METHODOLOGICAL INSTRUCTIONS FOR PRACTICAL CLASSES

Discipline: "Blood and lymph in pathology"
Discipline code: KLP 3303
Name and code of the OP: 6B10115 "Medicine"
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The methodological instructions for practical classes have been developed in accordance with the working curriculum of the discipline (syllabus) and discussed at the department meeting

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Head of the Department, md, Professor E.K. Bekmurzayeva. _____

Practical lesson №1

1. Topic No. 1 Methods of examination of patients with pathology of the hematopoietic system. Diagnostic value. Questioning, complaints of patients with pathology of the hematopoietic system. Data of physical methods of examination of the hematopoietic system. General examination: palpation and percussion of the spleen: technique. Palpation of the lymph nodes.

2. Objective: To teach students the principles of examining patients with diseases of the hematopoietic system (main and additional complaints, questioning, general examination, features of the anamnesis of life and illness, palpation of the lymph nodes, palpation and percussion of the spleen).

3. Learning objectives:

The student should know:

1. Anatomical and physiological structure of the hematopoietic system.
2. Histophysiology of the blood system.
3. Basic physical and chemical properties of blood.

The student should be able to:

1. Correctly formulate questions when collecting complaints and anamnesis of life and illness.
2. Establish a relationship of trust with patients.
3. Assess the general condition of a patient with a pathology of the hematopoietic system.

4. Main questions of the topic:

1. What are the main complaints of patients with diseases of the hematopoietic system?
2. What are the main objective changes in diseases of the hematopoietic system?
do you know?
3. What information does palpation and percussion of the spleen provide?
4. How is palpation of lymph nodes performed?
5. What laboratory tests are used for diagnosis?
6. What information does an ultrasound examination of the lymph nodes provide?

Situational tasks:

1. A 45-year-old woman consulted a doctor complaining of general weakness, rapid fatigue, shortness of breath during physical exertion, and frequent dizziness. Examination revealed pale skin, brittle nails, and dry hair. A general blood test showed hemoglobin – 85 g/l; red blood cells – 3.2×1012/l, color index – 0.7. Your preliminary diagnosis:
2. A 62-year-old man, at a therapist's appointment, complains of constant fatigue, dizziness, loss of appetite, dry mouth. On examination: pale skin with a slight yellowness, a varnished tongue. A general blood test shows: hemoglobin 70 g / l, erythrocytes - 2.5 × 1012 / l, color index - 1.2; macrocytosis, hyperchromia. In the biochemical analysis: increased bilirubin levels. Your preliminary diagnosis:

3. A 30-year-old woman consulted a doctor complaining of shortness of breath when walking, general weakness, and decreased performance. History: recently had a viral infection. On examination: pale skin, tachycardia up to 110 beats per minute. General blood test: hemoglobin 95 g/l, erythrocytes 2.9×1012/l, reticulocytes 0.5. Bone marrow analysis: decreased number of erythroid cells. Your preliminary diagnosis:
4. A 40-year-old woman consulted a doctor complaining of general weakness, dizziness, shortness of breath during physical exertion, and brittle nails. Her medical history shows that she has heavy menstrual periods lasting more than 7 days. Blood test results: hemoglobin - 85 g/l; erythrocytes - 3.2×1012/l; color index - 0.7; serum iron - 5 μmol/l. Specify the causes of anemia in this case:

5. Methods/technologies of learning and teaching: Discussion of the topic of the practical lesson, solving situational problems, learning and implementing practical skills.

6. Assessment methods/technologies Oral Questioning Checklist, Practical Skills Checklist.Completing and defending a medical history report.
7. Literature:main, additional indicated at the end of the syllabus
8. Control(questions, tests, tasks, etc.):
Test questions:

1. How does the blood clotting process occur?
2. What causes bleeding gums, nose and intestines?
3. What information does palpation of the lymph nodes provide?
4. What should you pay attention to during a general examination of patients?
5. What do you know are the main reasons for a decrease in red blood counts?

