

^ The period of developed clinical manifestations.

Complaints - a sharp general weakness, decreased ability to work, significant weight loss, sweating, intense itching of the skin, fever, bone pain. Objectively - the skin is moist, hyperemic, with traces of scratching, lymph nodes are enlarged in several areas. In this period, the lymph nodes are usually large, dense, soldered together, but not with the skin. An increase

in internal lymph nodes can cause compression of various organs with corresponding symptoms. Due to the germination of the tumor or due to metastasis through the lymphatic tract, many organs are affected. The defeat of the gastrointestinal tract can be manifested by pain in the epigastrium and the umbilical region, belching, flatulence, diarrhea. Liver damage is clinically manifested by pain in the right hypochondrium, a feeling of bitterness in the mouth, jaundice, enlargement and soreness of the liver. The spleen is enlarged and hardened. Lung damage is manifested by cough (sometimes with hemoptysis), chest pain, shortness of breath, crepitus, fine bubbling rales. Possible damage to the pleura in the form of exudative pleurisy. Kidney damage is rare and is manifested by back pain, proteinuria, cylindruria. Damage to the spine is characterized by pain in the thoracic and lumbar regions, which are aggravated by bending or turning the body. Bone damage can be complicated by compression and pathological fractures. Signs of damage to the nervous system are headache and dizziness, pain in the legs, motor and sensory disorders, paresis are possible.

Damage to other organs is extremely rare.

^ Classification of clinical stages of Hodgkin's disease.

Stage I - the defeat of the lymph nodes of one site (I) or the defeat of one extralymphatic organ or localization (IE).

Stage II - involvement of the lymph nodes of two or more sites on the same side of the diaphragm (II) or the same + localized involvement of one extralymphatic organ or localization (IIE) on the same side of the diaphragm. The number of affected areas is indicated by an Arabic numeral.

^ Stage III - Involvement of the lymph nodes of any areas on both sides of the diaphragm (III), which is accompanied by localized involvement of one extralymphatic organ or area (IIIE), or involvement of the spleen (IIIS), or both (IIIES).

Stage IV - Diffuse involvement of one or more organs, with or without lymph node involvement.

Localization of lesions in stage IV is due to histological studies and is indicated by the letters: L - lungs, H - liver, M - bone marrow, O - bones, P - pleura, D - skin.

In each stage, phases A and B are additionally distinguished depending on the presence of signs of intoxication (night sweats, body temperature> 38 ° C, weight loss > 10% over 6 months). The presence of intoxication - A, the absence of intoxication - B.

^ Laboratory findings in granulomatosis.

General blood analysis:

Moderate leukocytosis with a predominance of neutrophils and a shift of the leukocyte formula to the left;

Eosinophilia, monocytosis are possible;

Lymphopenia, thrombocytopenia;

Anemia;

ESR increase.

^ Biochemical blood test: elevated levels of seromucoid, haptoglobin, ceruloplasmin, copper, α1-, α2-, and γ-globulins. With liver damage - an increased level of bilirubin, aminotransferases, lactate dehydrogenase, the level of albumin decreases. With kidney damage - increased levels of creatinine and urea.

Myelogram: no significant changes.

Immunological analysis: a violation of delayed-type immune reactions is detected.

^ Cytogenetic analysis: A variety of chromosomal abnormalities are found.

Urinalysis: with kidney damage, proteinuria, microhematuria are possible.

^ Instrumental studies in lymphogranulomatosis.

X-ray studies:

Chest X-ray reveals an increase in mediastinal lymph nodes, focal infiltrates of the lungs, effusion in the pleural cavity.

Fluoroscopy of the stomach reveals signs of gastric deformity, flattening of the contour, rigidity of the walls, a filling defect or a “niche” symptom. X-ray of the small intestine: a filling defect or a symptom of a “niche” is possible. X-ray of the bones reveals a variety of destructive changes.

Ultrasound: detects enlargement of the liver, spleen, and internal lymph nodes >1 cm in diameter.

Computed tomography: detection of damage to the liver, spleen, as well as an increase in lymph nodes of any localization.

