MINISTRY OF HEALTH OF UKRAINE
Ukrainian Medical Stomatological Academy

“Approved”
on the meeting of the department
Internal medicine № 3 with
phthisiology

“____” _____________ 20___ yr.
Protocol # _____ from _________
Head of the department
Borzykh O.A. __________________

METHODOICAL RECOMMENDATIONS
for students

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<th>Bases of internal medicine</th>
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<td>Bases of internal medicine</td>
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<td>Course</td>
<td>IV</td>
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Poltava – 2019
Methodical recommendations for practical classes for teachers
Methodical recommendations re-approved at the session of the department of internal medicine № 3 with phthisiology
1. Relevance of the topic: due to the high prevalence of diseases of hematopoiesis, their complications and the need to care for patients. Therefore, the ability to collect complaints, anamnesis, conduct an objective examination, the study of the rules of palpation and percussion and auscultation, the value of laboratory and instrumental research methods in patients with pathology of hematopoiesis is of great importance in proper diagnosis and preparation doctors of all specialties, including dentists. Main in diagnostic process - live contact with the patient, the feeling of the patient, an indication the beginning and subsequent course of the pathological process for reasons onset of the disease, physical examination - examination, palpation, percussion, auscultation and others. Laboratory - instrumental methods research should be evaluated in close relation to other indicators, obtained with the help of 5 doctor's feelings and synthesized in harmony diagnostic structure.

2. Specific goals:
Analyze: the state of a specific patient with pathology of hematopoiesis, to note the main syndromes, to set a specific plan of patient's examination, based on the existing pathological changes.
Explain: palpation, percussion and auscultation of the organs of hematopoiesis; major syndromes in haematology.
Suggest: on an example of clinical examination of a patient with pathology of hematopoiesis, to be able to identify the main clinical syndromes.
Classify: to group symptoms in syndrome.
To interpret: laboratory examination methods: clinical blood count and urine tests, biochemical blood test, methods of instrumental examination: ECG, X-ray, ultrasound, MRI, CT.
Compile: a plan for the examination of patients with pathology of hematopoiesis.

3. Basic level of preparation

<table>
<thead>
<tr>
<th>Names of previous disciplines</th>
<th>Obtained skills</th>
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<tbody>
<tr>
<td>1. Normal human anatomy</td>
<td>Knowledge about the localization of organs and systems of the human body. Knowledge about the organs of hematopoiesis.</td>
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<tr>
<td>3. Biochemistry.</td>
<td>Knowledge about laboratory methods and normal biochemical constants that are used in the examination of the organs of hematopoiesis</td>
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<tr>
<td>4. Ethics and deontology</td>
<td>Rules of treatment, communication with patients, their relatives, colleagues.</td>
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4. Tasks for independent work during the preparation for the class and on lessons.
4.1. Terminology

4.2 Theoretical questions to the class.
1. What are the hematopoietic organs?
Red bone marrow, thymus, lymph nodes, spleen.

2. How does the reproduction, differentiation of the main blood cells occur?
From birth, the development of primary pluripotent stem cells and myelopoiesis occurs in the bone marrow, while lymphopoiesis occurs in the thymus, spleen, and lymph nodes. Polypotent stem cells are capable of producing colonies of any blood cells. In their differentiation, there is the formation of two cell lines: lymphoid and myeloid. From the lymphoid, T - B - lymphocytes and the active form of B - lymphocytes - plasma cells subsequently develop. From myeloid - erythrocytes, granulocytes (neutrophils, basophils, eosinophils), monocytes, macrophages and megakaryocytes, which produce platelets.

3. What are erythrocytes and their functions?
Red blood cells - red blood cells - make up the bulk of blood cells. The leading place in the stimulation of erythrocytopoiesis and, accordingly, the provision of oxygen to the body belongs to erythropoietin, which is produced in the kidneys. The immediate precursors of erythrocytes are reticulocytes.

4. What are leukocytes, their functions?
Leukocytes are white blood cells. They contain nuclei and play a protective role. They are different in their structure and functions and circulate in the blood for a short time (up to several hours), migrating from the bone marrow to the lymphoid and other tissues. Leukocytes are precursors and components of other body systems. With the participation of leukocytes, inflammatory and immune reactions occur in the body.