Test questions:

1. Correct definitions of color index:
A. degree of saturation of erythrocytes
B. hemoglobin
C. increase or decrease in hemoglobin levels
D. increase or decrease in leukocytes
E. increase or decrease in red blood cells
2. In case of diseases of the hematopoietic organs, palpation is not necessary:
A. muscles
B. lymph nodes
C. liver
D. spine and flat bones
E. spleen
3. Spleen sizes according to Kurlov:
A. 6-8 cm x 4-6 cm
B. 3-5 cm x 2-4 cm
C. 4-6 cm x 2-4 cm
D. 8-10 mm x 6-8 mm6
E. 10-12mm x 8-10mm
4. The content of red blood cells in the norm of red blood cells in women:

A. 3.4 – 5.0 x 1012 \l
B. 3.0 x 1012 \l
C. 5.0 x 1012 \l
D. 2.5 x 1012 \l
E. 2.5 – 5.5 x 1012 \l

5. Normal red blood cell count in men:
A. 4.0 – 5.6 x 1012 \l
B. 3.0 – 4.8 x 1012 \l
C. 3.0 x 1012 \l
D. 2.5 x 1012 \l
E. 2.5 – 5.5 x 1012 \l

6. The number of platelets is normal:
A. 180 – 320 x 109 \l
B. 50.0 – 180.0 x 109 \l
C. 250.0 – 400.0 x 109 \l
D. 350.0 – 450.0 x 109 \l
E. 150.0 – 200 x 109 \l

7. An increase in the number of platelets is:
A. thrombocytosis
B. thrombopathy
C. thrombopenia
D. thromboembolism
E. thrombocytopenic purpura

8. A decrease in the number of platelets is:
A. thrombocytopenia
B. thrombocytopathy
C. thrombocytosis
D. thromboembolism
E. thrombocytopenic purpura

9. "Thrombocytopenia" is:
A. decrease in platelet count
B. platelet hypofunction
C. increase in platelet count
D. platelet hyperfunction
E. decrease in the number of platelets and red blood cells

10. Increased white blood cell count:
A. leukocytosis
B. leukopenia
C. cytopenia
D. pancytopenia
E. cytopenia, leukoplakia

11. Specify a characteristic laboratory sign for B12 deficiency anemia:
A. igh color index
B. thrombocytosis
C. leukocytosis
D. increase in erythrocyte sedimentation rate

E. lymphocytosis
12. The substrate of acute leukemia is:
A. leukemic blast cells
B. leukemic maturing cells
C. mature leukemia cells
D. immature leukemia cells
E. plasma cells
13. Acute leukemia is a tumor originating from:
A. bone marrow
B. hematopoietic tissue of lymph nodes
C. reticuloendothelial tissue of the liver
D. reticuloendothelial tissue of the spleen
E. liver endothelial tissue
14. Indicate the necessary factor for the absorption of vitamin B-12:
A. gastromucoprotein
B. hydrochloric acid
C. gastrin
D. pepsin
E. folic acid
15. Name a common cause of anemia in acute leukemia:
A. violation of the formation of red blood cells in the bone marrow
B. violation of the formation of leukocytes in the bone marrow
C. violation of erythropoietin production
D. iron malabsorption
E. a disorder of platelet formation in the bone marrow
16. The normal number of platelets in the blood is:
A.180 – 320 x 109 \l
B.50.0 – 180.0 x 109 \l
C.250.0 – 400.0 x 109 \l
D.350.0 – 450.0 x 109 \l
E.150.0 – 200.0 x 109 \l
17. An increase in the number of platelets in the blood is called:
A.thrombocytosis
B.leukocytosis
S.poikilocytosis
D.anisocytosis
E. erythrocytosis
18. "Thrombocytopenia" means:
A. decrease in the number of platelets
B. hypofunction of platelets
C.increase in the number of platelets in the blood
D.platelet hyperfunction
E. decrease in the number of red blood cells
19. An increase in the number of leukocytes in the blood is called:
A. leukocytosis
B. erythrocytosis

C. lymphocytosis
D.thrombocytosis
E. anisocytosis
20. A decrease in the number of leukocytes in the blood is called:
A.leukopenia
B.erythropenia
C. lymphopenia
D. lymphocytosis
E. leukocytosis

Practical lesson #2

Topic No. 2. Leading clinical syndromes (anemic) in hematology. Diagnostic value.
2. Objective: To familiarize with the leading clinical anemic syndrome, to learn the causes, predisposing factors, clinical signs and to learn the basics of diagnostics, to familiarize with laboratory and instrumental research methods, to give them a diagnostic interpretation.
3. Learning objectives:
The student should know:
1. The mechanism of development of anemic syndrome.
2. Main complaints of patients with anemic syndrome.
3. Causes of development of anemic syndrome.
The student should be able to:
1. Conduct a survey of patients with anemic syndrome.
2. Conduct a general examination of the patient and identify changes in the general status characteristic of anemic syndrome.
3. Conduct a physical examination of patients with anemic syndrome.

4. Main questions of the topic:

1. What predisposing factors do you know that lead to the development of anemia? syndrome?
2. What complaints do patients with anemic syndrome present?
3. What palpable changes can be detected in anemic syndrome?
4. What do you know about the causes of anemic syndrome?
5. What laboratory and instrumental research methods are used for diagnosis of anemic syndrome?
5. Methods/technologies of learning and teaching: Discussion of the topic of the practical lesson, solving situational problems, learning and implementing practical skills.