Lymphography: detection of retroperitoneal and pelvic lymph nodes.

67Ga whole body scintigraphy: detection of retroperitoneal and pelvic lymph nodes.

Endoscopic methods: allow to identify damage to the stomach and intestines.

Biopsy of the affected lymph nodes: the method allows you to confirm the diagnosis by identifying specific granulomas.

The implementation of a biopsy of the affected lymph nodes or other organs is a mandatory study to confirm the diagnosis of Hodgkin's disease.

^ Differential diagnosis in lymphogranulomatosis.

Differential diagnosis should be carried out with diseases that are accompanied by an increase in lymph nodes, fever and weight loss. The main of these diseases:

Infectious mononucleosis.

Malignant neoplasms with metastases to the lymph nodes.

Tuberculosis.

Systemic lupus erythematosus.

Non-Hodgkin's lymphomas.

Complication of lymphogranulomatosis.

The main complications of lymphogranulomatosis include severe infectious and inflammatory diseases, pulmonary and heart failure.

Treatment of lymphogranulomatosis.

1. Radiation therapy (the zones of all affected lymph nodes are irradiated, it is used for stage I and II lymphogranulomatosis, which in 90% of cases ensures the absence of a recurrence of the disease for 10 years).

2. Polychemotherapy - there are many different treatment regimens, the most popular regimens are MOPP and ABVD (treatment course 28 days):

MORR scheme:

Mustargen (mechlorethamine) 6 mg/m2 IV

Vincristine 1.4 mg/m2 IV

Natulan (procarbosine) 100 mg/m2 IV

Prednisolone 40 mg orally

Scheme ABVD

Doxorubicin 25 mg/m2 IV

Bleomycin 10 U IV

Vinblastine 6 mg/m2 IV

Dacarbazine 375 mg/m2 IV

3. Combination of radiation therapy and polychemotherapy (in severe cases).

4. Polychemotherapy with high doses of drugs with further bone marrow transplantation (in the treatment of diffuse organ damage).

Prevention of lymphogranulomatosis.

Prevention of lymphogranulomatosis includes the prevention of the occurrence of immunodeficiency states, the influence of chemical and infectious agents.

Prognosis for lymphogranulomatosis.

Timely and adequate treatment of patients with stage I-II lymphogranulomatosis can lead to recovery in 90% of cases. However, in patients with stages III-IV of lymphogranulomatosis, the prognosis is significantly worse.

NON-HODGKINSKY LYMPHOMAS

Non-Hodgkin's lymphomas are a group of mature cell tumors of the lymphatic system.

Etiology of non-Hodgkin's lymphomas.

The etiology of the disease is not completely known. There are several factors that provoke the development of the disease:

I. Congenital immunodeficiency diseases:

Klinefelter syndrome

Chediak-Higashi Syndrome

Ataxia-telangiectasia syndrome

Wiskott-Aldrich Syndrome

II. Acquired immunodeficiency diseases:

Iatrogenic immunosuppression

HIV infection

Acquired hypogammaglobulinemia

III. Autoimmune diseases:

Sjögren's syndrome

celiac disease

Rheumatoid arthritis

Systemic lupus erythematosus

IV. Influence of chemicals and drugs: Phenytoin, Dioxin, Herbicides, Ionizing radiation, Chemotherapy, Radiation therapy

V. Infectious agents (infections other than HIV): Epstein-Barr virus, Human T-cell leukemia virus/lymphoma, Helicobacter pylori - MALT-lymphoma (mucosa-associated lymphoid tissue)

Pathogenesis of non-Hodgkin's lymphomas.

Under the influence of etiological factors, chromosome mutations occur in which gene control over cell proliferation and differentiation is lost. Cloning of mature lymphocytes occurs in the lymph nodes and with their further spread through the lymphatic system.

International classification of malignant lymphomas REAL (A Revised European-American Classification of Lymphoid Neoplasms).