5. Name the types of leukocytes.
There are 5 types of leukocytes: neutrophilic (stab and segmented), eosinophilic, basophilic granulocytes, monocytes and lymphocytes.

6. What are platelets?
Platelets are platelets that are formed from megakaryocytes. They play a key role in the implementation and regulation of almost all links of hemostasis, especially the primary (vascular-platelet).

7. What do the processes of hematopoiesis depend on and how are they regulated?
The processes of hematopoiesis - stimulation of stem cells, differentiation into germs and maturation depend on the state of the population of hematopoietic cells, their microenvironment, mature cells (monocytes, lymphocytes) and other factors. These processes are regulated by biologically active substances - cytokines, which also activate or suppress the functional activity and death of blood cells through apoptosis - a natural, active, genetically programmed and controlled death process.

8. Name the main methods of research of hematological patients, which are of diagnostic value.
General clinical examination, in particular, palpation of the liver, spleen, lymph nodes.
Special laboratory tests:
1) clinical blood test
2) myelogram - a cytological study of the qualitative and quantitative composition of bone marrow cells. Normally, the number of myelokaryocytes is 45 -170 x 10^9/l, and the ratio of myelocytes to erythrokaryocytes is 3: 1-4: 1.
3) trepanobiopsy - a histological examination of the bone marrow.
4) lymphadenocytogram - a cytological study of the qualitative and quantitative composition of the cells of the lymph node obtained during the puncture.
5) biopsy of lymph nodes - histological examination of lymph nodes after their surgical removal.

9. Name the indicators of a clinical blood test of a healthy person.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythrocytes, x 10^12/l</td>
<td>4,5 – 5,5</td>
<td>4, - 5,0</td>
</tr>
<tr>
<td>Hb, gramml/l</td>
<td>140 - 160</td>
<td>120 - 140</td>
</tr>
<tr>
<td>Leukocytes, x 10^9/l</td>
<td>4 - 9</td>
<td></td>
</tr>
<tr>
<td>Eosinophils %</td>
<td>1-3</td>
<td></td>
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<tr>
<td>Basophils %</td>
<td>0 -1</td>
<td></td>
</tr>
<tr>
<td>Segmented %</td>
<td>50 -70</td>
<td></td>
</tr>
<tr>
<td>Stab %</td>
<td>1-5</td>
<td></td>
</tr>
<tr>
<td>Lymphocytes %</td>
<td>20 - 35</td>
<td></td>
</tr>
<tr>
<td>Monocytes %</td>
<td>4 – 9</td>
<td></td>
</tr>
<tr>
<td>Platelets, x 10^9/l</td>
<td>50 - 450</td>
<td></td>
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### Color indicator

<table>
<thead>
<tr>
<th>Reticulocytes %</th>
<th>Erythrocyte sedimentation rate, mm/hour.</th>
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<tbody>
<tr>
<td>0.2 - 1</td>
<td>1 – 10</td>
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<tr>
<td>0.86 – 1.05</td>
<td>3 - 15</td>
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10. **What syndromes are most often observed in blood diseases?**

Anemic syndrome: general weakness, rapid fatigue, tinnitus, dry mouth (hyposalivation), midges before the eyes, pallor of the skin and mucous membranes, tachycardia, shortness of breath, pulsation of the carotid arteries, systolic murmur over the apex of the heart.

Hemorrhagic syndrome: petechiae, bruising, hemorrhage, bleeding, bleeding.

Immunodeficiency syndrome (infectious or ulcerative necrotic): frequent bacterial, viral, fungal infections, hyperthermia, stomatitis, autoimmune processes

Syndrome of oppression of hematopoiesis (myelosuppression): a combination of anemic, hemorrhagic and immunodeficiency syndrome.

Tumor progression syndrome (infiltration by malignant tumors of internal organs): enlargement of lymph nodes, liver, spleen and other organs (bone marrow - ossalgia and sternalgia, CNS - neuroleukemia, skin - leukemides, gums - gingivitis).

Intoxication syndrome: malaise, sweating, weight loss, hyperthermia.

11. **What is hemophilia? What are the types of hemophilia?**

Hemophilia is a hereditary disease caused by insufficiency of factors VII, IX or XI of blood coagulation, which is transmitted in a recessive manner, belongs to the group of hemorrhagic diathesis.