6. Assessment methods/technologies(testing, solving situational problems, filling out medical history, etc.):
7. Literature:main, additional indicated at the end of the syllabus
8. Control(questions, tests, tasks, etc.):
Questions:
1. What objective features do you know that are characteristic of anemic syndrome?
2. What forms of anemia do you know according to the degree of bone marrow regeneration?

3. What forms of hemostasis disorders do you know?
4. What predisposing factors do you know that lead to the development of anemia? syndrome?

Situational tasks:

1. A 52-year-old female patient was admitted to hospital. She complains of severe weakness, dizziness, shortness of breath with minimal physical exertion, brittle nails, hair loss. Decreased appetite. Sleep is preserved. The patient has difficulty getting out of bed even to go to the toilet. She is embarrassed to use the bedpan in the presence of strangers (there are four other patients in the ward), so she tries to "be patient". The position in bed is active.
Height 165 cm, body weight 86 kg. Skin and visible mucous membranes are pale, hair dull, brittle nails. Respiratory rate 20 per min., pulse 76 per min., rhythmic. Blood pressure 110/70 mm Hg.

2. A 52-year-old patient was hospitalized. Two years ago, the patient underwent gastric resection due to severe cicatricial deformation. About a month ago, the patient gradually developed severe weakness, began to feel dizzy, he went to the clinic and was sent for hospitalization. During the treatment, the state of health significantly improved, but the patient is depressed, afraid to be discharged, as it seems to him that at home without treatment the condition will immediately worsen. The condition is satisfactory, height 172 cm, weight 71 kg, body temperature 36.6 ° C, the abdomen is soft, painless, pulse 76 per minute, blood pressure 130/85 mm Hg.
3. A 46-year-old woman consulted a doctor complaining of general weakness, dizziness, shortness of breath during physical exertion, hair loss, and brittle nails. Her medical history shows that she has heavy menstrual periods lasting more than 8 days. Blood test results: hemoglobin - 83 g/L; erythrocytes - 3.1×1012/L; color index - 0.6; serum iron - 5 μmol/L. Your preliminary diagnosis:

4. A 55-year-old man consulted a therapist complaining of constant fatigue, shortness of breath, and weight loss. Examination revealed pale skin and mucous membranes. History: chronic gastritis with low acidity. A complete blood count showed: hemoglobin - 88 g/l; red blood cells - 3.4×1012/l; color index - 0.6; serum iron - 5 μmol/l; ferritin - 7 ng/ml. Name an additional informative research method:

Test questions:
1. A 27-year-old woman was admitted to hospital with complaints of blood in her urine, pain in the lumbar region, and a rash on her legs. History: the disease began acutely a week after suffering bronchitis. Examination revealed a severe hemorrhagic rash on the skin of her shins. Urinalysis: proteinuria 2 g/l, hematuria. Blood creatinine is elevated. Specify a possible complication in this case:
A. acute renal failure
B. acute heart failure
C.aplastic anemia
D.B-12 deficiency anemia
E. autoimmune hemolytic anemia

