

DEPARTMENT OF INTERNAL DISEASES №1
WITH COURSES OF ENDOCRINOLOGY AND HEMATOLOGY
Thematic plan of practical classes in hematology
for 5th year students of the medical faculty and the faculty of foreign students

Topic 1. Anemia.

1. General characteristics of anemias: epidemiology, degrees of severity, pathogenetic and morphological classification, main clinical syndromes (anemic, sideropenic, hemolysis syndrome, ineffective erythropoiesis syndrome), principles of diagnosis.
2. Iron deficiency anemia (IDA): main etiological factors, clinical syndromes, stages of iron deficiency, laboratory diagnostics, differential diagnosis with other hypochromic anemias, search for reasons, treatment. Principles of iron-therapy and control of its effectiveness. Prophylaxis and observation.
3. Anemia of chronic disease (ACD): definition, frequency of occurrence, mechanisms of pathogenesis, clinical and laboratory diagnostics, and principles of therapy. Indications for transfusion of donor erythrocytes.
4. Megaloblastic anemias (B12 and folate deficiency): etiology, pathogenesis of B12 and folate deficiency anemias, clinical manifestations, laboratory diagnostics, diagnosis criteria, treatment, prophylaxis and observation.
5. Hemolytic anemias: definition, frequency of occurrence, classification, types of hemolysis (intravascular, intracellular, mixed) and their main clinical and laboratory signs. Methods of laboratory diagnostics and principles of therapy for hereditary spherocytosis, thalassemia, enzymopathies and autoimmune hemolytic anemia. Treatment of hemolytic crisis.
6. Aplastic anemias: frequency of occurrence, mechanisms of pathogenesis, classification, main symptoms, characteristic changes in blood and bone marrow. Diagnostic criteria and main directions of therapy.

Topic 2. Oncohematological diseases (hemoblastosis). Acute leukemia.

1. Oncohematological diseases: epidemiology, possible etiological factors, mechanisms of pathogenesis, classification, clinical syndromes (tumor intoxication, hyperplastic, anemic, hemorrhagic, infectious complications). Diagnostic methods (immunophenotyping, cytochemical, cytogenetic and molecular investigations).
2. Acute leukemia (AL): definition, epidemiology, features of pathogenesis, classification (FAB, WHO, EGIL), clinical course and stages of the disease.
3. Laboratory and morphological diagnostics of acute leukemia (myelogram, cytochemistry of blast cells, immunophenotyping, cytogenetic and molecular investigations). Main diagnostic criteria (lymphoblastic / myeloblastic types).
4. Principles and stages of therapy of acute leukemia. Targeted therapy and hematopoietic stem cell transplantation (HSCT). Symptomatic and maintenance therapy. Prognostic factors, observation.
5. Agranulocytosis: etiology and pathogenesis, clinical types (myelotoxic and immune), laboratory diagnostics. Complications and the course of agranulocytosis. Treatment (elimination of reasons, transfusion therapy, stimulants of leukopoiesis,

detoxification therapy, antibiotics, glucocorticosteroids). Prognosis, prophylaxis of agranulocytosis.

Topic 3. Myeloproliferative diseases (neoplasms): chronic myeloid leukemia, polycythemia vera.

1. General characteristics and classification of myeloproliferative diseases.
2. Chronic myeloid leukemia (CML): epidemiology, features of pathogenesis, stages of the course and clinical signs. Laboratory and morphological diagnostics, cytogenetic and molecular investigations. Main diagnostic criteria. Principles of therapy (HSCT, tyrosine kinase inhibitors). Prognosis.
3. Classification of erythrocytosis (relative /absolute; primary / secondary).
4. Polycythemia vera (PV): frequency of occurrence, mechanisms of pathogenesis, clinical manifestations and stages of the disease. Laboratory diagnostics and differential diagnostics with secondary erythrocytosis. Diagnosis criteria. The principles of therapy. Prognosis.

Topic 4. Lymphoproliferative diseases: chronic lymphocytic leukemia, multiple myeloma. Symptomatic therapy for oncohematological diseases.

1. General characteristics and classification of lymphoproliferative diseases.
2. Chronic lymphocytic leukemia (CLL): epidemiology, pathogenesis, main clinical syndromes, stages, complications. Laboratory and morphological diagnostics and main criteria of diagnosis. Treatment principles: indications and main directions. Prognosis.
3. Multiple myeloma (MM): frequency of occurrence and characteristics of pathogenesis, clinical syndromes, diagnostics. Diagnostic criteria of multiple myeloma (CRAB criteria). The main directions of therapy (standard / high-dose chemotherapy, autologous HSCT), prognosis.
4. Complications of chemotherapy, their prevention and treatment. Infectious complications: risk factors, etiology, features of the course of hematological diseases, clinical and laboratory diagnostics, prophylaxis and rational antibiotic therapy.

Topic 5. Disorders of hemostasis (hemorrhagic diathesis).

1. General characteristics and classification of disorders of hemostasis, types of bleeding. Methods for diagnostics of disorders of primary and secondary hemostasis.
2. Thrombocytopenia: definition, mechanisms of pathogenesis, classification. Immune thrombocytopenia (ITP): epidemiology, pathogenesis, variants of the clinical course, diagnosis and differential diagnosis with secondary thrombocytopenia. The main principles of therapy.
3. Thrombocytopathy: definition, frequency of occurrence, classification, clinical manifestations, laboratory diagnosis and treatment.
4. Hereditary coagulopathies (hemophilia A, B, Willebrand disease): the significance of hereditary factors, clinical course and degrees of severity, laboratory diagnostics, methods of therapy, prevention of complications and rehabilitation.
5. Acquired coagulopathies (DIC syndrome): reasons, pathogenesis, clinical and laboratory diagnostics, principles of therapy.