There are three types of hemophilia:
- Hemophilia A is a hereditary coagulopathy caused by a deficiency of coagulation factor VIII (antihemophilic globin).
- Hemophilia B (Christmas disease) - hereditary hemorrhagic diathesis due to a deficiency in the activity of factor IX (the plasma component of thromboplastin).
- Hemophilia C - coagulopathy caused by a deficiency of the CI factor of blood coagulation.

12. **How is hemophilia inherited?**

Hemophilia is a common group of hereditary coagulopathies, among which hemophilia A (lack of coagulation factor VIII) is 85-90%, hemophilia B (lack of IH factor) 8-14%, and hemophilia C (lack of CI factor) 1-2%. Hemophilia A and B are inherited in a recessive pattern linked to the X chromosome, and almost only men suffer from it. Women who inherit one X chromosome from a father with hemophilia and the other from a healthy mother are carriers of hemophilia. Sons born to a father with hemophilia are healthy. Half of the sons from female carriers inherit hemophilia, and 50% of daughters are carriers of its gene. Women who are carriers of hemophilia have a decrease in the concentration of blood clotting factors, but this does not lead to the development of hemorrhagic syndrome. Hemophilia C affects both men and women and is inherited in a recessive manner.

13. **What is the etiopathogenesis of hemophilia?**

Hemophilia A and B are inherited in a recessive sex-related pattern. The gene responsible for the synthesis of factors VIII and IX is located on the X chromosome, as a result of which only men are ill with hemophilia. Women get sick only in the case of marriage between a man with hemophilia and a woman conductor.

Hemophilia C is inherited autosomally, the disease does not depend on gender, it happens quite rarely. Hemorrhagic diathesis in hemophilia A and B is caused by a violation of the internal mechanism of the initial phase of blood coagulation, as a result of which the blood coagulation time and the active partial thromboplastin time increase sharply. Prothrombin time, reflects the state of the external mechanism of blood coagulation, and prothrombin time (end stage) does not change.

Hemophilia A is most commonly observed. Among hemophiliacs, 85% have type A, 15% have type B. The incidence of hemophilia A ranges from one case per 20,000 population to one per 10,000 population (Hoyer, 1994), one per 10,000 men (Turgeon, 1999).
14. What is the classification of hemophilia?
By form:
1. A (factor VIII deficiency).
2. B (factor IX deficiency).
3. C (factor XI deficiency).
4. D (deficiency of factor XII).
With the flow:
1. Light - coagulation factor level 5-15%;
2. Moderate - the level of coagulation factor 2-5%;
3. Severe - clotting factor level <2%.

15. What is the clinical picture of hemophilia?
- Hemorrhages in the large joints of the extremities, deep subcutaneous, intermuscular and intramuscular hematomas;
- Significant and prolonged bleeding after injury;
- Hematuria;
- Less often - hemorrhages (retroperitoneal hematoma, hemorrhage in the abdominal organs, gastrointestinal tract).

16. Name the main methods of research of hematological patients, which are of diagnostic value.
General clinical examination, in particular, palpation of the liver, spleen, lymph nodes.
Special laboratory tests:
1) clinical blood test
2) myelogram - a cytological study of the qualitative and quantitative composition of bone marrow cells.
Normally, the number of myelokaryocytes is 45 -170 x 10⁹ / l, and the ratio of myelocytes to erythrokaryocytes is 3: 1-4: 1.
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5) Biopsy of lymph nodes - histological examination of the lymph nodes after their surgical removal.

17. How is hemophilia diagnosed?
During laboratory tests, the diagnosis of hemophilia is confirmed by the prolongation of the active partial thromboplastin time (APTT) in the presence of normal prothrombin index. The number of platelets does not decrease, respectively, the bleeding time is not changed. The blood clotting time increases, the plasma recalcification time increases.
The form of hemophilia is established by adding to the patient's plasma so-called barium plasma (plasma of a healthy person mixed with barium sulfate, which binds the factors of the prothrombin complex-II, VII, IX and X, but does not bind factor VIII). If the extended APTCH normalizes after the addition of barium plasma, one should think about hemophilia A, if not, about hemophilia B. A more accurate differential diagnosis is carried out by mixing the patient's plasma with plasma samples from patients with a previously known form of hemophilia and the absence of normalization of the patient's plasma coagulation with this disease.

