Thematic plan of lectures and laboratory classes

“Pathological anatomy” («General medicine», «Dentistry»)

Semester V

LECTURES
1. Adaptation processes
2. Cell damage. Morphology of disorders of protein and fat metabolism
3. Morphology of lethal cell damage. Necrosis and apoptosis
4. Circulatory disorders
5. Inflammation. Acute and chronic inflammation
6. Tumors. General review. Epithelial tumors
7. Mesenchymal tumors. Tumors of melanin-forming tissue. Tumors of the nervous system and brain membranes
8. Diseases of the cardiovascular system

LABORATORY CLASSES

Topic 1. Methodological basis of pathological anatomy

The subject and tasks of pathological anatomy. The principle of unity and conjugation of structure and function. Etiology, pathogenesis, morphogenesis, sanogenesis, pathomorphosis, thanatogenesis. Histological technique. Methods and objects of research in pathological anatomy. Levels of research in pathological anatomy. Morphological research methods. Methods for histological staining of preparations. Plan for the description of educational macro- and micropreparations. The value of pathological anatomy for fundamental science and clinical practice.

Topic 2. Adaptation processes

Adaptation and compensation. Stages of the compensatory process. hypertrophy and hyperplasia. Types of hypertrophy. adaptive hypertrophy. Neurohumoral (hormonal) hypertrophy. Glandular hyperplasia of the endometrium. hypertrophic growths. Compensatory hypertrophy. Working hypertrophy. myocardial hypertrophy. Vicarious (replacement) hypertrophy. Atrophy: mechanisms, types. General atrophy. Brown atrophy of the liver. Local atrophy and its types. Hydrocephalus and hydronephrosis. Metaplasia, its varieties. Barrett's esophagus. Diagnosis of metaplasia by histological staining methods. The value of metaplasia in carcinogenesis. Dysplasia: morphological features, degrees. The value of dysplasia in carcinogenesis.

Topic 3. Cell injury. Morphology of protein and fat metabolism disorders

Damage (alteration). Causes and mechanisms of cell damage. Reversible (non-lethal) and irreversible (lethal) cell damage. The classical concept of dystrophy. General characteristics, causes and morphogenetic mechanisms of dystrophy, classification issues. Hyaline-droplet, hydropic dystrophy (kidney, liver). Modern idea of granular dystrophy (turbid swelling). Fatty degeneration of the liver, myocardium, kidneys. Methods for the detection of lipids. Mucoid swelling. Fibrinoid swelling. Hyalinosis of connective tissue and vessels, types of vascular hyaline. Obesity and lipomatosis. Disruption of the exchange of cholesterol and its esters in the walls of large arteries.

Topic 4. Morphology of disorders of pigment metabolism. Pathological calcification

Violation of the exchange of endogenous pigments, principles of classification. Hemosiderin. Hemosiderosis and hemochromatosis. Methods for detecting hemosiderin. Bilirubin. Jaundice. Hematines. Porphyrins. Melanin. Hyper-and hypopigmentation. Lipofuscin. Brown atrophy (myocardium, liver). Pathological calcification. Dystrophic, metastatic and metabolic calcifications.

Topic 5. Morphology of lethal cell damage. Necrosis and apoptosis

Etiological types, morphogenesis and microscopic signs of necrosis. Clinico- morphological forms of necrosis and their characteristics. The difference between necrosis and apoptosis. The importance of apoptosis in the normal conditions and pathology.

Topic 6. Circulatory disorders 1

Arterial and venous hyperemia. Stasis. Sludge phenomenon. Bleeding and hemorrhage. Plasmorrhagia. Shock. Causes, types and stages of shock. Mechanisms of edema and their significance for the body. Edema of the brain.

Topic 7. Circulatory disorders 2

Thrombosis. Local and general factors of the pathogenesis of thrombosis. Stages of thrombus morphogenesis. Clotting morphology. The difference between blood clots and postmortem clots. Outcomes and significance of thrombosis. Embolism. Types of emboli and their characteristics. Disseminated intravascular coagulation. Stages of DIC syndrome. Ischemia. Infarction.

Control work on Topics 1 – 7

Topic 8. Inflammation. Acute inflammation

Causes, clinical signs, phases, inflammation classification. Types of exudative inflammation and their characteristics. Outcomes of inflammation.

Topic 9. Chronic inflammation. Regeneration. Healing of wounds

Types of productive inflammation. Granulomatous inflammation. Classification of granulomas. Granulomatous diseases. The structure of the specific granulomas.

Topic 10. Immunopathological processes. HIV infection. Amyloidosis

Autoimmune diseases. Primary and secondary immunodeficiency syndromes. HIV infection. Amyloidosis. The structure and specific methods for detecting amyloid. Classification of amyloidosis. Characteristics of the main forms. Amyloidosis of the spleen, kidney and liver.

Topic 11. Tumors. General review. Epithelial tumors.

Tumor growth. The etiology and pathogenesis of tumors. The genetic concept of carcinogenesis. Cellular oncogenes and anti-oncogenes. Mechanisms of activation of oncogenes. Themain properties of tumors. Autonomy. Pathology of mitosis and apoptosis. Atypia. tumor progression. Morphogenesis of tumors. Invasion and metastasis of malignant tumors. Paraneoplastic syndromes. The basic principles of tumor classification. Benign and malignant tumors of the epithelium.

Topic 12. Mesenchymal tumors. Tumors of melanin-forming tissue. Tumors of the nervous system and the brain membranes (covers).

General characteristics of mesenchymal tumors. Tumors of connective tissue. Tumors from adipose tissue. Tumors of the smooth muscles. Tumors of the vessels. Tumours of bones. Tumors of the cartilage tissue. Nevi. Melanoma. The classification of tumors of the nervous system and the meninges. Glioblastoma. Meningioma. Nevrilemmoma.

