MINISTRY OF EDUCATION AND SCIENCE OF RUSSIA

Federal State Budgetary Educational Institution of higher education

«I.N. Ulianov Chuvash State University»

(FSBEI of HE «I.N. Ulianov Chuvash State University»)

Medical Faculty

Department of Internal Diseases

«APPROVE»
Vice-rector for Academic Affairs

_____ I.E. Poverinov

«13» 04 2022

Working programs of the discipline (module) «Клиническая фармакология / Clinical Pharmacology»

Direction of training / specialty 31.05.03 Стоматология / Dentistry
Graduate's qualification Врач-стоматолог / Dental Practitioner

Direction (profile) / specialization «Dentistry»

Form of training – очная / intramural
Course – 4
Term – 8
Total academic hours/credit points – 72/2
The year of beginning the training – 2022

Cheboksary - 2022

The fundamental document for compiling the working program of the discipline (module) Федеральный государственный образовательный стандарт высшего образования - специалитет по специальности 31.05.03 Стоматология (приказ Минобрнауки России от 12.08.2020 г. № 984)

Approved by:
docent, Candidate of Medical Sciences N.A. Komelyagina

The working program was approved at the meeting of the Department of Internal Diseases,
25.03.2022, protocol № 12
Head of the department L. M. Karzakova

Approved by
Dean of the Medical Faculty V.N. Diomidova
Acting Head of the Educational and Methodological Department E.A. Shirmanova

1. The purpose and objectives of training in the discipline (module)

The purpose of the discipline - training of students in the specialty 31.05.03- "Dentistry", rational and safe choice of available medicines (drugs) for individualized pharmacotherapy based on the principles of evidence-based medicine, using modern information on pharmacodynamics, pharmacokinetics, drug interactions, undesirable drug reactions, pharmacoeconomics, pharmacoepidemiology.

The objectives of the discipline - - to give a complete and coherent idea of clinical pharmacology as a subject in general;

- to consider the fundamental sections of clinical pharmacology, without which it is impossible to choose the optimal pharmacotherapy;

- to provide knowledge on the main issues of private clinical pharmacology of drugs most commonly used in dental practice (pharmacodynamics, pharmacokinetics, pharmacogenetics, drug interactions, undesirable drug reactions, pharmacoeconomics, pharmacoepidemiology), justifying their importance for the rational choice of drugs;

- formation of skills and abilities for the implementation of rational individual systemic and local pharmacotherapy of patients with pathology of the maxillofacial region and oral cavity, taking into account concomitant somatic pathology;

- training in the tactics of choice in emergency conditions in the practice of a dentist based on knowledge of pharmacodynamics, pharmacokinetics, drug interactions, undesirable drug reactions;

- training in evaluating the effectiveness and safety of the drugs used.

2. The place of practical training in the structure of the educational program of higher education

The discipline «Клиническая фармакология / Clinical Pharmacology» относится к обязательной части учебного плана refers to the mandatory part in the curriculum of the educational program of higher education (hereinafter referred to as the EP of HE) in the field of training / specialty 31.05.03 Стоматология, direction (profile) / specialization of the program «Dentistry».

Previous academic disciplines (modules) and (or) practices that form the knowledge, skills and abilities necessary for training in the discipline (module):

Основы материаловедения в стоматологии / Fundamentals of Materials Science in Dentistry

Фармакология / Pharmacology

Детская стоматология / Pediatric Dentistry

Ортодонтия и детское протезирование / Orthodontia and Pediatric Prosthetics

Ортопедическая стоматология / Orthopaedic Dentistry

Терапевтическая стоматология / Therapeutic Dentistry

Хирургическая стоматология / Surgical Dentistry

Knowledge, skills and abilities formed as a result of training in a discipline (module) are necessary when teaching in the following disciplines (modules) and (or) practices:

Неотложные состояния в клинике внутренних болезней / Emergency Conditions in the Clinical Presentation of Internal Diseases

Производственная практика (практика по получению профессиональных умений и опыта профессиональной деятельности (по детской стоматологии)) / On-the-job training (practical training for obtaining professional skills and professional experience (in pediatric dentistry))

Подготовка к сдаче и сдача государственного экзамена / Preparation for passing and passing the state exam

Челюстно-лицевая хирургия / Maxillofacial Surgery

3. Planned learning outcomes in the discipline (module), correlated with the planned learning outcomes

Planned learning outcomes in the discipline (module), correlated with the planned learning outcomes