18. How are joint lesions due to frequent bleeding characterized?
Joint damage due to frequent bleeding can be of a different nature:
1. Acute hemarthrosis (primary and recurrent) - sudden onset or increased pain in a joint as a result of even minor trauma. The joint is enlarged, hot to the touch, and the skin over it is hyperemic. Due to large hemorrhages, a characteristic symptom of fluctuation. The pain disappears after evacuation of blood from the articular cavity and simultaneous transfusion of antihemophilic plasma.
2. Chronic hemorrhagic destructive osteoarthritis - the function of the joint may not be affected, but all signs of osteoarthritis (narrowing of the joint space, osteophytes, deformity) are manifested radiographically. Over time, joint function is impaired, along with atrophy of the muscles that provide movement of the joints.
3. Secondary immune rheumatoid syndrome (as a complication of the underlying disease) - the manifestations of which are chronic inflammation of the small joints of the hand and foot is not associated with hemorrhages, followed by a typical deformity, pain, severe morning stiffness. With age, the prevalence and severity of joint damage progresses relentlessly, which leads to the patient's disability. The progression of joint damage depends on the frequency of acute hemarthrosis.

19. What urgent care is needed for a patient with acute hemarthrosis in hemophilia?
- Immobilization (no more than 3-5 days) of the affected limb in a physiological position;
- Warming the affected joint (in no case cooling);
- Early aspiration of blood flowing into the joint.

20. What preparation is carried out for a patient with hemophilia before surgery, before extirpation of the tooth?
The patient is injected intravenously with antihemophilic plasma or plasma cryoprecipitate until the clotting time is normalized in two cases.

21. What is von Willebrand disease?
Von Willebrand disease is a disease caused by impaired synthesis or qualitative abnormalities of the autosomal components of factor VIII - von Willebrand factor (VIII: v.WF) and an associated antigen (v.WF: Ag). The disease is inherited in an autosomal dominant manner, there are variants of the disease, and are inherited in an autosomal recessive manner. Both men and women are ill.

Etiology and pathogenesis. At the heart of von Willebrand disease is a violation of the synthesis of the main cofactor factor VIII, which is called von Willebrand factor, or ristocetin cofactor. Factor VIII circulates in the blood as a protein complex consisting of the same type of subunits. Each of the subunits contains parts with coagulant activity (VIIIk), von Willebrand factor activity (VIII.FV), the main antigen of the complex (VII1. AG), antigen coagulant parts of the complex (VII.AH), carbohydrate and protein parts. Von Willebrand factor regulates the synthesis of the coagulant part of factor VIII, and also controls the adhesive function of platelets. The von Willebrand factor is contained not only in the composition of factor VIII, but also in platelet granules and in the vascular endothelium, where it is synthesized. With a decrease in the content of von Willebrand factor, the coagulant activity of factor VIII decreases, which is the cause of blood coagulation disorders, platelet adhesion decreases, as well as ristocetin-platelet aggregation with normal aggregation on thrombin, ADP and other aggregation agents. Thus, bleeding in von Willebrand disease is caused by disturbances in the coagulation and platelet-vascular phases of hemostasis.
Willebrand disease can be considered acquired if its onset occurs at an older age and there is no history of family-hereditary nature.
In this case, the pathogenesis of the disease is associated with autoimmune disorders, mainly with the synthesis of antibodies to von Willebrand factor or the appearance of a circulating inhibitor of factor VIII, which neutralizes the activity of von Willebrand factor. The syndrome of acquired von Willebrand disease is described in systemic lupus erythematosus, hypernephroma, lymphoproliferative diseases.

23. Name the clinic for von Willebrand disease.
For von Willebrand disease, a microcirculatory-hematoma type of bleeding is characteristic. Depending on the variant of the disease, in some patients, the microcirculatory or hematoma nature of hemorrhagic manifestations may prevail.
In patients with type 1 von Willebrand disease, and this is 70% of patients, the course of the disease is calm and is manifested by an increased tendency to bruising, nosebleeds, in women - profuse and prolonged menstruation. Excessive bleeding may occur after tooth extraction and after surgery, rarely increased bleeding after childbirth.
Severe forms of the disease, in particular type III, appear already in the first years of life. Bleeding from the mucous membranes is characteristic, and in women - profuse, prolonged periods. Cutaneous hemorrhages are more often characterized by small bruises. Rarely, the disease is complicated by gastrointestinal bleeding, hematuria. One of the characteristic manifestations of the disease is bleeding from
wounds after even minor injuries, operations and childbirth. Joint hemorrhages are rare, only with a significant decrease in the activity of factor VIII: C (type III, 2A and 2N). In such patients, the hematoma type of bleeding predominates.