I. Mature cell lymphatic tumors.

B-cell:

B-cell chronic lymphocytic leukemia / prolymphocytic leukemia / small lymphocyte lymphoma

Lymphoplasmacytoid lymphoma/immunocytoma

Hairy cell leukemia

Centrofollicular lymphoma (small cell)
Lymphoma from cells of the mantle zone
Lymphoma from cells of the marginal zone of the spleen
Lymphoma from the cells of the marginal zone of the lymph nodes, extranodal (type MALT-mucosa-associated lymphoid tissue
Plasmacytoma (myeloma)
^ T- and NK-cell:
T-cell chronic lymphocytic leukemia/prolymphocytic leukemia
Leukemia from large granular (granular) lymphocytes
T cell type
NK cell type
Fungal mycosis
Cesari syndrome
Adult T-cell leukemia/lymphoma
γ-δ-T-cell lymphoma of the liver and spleen
^II. Lymphosarcomas
B-cell:
Acute lymphoblastic leukemia / progenitor B-cell lymphoma
Burkitt's lymphoma
Primary large B-cell lymphoma of the mediastinum
Diffuse large B-cell lymphoma
T-cell
Acute lymphoblastic leukemia/progenitor T-cell lymphoma
Peripheral T-cell lymphomas
T-cell lymphoma of the small intestine
T-cell lymphoma like subcutaneous panniculitis
^ The working classification of lymphomas is divided into low-grade and high-grade lymphomas.
Clinical picture of non-Hodgkin's lymphomas.
The first sign of the disease is an increase in lymph nodes. Enlarged lymph nodes are dense, mobile, painless. With further progression, symptoms of intoxication appear, which are characteristic of a tumor - night sweats, general weakness, and weight loss. In many patients, the spleen, liver, and lymph nodes of the abdominal cavity are enlarged. Possible involvement in the pathological process of the skin, conjunctiva, mucous membranes of the gastrointestinal tract, respiratory tract.
The symptomatology of different lymphomas mainly depends on the localization of the tumor lesion.
^ Laboratory Diagnosis of Non-Hodgkin's Lymphomas.
General blood analysis:
Minor leukocytosis (leukocyte count 10-12×109/l);
Lymphocytosis;
Normochromic anemia (with a prolonged course of the disease);
ESR increase.
Myelogram: no significant changes are observed. With the progression of the disease, an increase in the number of lymphocytes occurs.
^ Biochemical blood test: increase in the content of γ-globulins.
Immunological blood test: an increase in the number of B-lymphocytes, sometimes - T-lymphocytes.
^ Data from instrumental studies in non-Hodgkin's lymphomas.
X-ray studies, ultrasound, computed tomography, endoscopic methods allow you to determine the localization of the tumor lesion. Biopsy of the lymph node with further histological examination allows you to verify the diagnosis and determine the morphological variant of lymphoma, and, accordingly, the risk category.
^ General diagnostic criteria for non-Hodgkin's lymphomas.
Focal nature of lymphoid proliferation, predominantly affecting a certain organ. Benign course of the disease for 10-20 years. Frequent (up to 25%) degeneration into lymphosarcoma, which is sensitive to chemotherapy and radiation. Slight lymphocytosis in peripheral blood. Increased secretion of monoclonal immunoglobulin (usually IgM)
Detection of proliferation of mature cell lymphocytes in biopsy specimens of lymph nodes.
Complications. Complications of lymphomas are severe infectious and inflammatory diseases and transformation into lymphosarcoma.
Differential diagnosis for non-Hodgkin's lymphomas. Differential diagnosis should be carried out with diseases that are accompanied by an increase in lymph nodes, fever and weight loss. The main of these diseases:
Infectious mononucleosis. Malignant neoplasms with metastases to the lymph nodes. Tuberculosis. Systemic lupus erythematosus. Lymphogranulomatosis.
Treatment of low-grade lymphomas.
1. Treatment with cytostatics.
Monochemotherapy:

fludarabine 25 mg/m2 IV;
cyclophosphamide (100 mg/m2 orally);
Polychemotherapy. Several regimens are used, in particular the CVP regimen (course duration - 21 days): cyclophosphamide (800 mg/m2 IV) vincristine (1.5 mg/m2 IV) prednisolone (100 mg IV)3. Immunotherapy: rituximab "MabThera" (monoclonal antibodies) 375 mg/m2 once a week.2. Radiation therapy (used less frequently than with lymphogranulomatosis).
Treatment of lymphomas with a high degree of malignancy.
Combination therapy is used: chemotherapy and radiation therapy. The most popular CHOP polychemotherapy regimen (course duration - 21 days): cyclophosphamide (800 mg/m2 IV), doxorubicin (50 mg/m2 IV), vincristine (1.5 mg/m2 IV), prednisolone (100 mg orally).
Prevention of non-Hodgkin's lymphomas.
Prevention of non-Hodgkin's lymphomas includes the prevention of the occurrence of immunodeficiency states, the influence of chemical and infectious agents.
Prognosis for non-Hodgkin's lymphomas.
The prognosis for non-Hodgkin's lymphomas significantly depends on the condition of the lymph nodes, the degree of damage to the internal organs and the histological form. For example, the average duration of the disease with lymphoma from the cells of the mantle zone of the lymphoid follicle is 3 years, and with T-cell lymphoma of the skin - 10 years.
Control of the initial level of knowledge
1. What cells are called plasmacytes?
A. T-lymphocytes-killers.
B. neutrophilic granulocytes.
B. B-lymphocytes after antigenic stimulation.
G. mast cells.
D. erythroblasts.
^2. What is a complement?
A. clotting factor.
B. complex of inactive proteases.
B. leukocyte receptor.
G. vasoactive substance.
D. antigen.
^ 3. What is synthesized in plasma cells in response to antigenic stimulation?
A. antibodies.
B. hormones.
B. cholesterol.
G. cytokines.
D. coagulation factors.
^ 4. What class of immunoglobulins is the main one?
A. IgM.
B. IgG.
B. IgA.
D. IgE.
D. IgD.
5. Humoral immune reactions with the participation of complement lead to:
A. phagocytosis of the bacterial cell.
B. agglutination of bacterial cells.
V. lysis of bacterial cells.
G. do not affect bacteria.
D. bacterial mutations.
^ 6. Which of the cells do not belong to immunocompetent cells?
A. B-lymphocytes.
B. T-lymphocytes.
B. macrophages.
G. neutrophils.
D. erythrocytes.
^ 7. Which organ does not belong to the lymphatic system?
A. lymphatic vessel.
B. spleen.
B. lymph node.
G. bone marrow.
D. Peyer's patch.
^ 8. What protein fraction of blood do antibodies belong to?
A. β-globulins.

B. γ-globulins.
B. α1-globulins.
D. α2-globulins.
D. albumins.
^ 9. What cells mediate the stimulation of B-lymphocytes by antigens?
A. pluripotent stem cells.
B. T-lymphocytes-killers.
B. T-lymphocytes-suppressors.
D. T-lymphocytes-helpers.
D. basophilic granulocytes.
^ 10. Where does B-lymphocyte maturation take place?
A. liver
B. lymph nodes.
B. spleen.
G. red bone marrow.
D. yellow bone marrow.
Control of the final level of knowledge
^ 1. How do lymphomas differ from leukemias?
A. With leukemia, lymph nodes are not affected.
B. with lymphomas, there are no signs of general intoxication.
V. at lymphomas treatment by cytostatics is not applied.
^ G. with lymphomas, the primary pathological process develops outside the boundaries of the bone marrow.
D. lymphomas are not complicated by infectious and inflammatory diseases.
^ 2. What cells are characteristic of a granuloma in Hodgkin's lymphoma?
A. Botkin-Gumprecht cells.
B. Reed-Sternberg cells.
B. platelets.
G. erythrocytes.
D. blast cells.
^ 3. What symptom is most typical for the initial period of Hodgkin's disease?
A. splenomegaly.
B. increased body temperature.
B. pain in the lumbar region.
D. night sweats.
D. swollen lymph nodes.
^ 4. What characteristics are inherent in enlarged lymph nodes in lymphogranulomatosis?
A. dense, painless, motionless, soldered to the skin.
B. soft, painful, mobile, not soldered to the skin.
^ B. densely elastic, painless, mobile, not soldered to the skin.
G. dense, painful, the skin over the lymph nodes is hyperemic.
D. soft, painful, motionless.
^ 5. What stage of lymphogranulomatosis is characterized by diffuse lesions of internal organs?
A. I stage.
B. II stage.
B. III stage.
D. IV stage.
D. there is no damage to internal organs with lymphogranulomatosis.
^ 6. What research method is required to confirm the diagnosis of non-Hodgkin's lymphoma?
A. Ultrasound.
B. sternal puncture.
B. biopsy of the lymph node.
G. liver biopsy.
D. clinical blood test.
^ 7. What cells are the tumor substrate in non-Hodgkin's lymphomas?
A. lymphocytes.
B. neutrophils.
B. monocytes.
G. erythrocytes.
D. platelets.
^ 8. What disease can lymphomas transform into?
A. lymphosarcoma.
B. acute lymphoblastic leukemia.