Code and name of the competence	Code and name of the competence achievement	Descriptors for the indicator of competence achievement (learning)
ОПК-6 Способен назначать, осуществлять контроль эффективности и безопасности немедикаментозного и медикаментозного лечения при решении профессиональных задач / He/she is able to prescribe, monitor the effectiveness and safety of non-drug and pharmacological therapy in solving professional problems	ОПК-6.1 Способен определить показания и противопоказания при назначении медикаментозного, немедикаметозного и иных методов лечения / He/she is able to determine the indications and contraindications when prescribing medication, non-drug and other methods of treatment	Знать: - порядок оказания медицинской помощи населению при решении профессиональных задач; - клинические рекомендации по вопросам оказания медицинской помощи пациентам при решении профессиональных задач; - стандарты медицинской помощи, методы медикаментозного, немедикаментозного лечения и иных методов лечения. Уметь: - определять показания для назначения медикаментозного, немедикаментозного и иных методов лечения согласно порядка оказания медицинской помощи населению, клинических рекомендаций по вопросам оказания медицинской помощи и стандартам медицинской помощи при решении профессиональных задач; - определять противопоказания для назначения медикаментозного, немедикаментозного и иных методов лечения согласно порядка оказания медицинской помощи населению, клинических рекомендаций по вопросам оказания медицинской помощи и стандартам медицинской помощи при решении профессиональных задач. Владеть: - навыками подбора и назначения медикаментозного,

		немедикаментозного и иных методов лечения в соответствии с действующими порядками оказания медицинской помощи, клиническими рекомендациями, с учетом стандартов медицинской помощи при решении профессиональных задач.
ОПК-6 Способен назначать, осуществлять контроль эффективности и безопасности немедикаментозного и медикаментозного лечения при решении профессиональных задач / He/she is able to prescribe, monitor the effectiveness and safety of non-drug and pharmacological therapy in solving professional problems	ОПК-6.2 Способен оценить риски связанные с использованием медикаментозного, немедикаметозного и иных методов лечения / He/she is able to assess the risks associated with the use of medicamentous therapy, drug-free modalities and other methods of treatment	Знать: - риски связанные с использованием медикаментозного, немедикаментозного и иных методов лечения. Уметь: - оценивать развития рисков связанных с использованием медикаментозного, немедикаментозного и иных методов лечения с учетом возраста пациента, диагноза и клинической картины заболевания в соответствии с действующими клиническими рекомендациями и протоколами, порядками и стандартами оказания медицинской помощи. Владеть: - современными методами медикаментозного, немедикаментозного и иного лечения при решении профессиональных задач; - оценкой развития рисков связанных с использованием медикаментозного, немедикаментозного и иного лечения при решении профессиональных задач.
ОПК-6 Способен назначать, осуществлять контроль эффективности и безопасности немедикаментозного и медикаментозного лечения при решении профессиональных задач / He/she is able to prescribe, monitor the effectiveness and safety of non-drug and	ОПК-6.3 Способен оценить эффективность медикаментозного, немедикаметозного и иных методов лечения / He/she is able to assess the effectiveness of pharmacological therapy, non-drug and other methods of treatment	Знать: - современные методы медикаментозного, немедикаментозного и иных методов лечения в соответствии с действующими клиническими рекомендациями, протоколами, порядками и стандартами оказания медицинской помощи; - механизм действия основных лекарственных препаратов,

pharmacological therapy in solving professional problems		медицинские показания и противопоказания к их применению, осложнения, вызванные их применением. Уметь: - анализировать эффективность медикаментозного, немедикаментозного и иных методов лечения применяемых при решении профессиональных задач; - анализировать действие лекарственных препаратов. Владеть: - основами назначения медикаментозного, немедикаментозного и иного лечения при решении профессиональных задач; - навыками оценки эффективности медикаментозного, немедикаментозного и иного лечения при решении профессиональных задач
ПК-2 Способен назначить, контролировать эффективность и безопасность немедикаментозного и медикаментозного лечения / He/she is able to prescribe, monitor the effectiveness and safety of non-drug and pharmaceutical treatment	ПК-2.1 Способен разработать план лечения, назначить лекарственные препараты, немедикаментозное лечение, медицинские изделия в соответствии с действующими порядками оказания медицинской помощи, клиническими рекомендациями (протоколами лечения) по вопросам оказания медицинской помощи с учетом стандартов медицинской помощи / He/she is able to develop a treatment plan, prescribe medications, non-drug treatment, medical devices in accordance with current procedures for providing medical care, clinical recommendations (treatment protocols) on	Знать: - групповую принадлежность ЛС на основании вида его фармакологического действия. Типы названий лекарственных препаратов; -основные фармакологические характеристики лекарственных препаратов; -характеристику основных фармакокинетических параметров лекарственных препаратов, их изменение в зависимости от возраста, наличия сопутствующей системной патологии, фоновых соматических состояний; - порядки оказания медицинской помощи, клинические рекомендации, протоколы лечения по вопросам оказания медицинской помощи с учетом стандартов медицинской помощи. Уметь: - проводить адекватный выбор