24. What treatment is needed for von Willebrand disease?
The main method of treatment of hemorrhagic syndrome in von Willebrand disease is transfusion replacement therapy with drugs containing factor VIII - antihemophilic plasma, cryoprecipitate, purified factor VIII concentrates.

25. What is the prognosis of von Willebrand disease?
Provided that timely adequate therapy is carried out, the prognosis for this disease is favorable. Patients are disabled during the period of exacerbation of hemorrhagic syndrome.

26. What is the definition of hemorrhagic vasculitis?
Hemorrhagic vasculitis (Shenlein-Henoch disease, anaphylactic purpura, hemorrhagic immune microthrombovasculitis) is an allergic systemic hypersensitive vasculitis that occurs with damage to the microvasculature and manifests itself as symmetrical exudative-gastrointestinal lesions and intestinal lesions, lesions on the skin.

27. What are the etiological factors in the development of hemorrhagic vasculitis?
Hemorrhagic vasculitis is a polyetiological disease of nonspecific origin. Its trigger mechanism can be various factors: infectious agents, parasitic infection, food and drug allergies, the introduction of vaccines, sera, hematopreparations. In confirmation of this, in recent years, works have appeared on the role of β-hemolytic group A streptococcus, mycoplasma infection, cytomegalovirus, Helicobacter pylori, Morganella morganii in the genesis of hemorrhagic vasculitis. In addition to the above, the provoking factors of a previously sensitized organism can also be mental and physical trauma, hypothermia or overheating of the body.
These factors, playing a certain role in the development of the disease, by no means exhaust the problems of its occurrence. An important role in the realization of the pathological process was also played by the reactivity of the organism and the premorbid background. The immunocomplex origin of the disease has already been proven, in which "aseptic inflammation" develops in microvessels with wall destruction, thrombosis and the appearance of purpura of various localization due to the damaging effect of circulating low molecular weight immune complexes (IC) and activated components of the complement system.

28. How many hemorrhagic vasculitis syndromes do you know?
There are 4 main hepatitis B syndromes:
1. Dermal;
2. Articular;
3. Abdominal;
4. Renal.

29. How does skin syndrome manifest clinically?
Leading in establishing the diagnosis is cutaneous hemorrhagic syndrome, which is observed in all patients. Skin rashes, as a rule, are the first and manifestations of hemorrhagic vasculitis (HV), although in some cases they appear against the background of an articular or abdominal syndrome. Rash - small-spotted hemorrhage, less often petechiae, sometimes maculopapular elements, which in dynamics turn into a hemorrhagic spot.
The rashes are located symmetrically on the feet, legs, thighs, buttocks. Only in severe cases, the rash spreads to the trunk, face, sometimes tends to merge with necrosis. A characteristic feature of the skin syndrome is the undulation of the rash.

30. How is articular syndrome clinically manifested?
The second most common is articular syndrome. The damage to the joints is symmetrical. The knee, ankle, wrist and elbow joints are mainly affected. Pain, swelling, and limitation of joint movement persist for 2–3 days. Articular syndrome can also have an undulating course.
31. How is abdominal syndrome clinically manifested?
Abdominal syndrome is the third most frequent occurrence. Clinically manifests itself as abdominal pain, vomiting, and sometimes gastrointestinal bleeding. The pain is paroxysmal, does not have a clear localization, and may be accompanied by nausea, vomiting, and increased stool frequency.

32. How does renal syndrome manifest?
Renal syndrome occurs in generalized forms and appears more often in the II-IV week of the disease. In the overwhelming majority of patients, moderate proteinuria with microhematuria is noted. In 20% of cases with the formation of glomerulonephritis, with the development of chronic renal failure in 5% of cases.