B. chronic lymphocytic leukemia.
G. lymphadenitis.
D. multiple myeloma.
^ 9. What disease is characterized by hyperproteinemia?
A. lymphosarcoma.
B. lymphogranulomatosis.
B. chronic lymphocytic leukemia.
G. non-Hodgkin's lymphoma.
D. multiple myeloma.
^ 10. What disease is characterized by the detection of Bence-Jones protein in the urine?
A. multiple myeloma..
B. lymphogranulomatosis.
B. chronic glomerulonephritis.
G. acute leukemia.
D. autoimmune hemolytic anemia.
situational tasks.
#1
A 48-year-old patient complains of weakness, sweating, intense skin itching, and fever. Objectively: pallor of the skin and mucous membranes, cervical lymph nodes are mobile, densely elastic, about the size of a walnut, painless, not soldered to the skin, body temperature is 38.3°C. Complete blood count: erythrocytes - 3.0 × 1012 / l, hemoglobin - 100 g / l, leukocytes - 14 × 109 / l, eosinophils - 6%, basophils - 3%, stab - 11%, segmented - 69%, lymphocytes - 7%, monocytes - 4%, platelets - 280×109/l, ESR - 37 mm/h. What examination method should be used to verify the diagnosis?
A. Sternal puncture
B. Muscle biopsy
B. Lymph node biopsy
D. Chest X-ray
D. Lumbar puncture
No. 2.
A 57-year-old patient suffers from lymphogranulomatosis, clinical stage IIIES. What method of treatment should be applied in this case?
^ A. Radiation therapy.
B. polychemotherapy.
B. splenectomy.
G. a combination of radiation therapy and polychemotherapy.
D. treatment with glucocorticoids.
No. 3
A 28-year-old patient complains of weakness, bone pain, frequent respiratory infections, and dizziness. Objectively: pale skin and mucous membranes, ossalgia. Complete blood count: erythrocytes - 2.7 × 1012 / l, hemoglobin - 80 g / l, CP - 0.9, reticulocytes - 0.5%, leukocytes - 5 × 109 / l, eosinophils - 1%, basophils - 3 %, stab - 7%, segmented - 60%, lymphocytes - 23%, monocytes - 2%, plasma cells - 4%, platelets - 280 × 109 / l, ESR - 64 mm / h. Total blood protein - 120 g/l. Urinalysis: protein 2.5 g per day. X-ray of the skull: foci of bone destruction. Diagnosis?
A. Myeloma
B. Chronic lymphocytic leukemia
B. Acute lymphocytic leukemia
D. Acute myeloid leukemia
D. Waldenström's disease
№4
A 38-year-old patient complains of weakness, sweating, intense skin itching, and fever. Objectively: pallor of the skin and mucous membranes, cervical lymph nodes are mobile, densely elastic, about the size of a walnut, painless, not soldered to the skin, body temperature is 38.3°C. Complete blood count: erythrocytes - 3.0 × 1012 / l, hemoglobin - 100 g / l, leukocytes - 14 × 109 / l, eosinophils - 6%, basophils - 3%, stab - 11%, segmented - 69%, lymphocytes - 7%, monocytes - 4%, platelets - 280×109/l, ESR - 37 mm/h. What morphological findings are most likely to be obtained from a lymph node biopsy?
A. Plasmocytes
B. Heinz bodies
B. Botkin-Gumprecht cells
D. Taurus Melori
D. Berezovsky-Sternberg cells
#5
A 28-year-old patient complains of weakness, bone pain, frequent respiratory infections, and dizziness. Objectively: pale skin and mucous membranes, ossalgia. Complete blood count: erythrocytes - 2.7 × 1012 / l, hemoglobin - 80 g / l, CP - 0.9, reticulocytes - 0.5%, leukocytes - 5 × 109 / l, eosinophils - 1%, basophils - 3 %, stab - 7%, segmented - 60%, lymphocytes -