	the issues of providing medical care, taking into account the standards of medical care	наиболее эффективных, безопасных и доступных лекарственных препаратов; -определять оптимальный режим дозирования; выбирать лекарственный препарат, дозу, путь, кратность и длительность введения ЛС в зависимости от фармакодинамики и фармакокинетики, возраста, пола, клинического и физиологического состояния пациента. Владеть: - навыками с учетом вида, локализации и тяжести течения заболевания, срочности оказания помощи и получения эффекта осуществлять: выбор вида терапии (системная, местная), выбор группы лекарственного препарата; - навыками выбора конкретного лекарственного препарата с учетом фармакодинамики и фармакокинетики, механизма действия ЛС, нежелательных лекарственных реакций и возможных лекарственных взаимодействий; - навыками выбора лекарственной формы, дозы и пути введения препаратов, схемы дозирования (кратность, зависимость от приема пищи и других ЛС); - проведением комбинированного назначения лечения; - навыками дозирования лекарственных препаратов, в том числе выбор лекарственного препарата в зависимости от соматического состояния.
ПК-2 Способен назначить, контролировать эффективность и безопасность немедикаментозного и медикаментозного лечения / He/she is able to	ПК-2.2 Способен контролировать эффективность и безопасность назначенного лечения, при необходимости корректировать его в	Знать: -особенности режимов дозирования лекарственных препаратов при системном и местном применении; -методы оценки клинической эффективности и безопасности

prescribe, monitor the effectiveness and safety of non-drug and pharmaceutical treatment	соответствии с действующими порядками оказания медицинской помощи, клиническими рекомендациями (протоколами лечения) по вопросам оказания медицинской помощи с учетом стандартов медицинской помощи / He/she is able to monitor the effectiveness and safety of the prescribed treatment, if necessary, adjust it in accordance with current procedures for providing medical care, clinical recommendations (treatment protocols) on providing medical care, taking into account the standards of medical care	применения основных групп лекарственных препаратов; -основные виды лекарственных взаимодействий; -классификацию нежелательных лекарственных реакций и порядок регистрации нежелательных лекарственных реакций. Способы профилактики и коррекции; -основы формулярной системы (формулярный список, формулярная статья, формулярный справочник), стандарты диагностики и медикаментозного лечения; -принципы медицины, основанной на доказательствах; -основные представления о порядке проведения клинических исследований лекарственных препаратов. принципах качественной клинической практики; -понятие полипрагмазии (частота, опасность, экономические аспекты). Уметь: - оценивать эффективность лекарственных препаратов с помощью клинических и лабораторных исследований; - прогнозировать, предупреждать, выявлять и проводить коррекцию нежелательных лекарственных реакций; -ориентироваться в научной информации о клинических исследованиях лекарственных препаратов, их объективности, соответствии правилам качественной клинической практики; - проводить оценку выбора, эффективности и безопасности применения лечения у конкретного больного. Владеть: - навыками контроля эффективности и безопасности назначенного лечения,

		прогнозирования риска развития нежелательных лекарственных реакций; - навыками выбора методов оценки эффективности и безопасности лечения; - навыками коррекции эффективности и безопасности назначенного лечения в соответствии с действующими порядками оказания медицинской помощи, клиническими рекомендациями (протоколами лечения) по повросам оказания медицинской помощи с учетом стандартов медицинской помощи.

4. Structure, scope and content of the discipline (module)

Educational activities in the discipline (module) are carried out:

- in the form of students' face-to-face work with the teaching staff of the organization and (or) persons involved by the organization to implement the educational programs on other terms (hereinafter - contact work);

- in the form of students' independent work.

Face-to-face work can be classroom-based, extramural, as well as it can be conducted in an electronic information and educational environment (EIEE).

Learning sessions in the discipline (module) and interim assessment of students are conducted in the form of face-to-face work and in the form of students' independent work.

During learning sessions in the discipline (module) face-to-face work includes: lecture -type classes, seminar-type classes and (or) group consultations, and (or) individual work of students with the teaching staff of the organization and (or) persons involved by the organization to implement the educational programs on other terms (including individual consultations).

Legend:

Lec – lectures, Lab – laboratory work, Pr – practical classes, ICW – individual face-to -face work, IW – independent work.

