

Federal State Budgetary Educational Institution of Higher Education

«North-Ossetia State Medical Academy»

of the Ministry of Healthcare of the Russian Federation

Department of biological chemistry

APPROVE

Department head

BIOLOGICAL CHEMISTRY

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February 2024

### Thematic plan of practical classes

Discipline Clinical Laboratory Diagnostics

Cours 6

Faculty of General Medicine

for the spring semester 2023/2024 academic year

№ topic	Topic name	Lesson duration
1	2	12
1.	The main regulatory orders, instructions for the prevention of HIV infection and hepatitis in the conditions of the KDL (clinical diagnostic laboratory). Prevention of HIV infection and hepatitis, decontamination of materials and tools used in CDL. KDL equipment. Equipment, rules of operation, principle of operation. Types of quality control in KDL. Control materials used in quality control.	6,4
	Input control	Protocol
2.	Hematological research. Deciphering the general blood test (CBC). Calculation of the leukocyte formula in normal and pathological conditions. Morphological changes in erythrocytes in anemia. Reticulocyte count. Hematological analyzer as one of the express analysis methods for detecting hematopoietic tissue	6,4

	disorders. Microscopic examination of a bone marrow smear. cytochemical reactions.	
3.	Related module: Introduction to clinical laboratory diagnostics. Hematological research. Practical skills module.	6,4
4.	Clinical analysis of urine. Physico-chemical properties, microscopy of urine sediment. The use of analyzers of test strips for the study of urine is one of the express methods for detecting changes in the urinary system. Urinalysis according to Nechiporenko. Laboratory tests for nephron damage (Zimnitsky test). Study of duodenal contents. Determination of physical, chemical properties and microscopic examination. Rules for collecting feces for scatological research. Determination of physical, chemical properties and microscopic examination of feces. The study of the physical properties of sputum, the preparation of native preparations for microscopic examination. Sputum staining according to Romanovsky, according to Ziel-Nielsen. Bacterioscopic examination of sputum. Determination of the physical properties of liquor. The use of test strips to determine the physical and chemical properties - as one of the express diagnostic methods in the study of cerebrospinal fluid. Dilution and counting of cerebrospinal fluid cells in the Fuchs-Rosenthal and Goryaev chamber. Cell differentiation in Wozna-stained smears. Clinical and diagnostic significance of microscopic examination.	6,4
5.	Study of transudates. Determination of physical,	6,4

	<p>chemical properties and microscopic examination. Study of exudates. Determination of physical, chemical properties (use of test strips) and microscopic examination. Laboratory studies for venereal and nonspecific diseases of the genital area. Immunochromatographic test for the detection of antibodies to <i>Treponema pallidum</i>. Taking material, preparation of native preparations and differentiation of pathogens of bacterial vaginosis.</p> <p>Technique for collecting, storing and delivering material for research on the presence of helminths. Technique of preparation and microscopy of native preparations.</p> <p>Technique of preparation and microscopy of native preparations for vegetative forms of protozoan cysts.</p> <p>Immunochromatographic test for the diagnosis of giardiasis - as one of the modern methods of express diagnostics.</p> <p>Rules for the preparation of preparations for the study of the morphology of parasites. Malaria parasites, stages of development</p>	
6.	<p>Topic module: Clinical studies of biological material. Express diagnostics of clinical trials. Laboratory diagnostics and express methods used in the study of parasitic diseases and diseases of the genital area.</p> <p>Practical skills module.</p>	6,4
7.	<p>Biochemical research methods. Protein metabolism. Determination of urea, creatinine by unified methods. Determination of the activity of enzymes (aminotransferases, alkaline and acid phosphatases, amylases) by unified methods and express diagnostics of enzyme determination. The exchange of carbohydrates. Clinical and diagnostic value of determination of glucose in blood and urine.</p>	6,4

	<p>lipid metabolism. Laboratory diagnosis and clinical manifestations of lipidosis. Methods for the study of pigment metabolism. Vitamins.</p> <p>Water and mineral exchange. Methods for studying the acid-base state.</p> <p>Analyzer of blood gases, electrolytes and metabolites - as an express method for diagnosing critical conditions.</p> <p>Clinical immunology, assessment of the immune status (humoral and cellular immunity, primary and secondary immunodeficiency, laboratory methods for assessing the immune status).</p> <p>Immunological research methods in CDL and express diagnostic methods (latex test, for qualitative and semi-quantitative determination of the content of rheumatoid factor, antistreptolysin - O).</p> <p>Determination of blood groups according to the ABO system and the Rh factor.</p> <p>Express diagnostics for determining blood groups.</p> <p>Methods of enzyme immunoassay (ELISA).</p>	
8.	<p>The main links of the hemostasis system. Internal and external mechanism of activation of the hemostasis system. Norm and pathology of the hemostasis system. Monitoring treatment with direct and indirect anticoagulants, thrombolytics, DIC, antiphospholipid syndrome.</p> <p>Laboratory methods for assessing the processes of coagulation and fibrinolysis. Coagulogram. Features in hypo- and hypercoagulation. Clinical and diagnostic value.</p> <p>Chromatographic test for the qualitative determination of the content of D - dimer in plasma and whole blood.</p> <p>Rapid assessment of the content of soluble fibrin-monomer complexes (SFMK) in blood plasma.</p> <p>Cytological studies. The cytogram of organs and</p>	6.4

	tissues is Methods of bacteriological Methods of molecular genetic Immunological research.	normal. research. research.	
9.	Module on the topic: Methods of laboratory research (biochemical methods, hemostasis, cytological studies, bacteriological studies, molecular genetic studies). Practical skills module.		6,4
	Final control		Protocol
	<b>TOTAL:</b>		<b>58</b>

Compiled by assistant of the Department of Biological Chemistry Z.A. Khetagurova

«01» February 2024