33. Types of the course of the disease.
The course of the disease is distinguished:
- Acute (4-5 weeks);
- Subacute (6-12 weeks);
- Long-term (3-8 months);
- Recurrent (recurrence of the disease after clinical recovery with intervals of relief up to 1 month. And more);
- Chronic (continuous undulating course of the disease for 9 months - 1 year and with lighter intervals of no more than one month);

34. How are diseases divided by severity? Describe the degrees of severity?
I degree of activity of the pathological process (minimal) - the patient's condition almost does not change, body temperature is normal or subfebrile. There are a few rashes on the skin. Patients complain of the volatile nature of pain in the joints, sometimes in the muscles, there is no abdominal syndrome. Vessels of other organs and systems are very rarely affected. Changes in peripheral blood are mostly absent or insignificant.

II degree of activity - general condition of moderate severity, body temperature can rise to 380C, children complain of general weakness, headache, joint pain and swelling. Skin rash, angioedema. The manifestations of the abdominal syndrome are noted: nausea, vomiting, increased stool frequency, sometimes with blood, abdominal pain. In peripheral blood, leukocytosis from 10 • 109 / l and above is noted, neutrophilia with a shift to the left, eosinophilia, ESR increased to 20-40 mm / h; dysproteinemia, moderate reduction in clotting time.

III degree of activity - the general condition of the patient is severe, complaints of weakness, headache, nausea, repeated vomiting of blood occurs, repeated bloody stools. Purpura on the skin has a confluent necrotic character. Cardiovascular disorders are possible. Hematuria joins. All laboratory parameters are significantly changed. The blood clotting time can be less than one minute.

35. What does the treatment of hemorrhagic vasculitis include?
Mode. Patients are on strict bed rest until the persistent disappearance of hemorrhagic rashes (on average 3-4 weeks). With the development of glomerulonephritis, the duration of bed rest depends on the characteristics of its course and is limited, as a rule, by the period necessary to eliminate the extrarenal symptoms of glomerulonephritis.

Diet. Prescribe drugs of different mechanisms of action: curantil, tiklid, trental, acetylsalicylic acid. The average daily doses of the drugs used are: curantil - 3-5 mg / kg / day, Trental - 5-10 mg / kg / day. in 3-4 doses, acetylsalicylic acid 5-10 mg / kg 1 time in the morning, tiklid - 4-8-12 mg / kg / day in 1-2 doses. With a wave-like process of skin purpura, drugs are used until it is completely stopped, with nephritis - for a long time (up to 6 months) with repeated courses for 2-3 months while maintaining microhematuria and proteinuria. With severe and prolonged hypercoagulation, 2 antiplatelet agents are prescribed with a different mechanism of action (for example, curantil and aspirin).

Anticoagulant therapy is also considered basic; heparin is used on the debut of treatment. Heparin shows its effect only when interacting with antithrombin III (AT-III) - the main inhibitor of thrombin in plasma. The dose of heparin is set depending on the severity of clinical manifestations and parameters of ACT: with moderately pronounced skin purpura, skin-articular syndrome and mild signs of hypercoagulability (according to ACT data, it was 200-300 U / kg / day.). With massive skin and hemorrhagic syndrome and essential signs of hypercoagulation according to ACT data - 300-400 U / kg / day, with abdominal syndrome
and severe coagulation according to ACT data 500 U / kg / day, with nephritis - usually 200-250 U / kg / day. Heparin is injected subcutaneously into the subcutaneous fatty tissue of the umbilical area every 8-12 hours or every 4 hours. The duration of use of heparin is from 7 to 20 days and depends on the form of the disease and the daily dose. With OH, heparin is used, as a rule, for 4-6 days.

Antihistamines are considered indicated, taking into account the hyperergic and pseudoallergic mechanisms of cutaneous purpura. Prescribed drugs: Cetrin - used for children 10 mg 1 time per day, diazolin - 1.5-3-5 mg / kg / day, tavegil - 0.025-0.03 mg / kg / day, peritol - 0.0005 mg / kg / day., fenkarol - 1-2 mg / kg / day, etc. Within 7-10 days. Enterosorption is also widely used. Enterosgel is prescribed as enterosorbents, activated carbon - 15-40 mg / kg / day in 3-4 doses and others. In patients, especially in the presence of concomitant infection or exacerbation of chronic foci of infection, as well as in case of a stable undulating course of the skin syndrome, antibacterial agents are used: semi-synthetic antibiotics of the penicillin series, cephalosporins, macrolides, fluoroquinolones (ciprolet-200mg 2 g per day iv), (i.e. antibiotics that do not have toxic effects on the vascular wall and on the kidneys) in conventional doses of 7-10 days.