4.1. Content of the discipline (module)

Section name	The section's content	Formed competences	Competence achievement indicator
Section 1. General clinical pharmacology	The subject of clinical pharmacology. Interaction of medicines. Undesirable effects of medicines.	ОПК-6, ПК-2	ОПК-6.1, ОПК-6.2, ОПК-6.3, ПК-2.1, ПК-2.2
Section 2. Private Clinical Pharmacology	Clinical pharmacology of drugs for local and general anesthesia, muscle relaxants.		
Section 2. Private	Clinical pharmacology of		ОПК-6.1, ОПК-

Clinical Pharmacology	painkillers and anti-inflammatory drugs.		6.2, ОПК-6.3, ПК-2.1, ПК-2.2
Section 2. Private Clinical Pharmacology	Clinical pharmacology of antibacterial, antifungal and antiviral agents.	ОПК-6, ПК-2	ОПК-6.1, ОПК-6.2, ОПК-6.3, ПК-2.1, ПК-2.2
	Clinical pharmacology of drugs used to correct hemostasis disorders and blood rheology.		
	Clinical pharmacology of drugs used in emergency conditions in dentistry.		
	Clinical pharmacology of immunotropic drugs.		
	Agents that affect bone tissue.		
Individual contact work	Individual contact work.		

4.2. Scope of the discipline and types of academic work

Forms of control and types of academic work		Labor intensity of the discipline (module)	
		8	total
1. Face-to-face work:		48,2	48,2
In-class learning in total, including:		48	48
Лекционные занятия (Лек)		16	16
Лабораторные занятия (Лаб)		32	32
Индивидуальная контактная работа (ИКР)		0,2	0,2
2. Independent work of the student:		23,8	23,8
3. Intermediate certification (exam) (зачет)		3a	3a
Total:	academic hours	72	72
	credit units	2	2

№ item	The section's (theme's) name	Face-to face work, including in the electronic information and educational environment, academic hours				IW, academic hours	Total, academic hours
		Lect.	Pr.	Lab.	ICW		
	Section 1. General clinical pharmacology						
1	The subject of clinical pharmacology. Interaction of medicines. Undesirable effects of medicines.	2		4		2,8	8,8
	Section 2. Private Clinical Pharmacology						
2	Clinical pharmacology of drugs for local and general anesthesia, muscle relaxants.	2		4		3	9
3	Clinical pharmacology of painkillers and anti-inflammatory drugs.	2		4		3	9
4	Clinical pharmacology of antibacterial, antifungal and antiviral agents.	2		4		3	9
5	Clinical pharmacology of drugs used to correct hemostasis disorders and blood rheology.	2		4		3	9
6	Clinical pharmacology of drugs used in emergency conditions in dentistry.	2		4		3	9
7	Clinical pharmacology of immunotropic drugs.	2		4		3	9
8	Agents that affect bone tissue.	2		4		3	9
	Individual contact work						
9	Individual contact work.				0,2		0,2
Total academic hours		16		32	0,2	23,8	72

4.3. Summary of the discipline (module), structured by sections (topics)

Раздел 1. Section 1. General clinical pharmacology

Тема 1. The subject of clinical pharmacology. Interaction of medicines. Undesirable effects of medicines.

Лекционное занятие. The subject of clinical pharmacology. Interaction of medicines. Undesirable effects of medicines.

Disclosure of the concepts of "clinical pharmacology", "pharmacotherapy". The subject and objectives of clinical pharmacology. Pharmacokinetics of drugs. The value of FC for the choice of drugs and the determination of their dosage regimen: route of

administration, absorbability, bioavailability, bioequivalence, protein binding, volume of distribution, metabolism, half-life, clearance, excretion. Features of FC drugs in various age periods, in the pathology of the respiratory organs, gastrointestinal tract, blood circulation, liver and kidneys.

Pharmacodynamics of drugs. Definition of the concepts of PD: receptors, mechanism of action, effects, full and partial agonists and antagonists. Therapeutic in-dex, therapeutic breadth, minimum and maximum doses. The relationship between FD and FC. Features of PD drugs in different age periods.

Interaction of drugs. Undesirable drug reactions. Methods of detection, prevention and correction. Types of undesirable drug reactions. Features of the undesirable effect of drugs on the fetus. Features of undesirable drug reactions in dentistry. Manifestations of systemic adverse drug reactions from the oral mucosa, salivary glands, teeth. Changes in taste, sensitivity. Preventive and corrective measures.

Лабораторное занятие. Side effects and drug interactions.

