| **Topics** | **Content** |
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| **Cardiovascular diseases** | Symptomatic arterial hypertension.  Physiological mechanisms of blood pressure regulation. The current classification of symptomatic hypertension. Pathogenetic mechanisms of symptomatic increase in blood pressure in various diseases. Clinical manifestations of diseases accompanied by an increase in blood pressure.  Stages of diagnosis and differential diagnosis of symptomatic arterial hypertension. Principles of treatment of patients with symptomatic arterial hypertension.  Symptomatic arterial hypertension of endocrine origin.  Itsenko-Cushing's disease and syndrome  Regulation of pituitary function. Hypothalamic-pituitary system. Etiology and pathogenesis of Itsenko-Cushing's disease. Clinical manifestations of the disease and their pathogenesis. Syndromic diagnosis of Itsenko-Cushing's disease.  Differential diagnosis of the disease and Itsenko-Cushing's syndrome. Complications The principles of treatment.  Symptomatic arterial hypertension of renal origin, clinical features, diagnostic criteria, treatment.  Emergency cardiology.  Life-threatening cardiac arrhythmias: clinic, diagnosis, development mechanisms, principles of emergency care.  Pulmonary edema: pathogenesis, stages, clinical manifestations, principles of therapy.  Primary circulatory arrest: causes, development mechanisms, methods of cardiopulmonary resuscitation.  Congenital heart defects in adults.  Epidemiology and etiology of congenital heart defects, the most common congenital heart defects in adults. Hemodynamic changes, clinical presentation and diagnosis of Botallus duct non-closure, aortic coarctation, atrial and interventricular septal defects, tetralogy of Fallot  . Physical signs. Instrumental diagnostic methods: ECG changes, X-ray, EchoCG signs, cardiac catheterization. Assessment of hemodynamic significance. Natural course and prognosis. Indications and contraindications for surgical treatment, its types.  Myocarditis, cardiomyopathy, pericarditis, endocarditis.  The term "myocarditis" definition. Classification of myocarditis. Etiology, pathogenesis and pathomorphology of myocarditis. Clinical manifestations and methods for the diagnosis of myocarditis. The clinical course of myocarditis. Differential diagnosis of myocarditis. Principles of treatment and rehabilitation of patients with myocarditis.  Classification and definition of cardiomyopathies. Features of the treatment of various CMPs. Myocarditis criteria, treatment features. Criteria for cardiomegaly, differential diagnosis of cardiomegaly (cardiomyopathy, myocarditis and myocarditis cardiosclerosis, coronary heart disease, hypertension, heart defects). Norms for ECHO cardioscopy. ECHO-cardioscopic signs of systolic and diastolic heart failure.  Pericarditis: determination, prevalence. Classification of pericarditis: according to the severity of the course, according to the nature of changes in the pericardium. Etiology of pericardium. acute pericarditis by the nature of changes in the pericardium: fibrinous (dry) and effusion (exudative).  Clinical manifestations of acute fibrinous pericarditis.  Dynamics of ECG changes, differential diagnosis with ECG changes in myocardial infarction. Diagnostic Criteria Differential diagnosis. Examples of diagnosis. Treatment is etiopathogenetic and symptomatic. Pericardial effusion. Features of etiology. Clinical manifestations, their features, depending on the rate of accumulation of effusion. Data of physical and instrumental research. Laboratory diagnostics.  Differential diagnosis depending on the nature of the pericardial effusion.  Exudative pericarditis with compression of the heart: cardiac tamponade. Hemodynamic changes. Clinical manifestations of cardiac tamponade. Causes of the appearance of a paradoxical pulse, differential diagnosis. X-ray, ECG signs. The principles of the diagnosis of effusion pericarditis. Indications for emergency medical and diagnostic pericardial puncture. Treatment of effusive pericarditis is etiopathogenetic and symptomatic.  Determination of infectious endocarditis. Risk factors, etiology.  The pathogenesis of infectious endocarditis: bacteremia, endothelial dysfunction and its response to damage, immune suppression, secondary immunological disorders.  Pathological anatomy of infectious endocarditis.  Classification of infectious endocarditis.  Clinical manifestations of infectious endocarditis  1) Infection with its signs and symptoms.  2) Changes in the heart.  3) Peripheral signs.  4) Arterial embolism (micro - and macroembolism).  5) Immune reactions of the body.  Laboratory and instrumental methods for the study of infectious endocarditis.  • methods for detecting pathogenic microflora in the blood  • changes in the clinical analysis of blood and urine tests  • data from biochemical studies.  • immunological diagnostics.  • echocardiography: direct, reliable and indirect signs of IE.  Differential diagnosis and diagnostic errors of IE.  Criteria for the clinical diagnosis of IE (DUKE): major and minor  Features of clinical manifestations of IE of a natural valve.  Infectious endocarditis of the valvular prosthesis.  The clinical picture of IE in drug addicts.  The principles of treatment of infectious endocarditis. Treatment regimens A, B and C for infectious endocarditis. Surgical treatment of infectious endocarditis: absolute and relative indications, types of surgical interventions. The course, prognosis, prevention. |