23%, monocytes - 2%, plasma cells - 4%, platelets - 280×109/l, ESR - 64 mm/h. Total blood protein - 120 g/l. Urinalysis: protein 2.5 g per day. X-ray of the skull: foci of bone destruction. What method of research to confirm the diagnosis will be the most informative?
A. Serum protein electrophoresis
B. Sternal puncture
B. Lymph node biopsy
D. Waal-Rose reaction
D. Schilling test
#6
Patient K., 24 years old, 2 months ago noticed an enlarged lymph node on the neck on the left, then weakness, sweating, itching of the skin, an increase in body temperature up to 39 ° C appeared. The use of sulfadimesine and oxacillin had no effect. On examination, the skin is of normal color, on the left side of the neck there are two lymph nodes with a diameter of 1.5 and 2 cm, of medium density, painless. No changes were found in the internal organs. Blood test: erythrocytes - 4.2 × 1012 / l, hemoglobin - 132 g / l, CP - 0.9, leukocytes - 9.6 × 109 / l, eosinophils - 5%, stab - 8%, segmented - 73% , lymphocytes - 10%, monocytes - 4%, ESR - 32 mm/h. Previous diagnosis?
A. Chronic lymphocytic leukemia
B. Infectious mononucleosis
B. Non-Hodgkin's lymphoma
D. Myeloma
D. Lymphogranulomatosis
#7
A 43-year-old patient was diagnosed with non-Hodgkin's lymphoma. What changes in the clinical analysis of blood are characteristic for this disease? A. hypochromic anemia.
B. neutrophilic leukocytosis.
B. leukopenia.
G. lymphocytosis.
D. lymphopenia..
#8
A 24-year-old patient noticed an enlarged lymphovusole on the left neck 3 months ago. On examination, the skin is of normal color, on the left side of the neck there are two lymph nodes 2 cm in diameter, of medium density, painless. No changes were found in the internal organs. Blood test: erythrocytes - 4.2 × 1012 / l, hemoglobin - 132 g / l, CP - 0.9, leukocytes - 9.6 × 109 / l, eosinophils - 5%, stab - 8%, segmented - 73% , lymphocytes - 10%, monocytes - 4%, ESR - 32 mm/h. Hodgkin's disease, clinical stage I was diagnosed. What is the optimal treatment strategy?
A. Polychemotherapy and radiotherapy
B. Radiotherapy
B. Blood transfusion
G. Plasmapheresis
D. Hormone therapy, cytostatics
№9 Patient, 47 years old, suffers from non-Hodgkin's lymphoma. The general condition of the patient is satisfactory. What drug should be used for monotherapy?
A. Vincristine.
B. Fludarabine.
B. Imatinib.
G. Prednisolone.
D. Mustargen.
No. 10 A 34-year-old patient complained of an increase in lymph nodes in the neck, a feeling of heaviness in the abdomen, and general weakness. Objectively: asymmetric enlargement of the lymph nodes in the neck - conglomerate, ossalgia, hepatosplenomegaly. Hemogram: anemia, accelerated ESR, leukocytosis, neutrophilia, eosinophilia, lymphopenia, monocytosis. Lymph node puncture: Reed-Sternberg cells were detected. What is your diagnosis?
A. Chronic lymphocytic leukemia
B. Acute lymphoblastic leukemia
B. Reactive lymphadenopathy
G. Lymphogranulomatosis
D. Non-Hodgkin's lymphoma
No. 11 Patient P., 62 years old, accidentally felt in his left subclavian fossa a dense, slightly larger than a pea, mobile nodule, not soldered to the skin. Upon questioning, it turned out that over the past 6 months he had lost 12 kg. Notes weakness, decreased ability to work, decreased appetite. What study is the first to establish the diagnosis?
A. Esophagogastroduodenoscopy
B. Puncture of the lymph node
B. Sternal puncture
D. Chest X-ray
D. Ultrasound of the abdominal organs