2. A 40-year-old man consulted a doctor with complaints of severe swelling in the lower extremities, frequent purple rash, general weakness, and decreased daily diuresis. History: chronic tonsillitis. Blood tests: total blood protein decreased - 58 g/l; hypoalbuminemia, proteinuria - 4 g/l; hematuria. Your preliminary diagnosis:
A.hemorrhagic vasculitis
B.aplastic anemia
C. chronic myelogenous leukemia
D. chronic lymphocytic leukemia
E. autoimmune hemolytic anemia
3. A 35-year-old man was admitted to hospital with complaints of general weakness, shortness of breath, and fever. He had a viral infection 2 weeks before. Examination revealed pale skin, yellow sclera, and moderate tachycardia. Blood test results: hemoglobin 90 g/l; reticulocytes 20%; indirect bilirubin 70 μmol/l. Coombs test is positive. Your preliminary diagnosis:
A.autoimmune hemolytic anemia
B.aplastic anemia
C. chronic lymphocytic leukemia
D. chronic myelogenous leukemia
E.B-12 deficiency anemia
4. A 28-year-old man was admitted to hospital complaining of sudden weakness, shortness of breath, and palpitations. He had taken an antibiotic 2 weeks before. Examination revealed yellowness of the sclera and skin, and tachycardia. Blood test results: hemoglobin - 60 g/l; reticulocytes - 18%; total bilirubin - 55 μmol/l; indirect - 50 μmol/l; Coombs test - positive. What is the cause of this condition?
A. drug-induced autoimmune hemolytic anemia
B.aplastic anemia
C.B-12 deficiency anemia
D. chronic lymphocytic leukemia
E. Chronic myelogenous leukemia
5. A 35-year-old man came to see a therapist complaining of severe weakness, dizziness, shortness of breath during physical exertion, and the appearance of bruises on the body for no apparent reason. On examination: the skin is pale, there are multiple petechiae and ecchymoses on the skin. In the general blood test: hemoglobin - 70 g / l; leukocytes - 2.0 × 109 / l, platelets - 20 × 109 / l, reticulocytes - 0.5%. Your preliminary diagnosis:
A. aplastic anemia
B. idiopathic thrombocytopenic purpura
C.autoimmune hemolytic anemia
D.B-12 deficiency anemia
E. Chronic myelogenous leukemia
6. A 25-year-old woman consulted a doctor complaining of unexplained bruising, frequent nosebleeds, and increased bleeding from the gums. History: a viral infection 2 weeks ago. Examination revealed multiple petechiae and ecchymoses on the skin of the trunk and extremities. Blood pressure: 110/70 mm Hg, heart rate: 76 beats per minute. Blood test: platelets: 20×109/l, hemoglobin: 130 g/l, leukocytes×109/l. Your preliminary diagnosis:
A. idiopathic thrombocytopenic purpura
B.aplastic anemia
C.autoimmune hemolytic anemia

D.B-12 deficiency anemia
E. Chronic myelogenous leukemia
7. A 44-year-old man's general blood test revealed the following changes: hemoglobin - 85 g/l, erythrocytes - 2.9 x 1012 \l, leukocytes - 3.7 x 109 \l, erythrocyte sedimentation rate - 52 mm/hour, platelets - 95 x 109 \l. The doctor referred him for further examination. Name an informative research method to clarify the diagnosis:
A.sternal puncture
B. gastric endoscopy
S. puncture of lymph nodes
D. fecal occult blood test
E. determination of serum iron in the blood
8. A 47-year-old man was admitted to hospital with complaints of spontaneous hemorrhages on the skin, nosebleeds, and severe weakness. There is no history of chronic diseases. On examination: multiple ecchymoses on the lower extremities, small hemorrhages on the mucous membranes. Blood test: platelets - 11×109/l, hemoglobin - 118 g/l, erythrocyte sedimentation rate -16 mm/h; leukocytes - 4×109/l. Specify an informative diagnostic method:
A. bone marrow examination
B.endoscopic examination of the stomach
S. puncture of lymph nodes
D. fecal occult blood test
E.determination of ferritin in the blood
9. A 28-year-old man complains of decreased appetite, unsteadiness of gait, and general weakness during a doctor's appointment. Examination reveals pale skin and mucous membranes. Blood tests reveal hemoglobin 70 g/l, macrocytosis, Joly bodies; erythrocytes 1.9 ×1012/l, color index 1.3. Bone marrow reveals megaloblastic hematopoiesis. Your preliminary diagnosis:
A.B-12 deficiency anemia
B.iron deficiency anemia
S. acute leukemia
D. chronic lymphocytic leukemia
E. hemolytic anemia
10. A 42-year-old woman consulted a doctor complaining of increased fatigue, dizziness, hair loss, and brittle nails. History: uterine fibroids and menorrhagia. Blood tests revealed: hemoglobin - 80 g/l, hypochromia, microerythrocytosis. Your preliminary diagnosis:
A.iron deficiency anemia
B.V-12 deficiency anemia
S. sickle cell anemia
D.aplastic anemia
E. hereditary spherocytosis
11. A woman is 42 years old,At the doctor's appointment, the patient complains of fever, frequent bleeding from the gums and nose, enlarged lymph nodes, and general weakness. Upon examination: pale skin and mucous membranes, presence of subcutaneous hemorrhages.Blood tests revealed: signs of anemia, thrombocytopenia, blastosis in peripheral blood. Specify the pathological condition for which this laboratory picture is characteristic:
A. acute leukemia
B. chronic myelogenous leukemia
C. iron deficiency anemia