| **Respiratory diseases** | Chronic respiratory failure. Pulmonary heart.  Forms of respiratory failure: obstructive, restrictive, mixed. Severity depending on the gas composition of the blood. Diagnostics. Pathogenesis of pulmonary hypertension in pulmonary diseases. Pulmonary heart: acute, chronic. Etiology, pathogenesis, classification, manifestations and stages of the course. Additional research methods. The principles of treatment of patients with pulmonary heart: treatment of the underlying disease, restoration of impaired ventilation of the lungs, reduction of pulmonary hypertension, elimination of right ventricular failure. Primary and secondary prevention.  Pulmonary embolism  Etiology of pulmonary embolism, predisposing factors, pathogenesis, clinical symptoms, course options, clinical manifestations with embolism of the trunk and small branches of the pulmonary artery (pulmonary infarction); diagnostic methods, including lung scintigraphy and computed tomography in angiography with contrast; electrocardiographic changes in thromboembolism of the pulmonary artery.  Differential diagnosis with acute myocardial infarction, with acute lung diseases (pneumonia, pleurisy, etc.)  Prevention measures: prevention and rational treatment of peripheral venous thrombosis, cardiac arrhythmias and heart failure. Treatment, emphasizing the role of anticoagulants, thrombolytic therapy. Surgical treatments. Indications and contraindications for embolectomy. Prognosis |
| **Digestive system diseases** | Chronic pancreatitis.  The definition of "chronic pancreatitis." Epidemiology of chronic pancreatitis. Etiology, risk factors and pathogenesis of chronic pancreatitis. Classification of chronic pancreatitis. Clinical manifestations, complications and outcomes of chronic pancreatitis. Diagnosis of chronic pancreatitis. Differential diagnosis. The principles of treatment of chronic pancreatitis.  Chronic hepatitis, cirrhosis  Definition Classification. Etiology. The role of viral infection and alcohol intoxication in the occurrence of the disease. Progression mechanisms  Pathogenesis. The clinical picture. The main syndromes. Diagnosis. Treatment. Outcomes.  Chronic non-specific bowel disease.  Clinical manifestations of inflammatory bowel disease, endoscopic and morphological differences of Crohn's disease and ulcerative colitis. Therapy of induction, remission and maintenance of remission in inflammatory bowel diseases. The main intestinal and extraintestinal manifestations of celiac disease, management tactics. Clinical manifestations, diagnostic algorithm and management tactics for patients with diverticular bowel disease. Diagnosis and management of patients with microscopic colitis. Clinical manifestations, diagnosis and treatment of Whip-ple disease |
| **Blood system diseases** | Aplastic conditions of blood creation. Aplastic anemia. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Clinical manifestations. Differential diagnosis with other syndromes of bone marrow failure. Features of the morphology of red blood cells in various anemia. Re-generating features of the blood (content of reticulocytes) in various anemia. The principles of therapy ..  Paroxysmal nocturnal hemoglobinuria. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Differential diagnosis.  Chronic myeloproliferative diseases. Definition. Classification. Modern diagnostic methods.  Chronic myeloid leukemia. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Stage. Clinical manifestations. Differential diagnosis. Modern treatment methods.  Myelodysplastic syndrome. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Classification (WHO). Clinical manifestations. Differential diagnosis. Treatment methods. Indications for specific treatment.  Polycythemia vera. Definition. Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Clinical manifestations. Differential diagnosis. Diagnosis Criteria Treatment methods. Indications for specific treatment.  Essential thrombocythemia. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Clinical manifestations. Differential diagnosis. Diagnosis Criteria Treatment methods.  Idiopathic myelofibrosis. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Clinical manifestations. Differential diagnosis. Diagnosis Criteria Treatment methods. Indications for specific treatment. Survey plan. Diagnosis, stage of the disease. Differential diagnosis. The principles of therapy. Forecast  Lymphoproliferative diseases. Definition Classification. The principles of diagnosis. HIV-associated lymphomas and leukemia.  Hodgkin's lymphoma  Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Classification. Stages (An Arbor). The principles of diagnosis and therapy.  Non-Hodgkin lymphomas. Definition Etiology, epidemiology, genetic basis. Pathogenesis. WHO classification. The principles of diagnosis and therapy.  Chronic lymphocytic leukemia. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Classification (according to RAI and Binet). Clinical manifestations. Criteria for diagnosis. Differential diagnosis. Treatment methods. Indications for specific treatment. Survey plan. Diagnosis, stage of the disease. Differential diagnosis. The principles of therapy.  Acute leukemia. Definition Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Classification of acute leukemia (WHO). Clinical manifestations of acute leukemia, diagnostic algorithm. The principles of therapy.  