In the presence of pronounced skin changes, thrombocytosis, hypercoagulation, rheopolyglucin is injected intravenously at the rate of 10-20 mg / kg / day. To improve microcirculation, trental was administered in physiological sodium chloride solution at a rate of 5-10 mg / kg / day. NSAIDs (nise, ortofen, voltaren, indomethacin) are used for a pronounced inflammatory component of cutaneous purpura, with a steady wave-like course, accompanied by an acceleration of ESR and high blood levels of α2 - globulins, fibrinogen. The daily dose of the drug Nise, which has anti-inflammatory, analgesic and antipyretic effects, is 1.5 mg / kg of body weight 2 times a day. The maximum daily dose for children should not exceed 5 mg / kg, divided into 2 doses. The daily dose of ortofen, indomethacin is 2-3 mg / kg / day. The course of treatment is 4-6 times.

According to some doctors, the simultaneous use of Nise with Cetrin (Doctor Redis) in age-specific doses will be recommended.

GCS with pronounced activity of the process with signs of hyperergic manifestations of the disease (confluent purpura with bullous elements and necrosis, urticaria, Quincke's edema, polyarthritis, abdominal syndrome, early development of renal syndrome and its progression, fever, signs of severe intoxication, they resort to the appointment of prediachnisolone - 3 mg / kg / day for 2-3 weeks. In case of ineffectiveness of basic therapy, "pulse therapy" is used in the composition of GCS and cytostatics. For example, prednisolone and cyclophosphamide at a dose of 800 • 1000mg / m2 of body surface in combination with efferent methods of therapy (sessions of therapeutic plasmapheresis) in order to interrupt hyperergic angitis and eliminate immune complexes. When using GCS and cytostatics, one should take into account the possibility of developing steroid ulcers, hypocalcemia, fungal and bacterial complications.

In order to prevent and prevent these complications, the patient is prescribed after basic therapy calcium preparations (calcium gluconate, calcemin), antifungal drugs (nizoral, diflucan, exifin - a dose of up to 20 kg of weight 62.2 mg / day (1/4 tab.250 mg) from 20 to 40 mg - 125 mg (1/2 tab. 250 mg) over 40 kg - 250 mg (1 tab. 250 mg) duration 2-4 weeks, antacids (almagel, phospholugel, maalox).

In cases of formation of gastroduodenitis or stomach ulcers, therapy is carried out as part of antibacterial drugs of a number of amoxicillin, de-nol (or bismuth preparations), as well as proton pump blockers (lanzap, omez). In the presence of nausea, vomiting, the following drugs are administered: Sturgeon at a dose of 5 ml / m2 before the administration of chemotherapy drugs and after 12 hours 4 mg (1 tab.) Per os.


1. Hemophilia refers to:
   A. Coagulopathy;
   B. Vasopathies;
   C. Thrombocytopathies;
   D. Thrombocytopenia;

2. What disease is characterized by the appearance of hemarthrosis?
   A. Hemophilia;
   B. Hemorrhagic vasculitis;
   C. Hemolytic anemia;
D. Thrombocytopenic purpura;

3. Which of the following symptoms are typical for patients with hemophilia?
   A. Petechia;
   B. Spotty-papular elements;
   C. Hematomas;
   D. Peeling;

4. Complications of hemarthrosis are the following conditions, except:
   A. Suppuration of hemarthrosis;
   B. Hemarthritis;
   C. Subluxation of the joint;
   D. Ankylosis;

5. For hemophilia, it is characteristic that bleeding occurs in the following conditions, except for:
   A. With inflammation of an organ or tissue;
   B. After closed injuries;
   C. After open injuries;
   D. When teething;

6. What is the normal blood clot retraction index?
   A. 2.1-3.2;
   B. 0.3-0.5;
   C. 1.2-1.5;
   D. 0.8-1.0;

7. What is the normal prothrombin index?
   A. 80-100%;
   B. 20-30%;
   C. 120-130%;
   D. 50-80%;

8. The defeat of what hemostasis is characteristic of hemophilia?
   A. Primary;
   B. Secondary;
   C. Microcirculatory;
   D. Vascular-platelet;