D.B-12 deficiency anemia
E. aplastic anemia
12. An 18-year-old female patient is visiting a doctor,complains of enlarged cervical lymph nodes and severe weakness.The blood test shows: pancytopenia and high blastosis in the bone marrow 78%, the reaction to myeloperoxidase is "negative". Your preliminary diagnosis:
a. acute lymphocytic leukemia
B. chronic myelogenous leukemia
C.B-12 deficiency anemia
D.aplastic anemia
E. hemolytic anemia
13. A 25-year-old man came to the doctor complaining of severe weakness, dizziness, shortness of breath during physical exertion, and the appearance of bruises on the body for no apparent reason. The blood test shows: erythrocytes - 1.8 × 1012 / l, hemoglobin - 36 g / l, color index - 0.9, leukocytes - 1.6 × 109 / l, platelets - 5.0 × 109 / l. Your preliminary diagnosis:
a. aplastic anemia
B. hemolytic anemia
C.B-12 deficiency anemia
D.iron deficiency anemia
E. thrombocytopenic purpura
14. A 65-year-old man consulted a doctor complaining of general weakness, increased fatigue, sweating, and a 5 kg weight loss over the past 3 months. Upon examination: pale skin, enlarged cervical and axillary lymph nodes (up to 2 cm), moderate splenomegaly. A general blood test showed: leukocytes - 55×10⁹/l, lymphocytes - 80%, hemoglobin - 100 g/l, platelets - 150×10⁹/l. Your preliminary diagnosis:
A. chronic lymphocytic leukemia
B. chronic myelogenous leukemia
C.aplastic anemia
D. hemolytic anemia
E. hereditary spherocytosis
15. A 62-year-old woman consulted a doctor complaining of a feeling of heaviness in the left hypochondrium and periodic nosebleeds. Examination revealed severe splenomegaly. Laboratory data: leukocytes - 95×10⁹/l, lymphocytes - 92%, hemoglobin - 88 g/l, platelets - 90×10⁹/l. Blood biochemistry: LDH - increased, bilirubin - normal. Name the causes of splenomegaly and thrombocytopenia:
A. chronic lymphocytic leukemia
B. chronic myelogenous leukemia
C. hereditary spherocytosis
D.aplastic anemia
E. autoimmune hemolytic anemia
16. A 68-year-old woman was admitted to hospital with complaints of increased fatigue, night sweats, abdominal pain and weight loss. It is known from the anamnesis that chronic lymphocytic leukemia was diagnosed 3 years ago, chemotherapy was administered, the patient is in remission. Examination revealed enlarged axillary and cervical lymph nodes and splenomegaly. Laboratory data: leukocytes - 150×10⁹/l, lymphocytes - 85%, hemoglobin - 95 g/l, platelets - 120×10⁹/l, LDH - increased. Specify the signs of a relapse of the disease in this case:
A. enlarged lymph nodes, splenomegaly and increased LDH levels

B. enlarged liver, increased fatigue
S. night sweats, decreased hemoglobin levels
D. abdominal pain, decreased platelet levels
E. weight loss
17. A 55-year-old man visits a doctor and complains of frequent respiratory infections, enlarged cervical lymph nodes, and a 4 kg weight loss over the past 2 months. Laboratory data: leukocytes - 60×10⁹/l, lymphocytes - 85%, hemoglobin - 130 g/l, platelets - 150×10⁹/l. Further examination revealed antibodies to the herpes virus, as well as enlarged lymph nodes in the chest. Your preliminary diagnosis:
A. chronic lymphocytic leukemia with infectious complications
B. chronic myelogenous leukemia
C. hereditary spherocytosis
D.aplastic anemia
E. autoimmune hemolytic anemia
18. A 63-year-old woman was admitted to hospital complaining of general weakness and enlarged lymph nodes. Laboratory blood tests show: leukocytes - 130×10⁹/l, lymphocytes - 90%, hemoglobin - 95 g/l, platelets - 110×10⁹/l, LDH - a significant increase is noted. Your preliminary diagnosis:
A.chronic lymphocytic leukemia
B. chronic myelogenous leukemia
C.aplastic anemia
D. acute leukemia
E. autoimmune hemolytic anemia
19. Marked splenomegaly is a characteristic sign of:
A. chronic myelogenous leukemia
B. chronic lymphocytic leukemia
C.B-12 deficiency anemia
D. acute leukemia
E.autoimmune hemolytic anemia
20. A 70-year-old woman, diagnosed with chronic lymphocytic leukemia, is undergoing observation treatment, as she has no pronounced symptoms of the disease. During a routine examination, enlarged lymph nodes in the neck and mild splenomegaly were noted. Blood tests show: leukocytes - 50×10⁹/l, lymphocytes - 88%, platelets - 160×10⁹/l, hemoglobin - 130 g/l. Your preliminary diagnosis:
A. asymptomatic chronic lymphocytic leukemia
B. asymptomatic chronic myelogenous leukemia
C.aplastic anemia
D. hereditary spherocytosis
E. autoimmune hemolytic anemia

Practical lesson #3

1. Topic No. 3. Leading clinical syndromes (hemorrhagic and thrombocytopenic) in hematology. Diagnostic value. Predisposing factors and causes leading to the development of hemorrhagic and thrombocytopenic syndromes. Questioning, complaints, anamnestic features, general examination and objective data of the patient. Laboratory and instrumental research methods for leading clinical syndromes of diseases of the organs of the hematopoietic system.