Acute radiation sickness: classification, pathogenesis, clinic, diagnosis, treatment.  Multiple myeloma. Definition. Etiology, epidemiology, genetic basis. Pathogenesis. Predictive factors. Clinical manifestations: osteodestructive, hyperviscosity, nephrotic and hematological syndromes. Differential diagnosis with monoclonal gamma-patia, secondary paraproteinemia, paraneoplastic syndrome. Diagnosis Criteria Treatment methods. Indications for specific treatment. Prevention and treatment of complications.  AL amyloidosis. Definition Differential diagnosis with monoclonal gammopathy of unclear significance, other variants of systemic amyloidosis. Survey plan. Clinical features of the defeat of amyloidosis of various organs and systems. The basic principles of the treatment of amyloidosis.  Hemorrhagic diathesis, types. Vasopathy. Thrombocytopenia and thrombocytopathy. Violation of the coagulation mechanisms of hemostasis. DIC, developmental mechanism. |
| **Rheumatology** | Rheumatoid arthritis. Pathogenesis, diagnosis, clinical picture, diagnostic criteria, principles of complex treatment. The choice of treatment method depending on the activity of the disease (basic drugs, GBI).  Osteoarthritis. Etiology, pathogenesis, methods of treating osteoarthritis depending on the stage of the process and the nature of changes in the joints. Indications and contraindications for surgical treatment. Medication, orthopedic treatment of primary and secondary osteoarthritis, depending on the location, stage, etiology of the disease.  Ankylosing spondylitis. Pathogenesis, diagnosis, clinical picture, diagnostic criteria, principles of complex treatment. The concept of a group of spondylitis, classification criteria for axial spondylitis.  Differential diagnosis with reactive and psoriatic arthritis.  Systemic scleroderma. Etiology and pathogenesis, clinical features, differential diagnosis with other DZST, principles of diagnosis of early forms of DZST. Laboratory diagnostics, specific immunological markers Principles of therapy.  Systemic lupus erythematosus. Etiology and pathogenesis, Laboratory diagnosis of SLE, specialized immunological research. Assessment of the activity of the process. SLE diagnostic criteria  .  Differential diagnosis. Basic therapy and its mechanism of action. Treatment regimens depending on the course and degree of activity of the process. Systemic vasculitis Definition, classification. Systemic vasculitis with lesions of small vessels. Shenlein-Genoch disease: definition, etiology, pathogenesis, clinical manifestations. Diagnosis and principles of treatment of Shenlein-Genoch disease. Systemic vasculitis Definition, classification. Systemic vasculitis with lesions of small and medium vessels. ANCA-associated vasculitis: definition, etiology, pathogenesis. Clinic, diagnosis, principles of therapy. etermination of granulomatosis with polyangiitis (Wegener's disease), eosinophilic granulomatosis with polyangiitis (Charge-Strauss syndrome), microscopic polyangiitis. Polyarteritis nodosa: determination, etiology, pathogenesis. Clinic, diagnosis, principles of therapy.  Systemic vasculitis Definition, classification. Systemic vasculitis with damage to large vessels. Giant cell aortoarteritis with cranial symptoms (Horton's disease) and nonspecific aortoarteritis (Takayasu's disease): definition. Etiology, pathogenesis. Principles of diagnosis and therapy. |
| **Emergencies** | Endocrinology. Coma for diabetes mellitus (hypoglycemic, ketoacidotic, hyperosmolar). Causes, pathogenesis, clinic, diagnosis, emergency treatment.  Acute adrenal insufficiency. Causes, pathogenesis. Clinic, diagnosis, emergency therapy.  Thyrotoxic crisis. Causes, pathogenesis. Clinic, diagnosis, emergency therapy.  Differential diagnosis of coma. Differential diagnosis of coma (cerebral, hepatic, uremic, alcoholic). Algorithms for diagnosis, pre-medical and specialized medical care. Nephrology. Acute kidney damage. Causes, pathogenesis, clinical features, diagnosis. Clinical pharmacology of emergency drugs and indications for hemodialysis. Cardiology. The concept of syncope. Acute heart failure. Clinic, treatment. Asystole. Clinical death. Emergency assistance. Cardiogenic shock. Pathogenesis, species, clinic, clinical pharmacology of agents for the treatment of shock.  Paroxysmal tachycardia. Clinical manifestations, clinical pharmacology of antiarrhythmic drugs. Other treatments.  Hypertensive crisis. Pathogenesis, clinical features, differential diagnosis with symptomatic arterial hypertension. The pharmacology of the means for stopping the crisis.  Immunology. Anaphylactic shock. The concept of drug sickness. Anaphylactic shock with insect bites and food allergies. Anaphylactoid reactions. Emergency treatment.  Toxicology. Alcoholic coma. Clinic, depending on the severity of coma, diagnosis, treatment.  Pulmonology. Acute respiratory failure. Reasons, pathogenesis, clinic, medical tactics.  Pneumothorax. Clinic, emergency therapy.  Pulmonary thromboembolism, clinic, diagnosis, emergency care.  Cardiac asthma and pulmonary edema. Causes, pathogenesis, clinical features, emergency therapy, clinical pharmacology of agents for relieving an attack.  Asthmatic condition in bronchial asthma. Features of clinical manifestations depending on the stage. Emergency treatment. Clinical pharmacology of the means for stopping the status.  Gastroenterology. Hepatic coma. Reasons, clinic, diagnostic criteria, prevention. |