Written work on Topics 8 – 12

Topic 13. Introduction to nosology. Teaching about the diagnosis. Thanatology. Iatrogenia

Definition of the concept of "illness". Etiology, pathogenesis, morphogenesis. Symptom, syndrome. Pathoanatomical diagnosis. Comparison of clinical and pathoanatomical diagnoses, categories of their discrepancies. The work of clinico-anatomical conferences, treatment and control commission and commission for the study of lethal cases. Types of death. Credible and unreliable signs of death. Methods

of autopsy. Iatrogenia.

Topic 14. Diseases of the cardiovascular system

Atherosclerosis. Hypertonic disease. Symptomatic hypertension. Heart ischemia. Cerebrovascular diseases.

Intermediate test

Semester VI

LECTURES

1. Diseases of the hematopoietic system
2. Tuberculosis. Syphilis
3. Lung diseases
4. Diseases of the gastrointestinal tract
5. Diseases of the liver and biliary tract
6. Kidney diseases
7. Diseases of the reproductive system. Pathology of pregnancy
8. Diseases of the endocrine system

LABORATORY CLASSES

Topic 15. Rheumatic diseases

General characteristics of rheumatic diseases. Rheumatism. Systemic lupus erythematosus. Rheumatoid arthritis. Scleroderma. Nodular periarteritis. Sjogren's disease. Acquired heart defects.

Topic 16. Diseases of the hematopoiesis system

Anemia. Lymphoproliferative diseases. Acute lymphoblastic leukemia. Chronic lymphocytic leukemia. Multiple myeloma. Hodgkin's disease. Myeloproliferative diseases. Acute myeloblastic leukemia. Chronic myeloid leukemia. Myelodysplastic syndromes.

Topic 17. Infectious diseases. Tuberculosis. Syphilis

General characteristics of infectious diseases. Primary, hematogenic and secondary tuberculosis. The structure of tuberculosis granuloma. Periods of syphilis. The structure of the gumma. Congenital syphilis. Visceral syphilis.

Topic 18. Airborne droplet infections

Acute respiratory viral infections (influenza), meningococcal infection, diphtheria, scarlet fever, measles.

Topic 19. Intestinal infections

Typhoid fever, salmonellosis, dysentery, amoebiasis.

Topic 20. Especially dangerous infections. Sepsis

List of infections regulated by the International Health Regulations. Plague, cholera, anthrax. Classification of sepsis. The difference between sepsis and other infectious diseases. Clinical-morphological forms of sepsis and their characteristics.

Control work on Topics 13 – 20

Topic 21. Diseases of the lungs

Acute lung diseases. Pneumonia. Croupous pneumonia. Bronchopneumonia. Interstitial pneumonia. Pulmonary edema. Respiratory distress syndrome of adults. Pulmonary embolism. Chronic nonspecific

lung diseases (CNLD). Classification and mechanisms of CNLD. Chronic obstructive bronchitis. Bronchoectatic disease. Emphysema of the lungs. Bronchial asthma. Interstitial lung diseases. Lung cancer.

Topic 22. Diseases of the gastrointestinal tract

Gastritis: acute and chronic. Stomach ulcer and duodenal ulcer. Esophageal carcinoma. Stomach cancer. Appendicitis. Crohn's disease. Nonspecific ulcerative colitis. Cancer of the colon. Peritonitis. Pancreatitis.

Topic 23. Diseases of the liver and biliary tract

Hepatoses. Massive progressive necrosis of the liver. Steatosis of the liver. Hepatitis. Viral hepatitis: acute and chronic. Alcoholic Hepatitis. Cirrhosis of the liver. Classification of cirrhosis of the liver. Portal cirrhosis of the liver. Postnecrotic cirrhosis of the liver. Biliary cirrhosis of the liver. Syndromes of hepatocellular insufficiency and portal hypertension. Liver cancer. Cholecystitis. Chololithiasis.

Topic 24. Kidney diseases

Classification of kidney diseases. Glomerulopathy. Acute glomerulonephritis. Subacute (fast-progressive) glomerulonephritis. Non-inflammatory glomerulopathies (primary nephrotic syndrome). Membrane nephropathy. Lipoid nephrosis. Focal segmental glomerular hyalinosis. Membronoproliferative glomerulonephritis. Chronic glomerulonephritis. Tubulopathy. Morphology of acute and chronic renal failure. Interstitial diseases of the kidneys. Tubulo-interstitial nephritis. Pyelonephritis. Nephrolithiasis. Kidney cancer.

Topic 25. Diseases of the reproductive system. Pathology of pregnancy

Diseases of the male reproductive system. Benign hyperplasia and prostate cancer. Testicular tumors. Diseases of the female reproductive system. Endocervical and cervical cancer. Glandular endometrial hyperplasia and endometrial cancer. Endometriosis. Tumors of the ovaries. Ectopic pregnancy. Gestosis. Spontaneous abortion and premature birth. Trophoblastic disease.

Topic 26. Diseases of the mammary glands. Skin pathology

Dyshormonal mastopathy. Benign tumors of the mammary gland. Mammary cancer. Primary and secondary elements in skin diseases. Microscopic changes in skin diseases. Terms used in describing skin diseases. Organ-specific skin tumors.

Topic 27. Diseases of the endocrine system

Diseases of the thyroid gland. Goiter. Thyreotoxic goiter. Thyroiditis. Tumors of the thyroid gland. Diabetes. Tumor of the islet apparatus of the pancreas and the corresponding clinical syndromes. Tumors of the adenohypophysis. Tumors of the adrenal glands and the corresponding clinical syndromes. Multiple endocrine neoplasia.

Control work on Topics 21 – 27

Slides exam = Micropreparations

THEORETICAL EXAM