2. Objective: To familiarize students with the leading clinical hemorrhagic and thrombocytopenic syndromes in hematology, to learn the causes, clinical signs and the basics of diagnostics, to familiarize them with laboratory and instrumental research methods, to give them a diagnostic interpretation.

3. Learning objectives:

The student should know:

1. The mechanism of development of hemorrhagic and thrombocytopenic syndromes.
2. Main complaints of patients with hemorrhagic and thrombocytopenic syndromes.
3. Causes of development of hemorrhagic and thrombocytopenic syndromes.

The student should be able to:

1. Conduct a survey of patients with hemorrhagic and thrombocytopenic syndrome.
2. Conduct a general examination of the patient and identify changes in the general status characteristic of hemorrhagic and thrombocytopenic syndrome.
3. Conduct a physical examination of patients with hemorrhagic and thrombocytopenic syndrome.

4. Main questions of the topic:

1. What predisposing factors do you know that lead to the development of chronic lymphocytic leukemia?
2. What complaints do patients with acute leukemia present?
3. What palpable changes can be detected in chronic lymphocytic leukemia?
4. What is hemorrhagic vasculitis?
5. What do you know about the causes of hemorrhagic vasculitis?
6. What laboratory and instrumental research methods are used for diagnostics of hemorrhagic syndrome?
7. What predisposing factors do you know that lead to the development of thrombocytopenic purpura?
8. What complaints do patients with thrombocytopenic purpura present?
9. What palpable changes can be detected in thrombocytopenic purpura?
10. What is thrombocytopenic purpura?
11. What are the causes of idiopathic thrombocytosis?
12. What laboratory and instrumental research methods are used for diagnosis of thrombocytopenic purpura?

5. Methods/technologies of learning and teaching: Discussion of the topic of the practical lesson, solving situational problems, learning and implementing practical skills.
6. Assessment methods/technologies(testing, solving situational problems, filling out medical history, etc.):
7. Literature:main, additional indicated at the end of the syllabus
8. Control(questions, tests, tasks, etc.):
Questions:

1. What stages of development of acute leukemia do you know?
2. What forms of anemia do you know according to the degree of bone marrow regeneration?
3. What is hemorrhagic vasculitis?
4. What is lymphoid depletion?
5. What predisposing factors do you know that lead to the development of hemorrhagic vasculitis?
6. What stages of development of thrombocytopenic purpura do you know?
7. What forms of anemia do you know according to the degree of bone marrow regeneration?
8. What is thrombocytopenic purpura?
9. What is thrombocytopenia?
10. What predisposing factors do you know that lead to the development of thrombocytopenic purpura?

Situational tasks:
1. A 30-year-old woman complains of severe weakness (cannot get out of bed), chills, profuse sweating, pain in the mouth and throat when swallowing. Objectively: the skin is pale, moist, with profuse hemorrhagic rash. There are purulent-necrotic changes on the mucous membrane of the oral cavity and palatine tonsils. T - 39.20C, pulse - 98 per 1 minute, BP 110/60 mm Hg, RR - 22 per min., Hb in the blood is 90 g / l, leukocytes - 26 x 109, ESR - 40 mm / hour. The patient has a subclavian catheter on the right. Sternal puncture is prescribed. What is the expected result?

2. A 21-year-old female patient was admitted to the hospital. She complains of rapid fatigue, weight loss, increased body temperature to subfebrile numbers, tendency to subcutaneous hemorrhages, severe pain in the mouth and throat. Due to pain when swallowing, it is difficult to eat and drink. He notes the lack of taste in food, although his appetite is preserved. There are multiple small subcutaneous hemorrhages on the extremities. The mucous membranes of the mouth and throat are hyperemic, bleed when touched, there are ulcers on the gums, the tongue is coated, purulent plaque on the tonsils. Temperature 37.3 ° C. Pulse 88 beats per minute is satisfactory, blood pressure 120/80 mm Hg, respiratory rate 18 per minute.

3.A 32-year-old female patient has been under observation for a year with a diagnosisidiopathic thrombocytopenic purpura. The platelet count ranges from 80 to 130 x 10^9/l. Recently, a fever (up to 38°C) resistant to antibiotics, pain in the joints of the hands have appeared. An examination revealed enlarged cervical and axillary lymph nodes, a decrease in the hemoglobin level to 90 g/l, and a positive Wasserman reaction. A suggestion has been made about the presence of systemic lupus erythematosus (SLE). Which symptom(s) allows one to assume this diagnosis in this situation?