9. What disease is characterized by prolonged blood coagulation time?
   A. Hemolytic anemia;
   B. Hemorrhagic vasculitis;
   C. Hemophilia;
   D. Thrombocytopenic purpura;

10. In hemophilia, education is impaired:
    A. Thromboplastin;
    B. Trombin;
    C. Fibrin;
    D. Heparin;


Task 1
When examining the oral cavity of a 42-year-old patient D., a dentist drew attention to the presence of multiple carious teeth defects, dark enamel. The patient is pale, has bad brittle hair and brittle nails. During the survey, the doctor found out that recently the patient has been eating much worse due to financial problems.

What is the patient's probable diagnosis?
   a) immunodeficiency
   b) iron deficiency anemia
   c) acute leukemia
   d) hemolytic anemia
e) hypovitaminosis C

**Task 2**
A 29-year-old woman consulted a gynecologist with complaints of prolonged menorrhagia. Upon questioning, it turned out that the woman began to notice dry skin, fragility and hair loss, splitting of nails, a feeling of general weakness and dizziness.

Most likely diagnosis:
- a) iron deficiency anemia
- b) nocturnal paroxysmal hemoglobinuria;
- c) hypovitaminosis C;
- d) stomach ulcer;
- e) hemorrhoidal bleeding

**Task 3**
A young woman turned to the family doctor with complaints that for three years she was worried about the desire to constantly eat chalk (she eats about 50-70 grams per day), general weakness, and decreased performance. History of 2 pregnancies, last birth 2 years ago. On examination, the conjunctiva of the eyes is pale, palms are yellow. On auscultation, a systolic murmur is heard at the apex. In the analysis of blood Hb 80 g / l, CP - 0.6, erythrocyte hypochromia, anisocytosis, poikilocytosis.

Determine the correct treatment option:
- a) a diet rich in fruits and vegetables;
- b) ferrous sulfate 120 mg 2 r. per day + diet with a sufficient content of meat and meat products;
- c) iron preparations containing 120 mg of elemental iron, 2p per day by mouth + vitamin C;
- d) ferrous sulfate 100 mg 1 g per day + folic acid inside;
- e) vitamin B12 intramuscularly + iron preparations containing 60 mg of elemental iron 2p per day.

**Task 4**
A boy, 17 years old, after physical strain, complains of a sharp deterioration in the general condition of the body, darkening of urine. On a general examination, yellowness of the skin is observed, on palpation - an enlarged spleen. A laboratory blood test showed an increase in the level of serum iron, an increase in the number of blood reticulocytes, and hyperbilirubinemia.

Make a preliminary diagnosis:
- a) hemolytic crisis;
- b) iron deficiency anemia;
- c) exacerbation of gastric ulcer;
- d) acute leukemia;
- e) liver cirrhosis

**Task 5**
A man, 34 y.o., consulted a family doctor with a violation of sensitivity in the limbs and uncertainty when walking (swaying). Upon questioning, the doctor found out that the patient had a loss of appetite, a feeling of fullness in the epigastrium, a tendency to diarrhea, increased irritability and decreased memory. On examination: the patient is pale, has a "lacquered tongue" (Hunter's glossitis).

What possible changes in the general blood count can occur?
- a) a decrease in serum iron, erythrocytes and hemoglobin;
- b) a decrease in erythrocytes, hemoglobin, the presence of Jolly's bodies and Kebot's rings in the cytoplasm of erythrocytes;
- c) decrease in erythrocytes, platelets and leukocytes, increased ESR;
- d) decrease in erythrocytes, hemoglobin, reticulocytosis;
- e) decrease in erythrocytes, leukocytosis, thrombocytosis, the shadow of Botkin-Gumprecht.

**4.5. Practical tasks**
1. Interviewing thematic patient.
2. Collecting history of life and disease from the patient.
3. Performing of palpation.
4. Performing of percussion.
5. Performing of auscultation.
6. Interpret the laboratory data.
7. Interpret the data of instrumental methods.

5. Recommended literature

Informational resources:
http://www.studfiles.ru/preview/1903088/
http://03book.ru/upload/iblock/a82/a828801a55d3b755b7d085479097cf58.pdf
https://meded.ucsd.edu/clinicalmed/links.htm