№12 Patient, 54 years old, suffers from multiple myeloma. What drugs should be prescribed for chemotherapy in the first place?
A. Chlorambucil and cyclophosphamide
B. Rituximab and fludarabine
B. α2-interferon and dexamethasone
G. Melphalan and prednisolone
D. Allopurinol and calcitonin
№13 Patient N., 27 years old, came to the clinic with complaints of an increase in lymph nodes on the right neck and in the inguinal region, night sweats, fever above 38°C. Morphological examination of the lymph node biopsy revealed Berezovsky-Shtenberg cells. What is the diagnosis of this patient?
A. Chronic lymphocytic leukemia
B. Lymphogranulomatosis
B. Malignant lymphoma
D. Tuberculosis of the lymph nodes
D. Cancer metastases to the lymph nodes
№14 In a 49-year-old man, during a preventive screening examination, an increase in ESR was detected in the blood test, and proteinuria in the urine test. An objective examination revealed no signs of pathology. With additional examination: biochemical blood test - an increase in the level of total protein, in the urine - Bence-Jones protein. Diagnosis?
^ A. Multiple myeloma
B. Lymphogranulomatosis
B. Acute leukemia.
D. Chronic glomerulonephritis.
D. Primary amyloidosis
№15 A patient with multiple myeloma, who takes melphalan and prednisone, developed cough, shortness of breath, fever after hypothermia. After clinical, laboratory and X-ray examination, pneumonia was diagnosed. What treatment strategy should be followed in this case?
^ A. Change chemotherapy regimen
B. Switch to monotherapy with glucocorticoids
B. Prescribe antibiotics and detoxification drugs
^ D. Conduct a course of radiation therapy
E. In addition, prescribe α2-interferon
Test questions.
Define lymphomas and lymphosarcomas.
Define Hodgkin's lymphoma (lymphogranulomatosis).
Give a list of possible etiological factors of Hodgkin's disease.
To characterize the main pathogenetic mechanisms of the development of lymphogranulomatosis.
Describe the main clinical manifestations of Hodgkin's disease.
Give a classification of the clinical stages of Hodgkin's disease.
Provide a list of laboratory and instrumental diagnostic criteria for Hodgkin's disease.
Give a list of diseases with which it is necessary to carry out differential diagnostics in case of lymphogranulomatosis.
Determine the treatment program for Hodgkin's disease.
To characterize preventive measures and determine the prognosis for lymphogranulomatosis.
Define non-Hodgkin's lymphoma.
To characterize the etiology and pathogenesis of non-Hodgkin's lymphomas.
Give the international classification of malignant lymphoma REAL.
Describe the common clinical manifestations of non-Hodgkin's lymphomas.
Provide a description of laboratory data and the results of instrumental studies in non-Hodgkin's lymphomas.
Give general diagnostic criteria for non-Hodgkin's lymphomas.
Provide a list of diseases with which it is necessary to carry out differential diagnosis in non-Hodgkin's lymphomas.
Define a treatment program for non-Hodgkin's lymphomas.
To characterize preventive measures and determine the prognosis for non-Hodgkin's lymphomas.