4. A 19-year-old woman was admitted to the department with complaints of nosebleeds, bruises of varying size and age on the face, torso and limbs.
From the medical history it is known that two weeks before the onset of this disease she suffered from acute respiratory viral infection with subfebrile temperature.
Hemorrhages on the skin from pinpoint to ecchymosis appeared in the last 3 days, the number of hemorrhages is increasing. On the day of admission - prolonged bleeding from the nose. The doctor who examined the child in the admission department diagnosed hemorrhagic vasculitis.
On admission, the girl's condition is serious due to severe cutaneous hemorrhagic syndrome and ongoing nosebleeds. There is abundant petechial rash on the skin of the face, trunk and extremities, ecchymoses of varying age, ranging in size from 0.5 to 2.0 cm in diameter. There are multiple petechiae on the mucous membranes of the oral cavity. There are wet tampons soaked in blood in the nasal passages. The peripheral lymph nodes of the cervical and axillary groups are small, painless, and mobile. Breathing is evenly distributed throughout the lungs, there are no wheezing. Cardiac activity is satisfactory, heart rate is 105 beats per 1 min. Blood pressure is 95/60 mm Hg. The abdomen is soft and painless. The liver and spleen are not palpable.

Test questions:

1. A 28-year-old woman, a vegan, came to the doctor with complaints of rapid fatigue, dizziness, pain in the lower extremities, especially at night. On examination: pale skin. Blood tests revealed: megaloblastic erythrocytes, low levels of vitamin B12 and increased homocysteine levels. Your preliminary diagnosis:
A. deficiency anemia due to lack of vitamin B12
B.aplastic anemia
C. iron deficiency anemia
D.autoimmune hemolytic anemia
E. hereditary spherocytosis
2. A 55-year-old man, at a therapist's appointment, complains of general weakness, impaired coordination, and numbness in the lower and upper extremities. History: gastric ulcer, has been taking proton pump inhibitors for a long time. Blood tests reveal megaloblastic anemia and vitamin B12 deficiency. Specify the cause of vitamin B12 deficiency:
A. Vitamin B12 deficiency can be caused by long-term use of proton pump inhibitors.
B. Vitamin B12 deficiency can be caused by psycho-emotional stress. C. Vitamin B12 deficiency can be caused by chronic inflammatory process.
D. Vitamin B12 deficiency can be caused by folate deficiency.
E. Vitamin B12 deficiency can be caused by intestinal dysbacteriosis
3. A 50-year-old woman, at a therapist's appointment, complains of a constant feeling of fatigue, sleep disorders, and depressive mood. From the anamnesis: the patient has no history of gastrointestinal diseases, she does not adhere to a strict diet. Blood tests revealed: anemia with macrocytic red blood cells and low levels of vitamin B12. Specify the cause of vitamin B12 deficiency:
A. intestinal absorption disorder due to decreased function of the gastric mucosa
B. intestinal malabsorption due to lack of vitamin D
C. intestinal absorption disorders due to long-term use of drugs

D. intestinal absorption disorder due to iron deficiency
E. intestinal malabsorption due to folate deficiency
4. A 34-year-old woman, 14 weeks pregnant, consulted a doctor complaining of general fatigue, dizziness, and frequent headaches. Examination revealed pale skin, tachycardia of 98 beats per minute, decreased hemoglobin levels to 90 g/l, normal red blood cell volume, decreased serum folate levels. Your preliminary diagnosis:
A.folate deficiency anemia
B.iron deficiency anemia
C.aplastic anemia
D.autoimmune hemolytic anemia
E. hereditary spherocytosis
5. A 25-year-old woman complains of general fatigue and headache at a doctor's appointment. Blood tests show: hemoglobin level 95 g/l, decreased ferritin level, normal vitamin B-12 level, decreased folate level. Your preliminary diagnosis:
A.folate deficiency anemia
B.iron deficiency anemia
C.aplastic anemia
D.autoimmune hemolytic anemia
E. hereditary spherocytosis
6. A 68-year-old patient complains of general weakness, dizziness, and loss of appetite at a doctor's appointment. History: chronic gastritis and regular use of proton pump inhibitors. Blood tests show: hemoglobin level - 88 g/l, red blood cell volume is normal, folate level is reduced. Your preliminary diagnosis:
A.folate deficiency anemia
B.iron deficiency anemia
C.autoimmune hemolytic anemia
D.aplastic anemia
E.B-12 deficiency anemia
7. A 30-year-old woman suffering from insomnia and depression was found to have folate deficiency in her blood during examination. Indicate the importance of folate for the body:
A. plays a key role in DNA synthesis and in the normal functioning of the nervous system.
B. is involved in the formation of red blood cells in the bone marrow
WITH.participates in the formation of vitamin B-12 in the intestine
D.promotes the production of stress hormones in the body
E.important for the proper functioning of the liver and kidneys
8. To diagnose iron deficiency anemia and anemias associated with impaired heme synthesis, the main differential diagnostic feature is:
a. serum iron content
B. serum folic acid content
C. hemoglobin content in blood serum
D. leukocyte content in blood serum
E. lymphocyte content in blood serum
9. Indicate the cause of the development of funicular myelosis:
A.Methylmalonic acid metabolism disorder
B. Folic acid metabolism disorder
C.arachidonic acid metabolism disorder

D. violation of succinic acid metabolism
E.amino acid metabolism disorder
10. A 45-year-old man has a history of gastric resection 3 years ago. Blood test: red blood cell count is 2.0×1012/l; hemoglobin is 85 g/l; color index is 1.27. What vitamin absorption disorder caused this change in erythropoiesis:
A.B12
B.S.
S.R.R.
YES
E.B6
11. A 29-year-old man, at a doctor's appointment, complains of paresthesia in the feet and gait instability, rapid fatigue, dizziness, pain in the lower extremities. These symptoms in B-12 deficiency anemia are associated with:
A.funicular myelosis
B. hypokalemia
With alcoholic encephalopathy
D. residual effects of cerebrovascular accident
E.angiopathy of the arteries of the lower extremities
12. The main diagnostic method confirming the presence of acute leukemia is:
A. bone marrow examination
B. clinical blood test
S.Ultrasound of the abdominal cavity
D. echoencephalography
E.electrocardiography
13. Name the characteristic changes in the tongue in iron deficiency anemia:
A. papillary atrophy
B.raspberry tongue
S.varnished tongue
D.geographic tongue
E. teeth marks on the tongue
14. “Coagulopathies”:
A. associated with a violation of the plasma link of homeostasis
B. associated with vascular damage
C. are associated with a violation of the platelet homeostasis link
D. are associated with a violation of the vascular link of homeostasis
E. associated with taking medications
15. Name the characteristic signs in the blood for the third stage of chronic lymphocytic leukemia according to the RAI classification:
A. lymphocytosis and anemia
B.leukocytosis and erythrocytosis
S. leukocytosis and erythropenia
D.thrombocytosis and leukopenia
E. erythrocytosis and thrombocytopenia
16. Hepatosplenomegaly in acute leukemia is a manifestation of:
A. hyperplastic syndrome
B. hemorrhagic syndrome

S. infectious complications
D.anemic syndrome
E.sidoropenic syndrome
17. A 45-year-old woman, at a therapist's appointment, complains of general weakness, dizziness, shortness of breath during physical exertion. Examination reveals pale skin and tachycardia. Blood tests show a decrease in hemoglobin levels to 95 g/l, a decrease in serum iron levels to 5 μmol/l, and low ferritin levels. Your preliminary syndrome:
A.sidoropenic syndrome
B.thrombocytopenic syndrome
S. hemorrhagic syndrome
D.anemic syndrome
E.cytopenic syndrome
18. A 22-year-old man consulted a doctor complaining of general fatigue, brittle nails, hair loss, and frequent headaches. Tests revealed a decrease in the iron level in the blood and normal levels of other microelements. Your preliminary syndrome:
A.sidoropenic syndrome
B.cytopenic syndrome
S.anemic syndrome
D.thrombocytopenic syndrome
E. hemorrhagic syndrome
19. A 60-year-old patient's blood tests revealed decreased hemoglobin and iron levels, as well as increased transferrin levels. Name an additional diagnostic test to assess the level of iron deficiency:
A. Ferritin level test, endoscopic examination
B. iron level test, x-ray examination
WITH.Folate test, abdominal ultrasound
D.hemoglobin level assessment, brain MRI
E.B-12 level analysis, CT scan
20. A 30-year-old man, at a doctor's appointment, complains of general weakness, rapid heartbeat, and dark urine. From his anamnesis, he notes that he had an infectious disease with a high temperature a few days ago. Blood tests reveal elevated levels of bilirubin and reticulocytes, as well as decreased hemoglobin levels. Blood microscopy shows spherocytes. Your preliminary diagnosis:
A.autoimmune hemolytic anemia
B.B-12 deficiency anemia
C. thrombocytopenic purpura
D.iron deficiency anemia
E.hemorrhagic vasculitis