Pharmacokinetics of drugs. The value of FC for the selection of drugs and the determination of their dosage regimen. Features of FC drugs in various age periods, in the pathology of the respiratory organs, gastrointestinal tract, blood circulation, liver and kidneys.

Pharmacodynamics of drugs. Definition of the concepts of PD: receptors, mechanism of action, effects, full and partial agonists and antagonists. Therapeutic index, therapeutic latitude, minimum and maximum doses. The relationship between FD and FC. Features of PD drugs in different age periods.

Interaction of drugs. Undesirable drug reactions. Methods of detection, prevention and correction. Types of undesirable drug reactions. Features of undesirable drug reactions in dentistry. Manifestations of systemic adverse drug reactions from the oral mucosa, salivary glands, teeth. Changes in taste, sensitivity. Preventive and corrective measures.

Раздел 2. Section 2. Private Clinical Pharmacology

Тема 2. Clinical pharmacology of drugs for local and general anesthesia, muscle relaxants.

Лекционное занятие. Clinical pharmacology of medicines for local and general anesthesia.

Medical anesthesia. Application points and mechanisms of action of drugs for local and general anesthesia.

Local anesthetics: classification, mechanism of action, pharmacological effects. Pharmacodynamics and pharmacokinetics. Undesirable drug reactions. Drug interactions. Indications and contraindications for use. Types of local anesthesia. The choice of a local anesthetic depends on the type of anesthesia. Features of the choice of local anesthetics, taking into account the characteristics of FC. The choice of local anesthetics depending on indications, anatomy, pathology, concomitant diseases. Features of use depending on age, during pregnancy and childbirth. Features of application in dentistry.

Means for general anesthesia. Intravenous anesthetics: barbiturates; non-barbiturate anesthetics. Inhalation anesthetics. Requirements for general anesthetics. Principles of choice, pharmacodynamics and pharmacokinetics. Undesirable drug reactions. Drug interactions.

Лабораторное занятие. Clinical pharmacology of medicines for local and general anesthesia.

Medical anesthesia. Mechanisms of action of drugs for local and general anesthesia.

Local anesthetics: classification, mechanism of action, pharmacological effects. Pharmacodynamics and pharmacokinetics. Undesirable drug reactions. Drug interactions. Indications and contraindications for use. Types of local anesthesia. The choice of a local anesthetic depends on the type of anesthesia. Features of the choice of local anesthetics,

taking into account the characteristics of FC. The choice of local anesthetics depending on the indications, anatomy, pathology, concomitant diseases. Features of use depending on age, during pregnancy and childbirth. Features of application in dentistry.

Тема 3. Clinical pharmacology of painkillers and anti-inflammatory drugs.

Лекционное занятие. Clinical pharmacology of nonsteroidal anti-inflammatory drugs and glucocorticosteroids.

General properties of nonsteroidal anti-inflammatory drugs. Classification of NSAIDs depending on the chemical structure, selectivity to COX isoenzymes, duration of action, anti-inflammatory activity. Mechanism of action, the main pharmacological effects of NSAIDs, pharmacodynamics and pharmacokinetics. Undesirable drug reactions. Indications and contraindications for use. Drug interactions. Features of application in dentistry.

Glucocorticosteroids: classification, mechanism of action, pharmacodynamics, main pharmacological effects of GCS, pharmacokinetics. Indications for emergency and long-term therapy. Undesirable drug reactions. Contraindications to use. Drug interactions. Features of application in dentistry. Principles of selection and determination of routes of administration, dosage regimen taking into account pharmacokinetics, adverse drug reactions, features of the inflammatory process, the state of the gastrointestinal tract, the cardiovascular system. Methods for evaluating effectiveness and safety. Diagnosis, correction and prevention of undesirable drug reactions. Indications and contraindications in dental practice.

Лабораторное занятие. Clinical pharmacology of nonsteroidal anti-inflammatory drugs and glucocorticosteroids.

General properties of nonsteroidal anti-inflammatory drugs. Classification of NSAIDs depending on the chemical structure, selectivity to COX isoenzymes, duration of action, anti-inflammatory activity. Mechanism of action, main pharmacological effects of NSAIDs, pharmacodynamics and pharmacokinetics. Undesirable drug reactions. Indications and contraindications for use. Drug interactions. Features of application in dentistry.

Glucocorticosteroids: classification, mechanism of action, pharmacodynamics, main pharmacological effects of GCS, pharmacokinetics. Indications for emergency and long-term therapy. Undesirable drug reactions. Contraindications to use. Drug interactions. Features of application in dentistry. Principles of selection and determination of routes of administration, dosage regimen taking into account pharmacokinetics, adverse drug reactions, features of the inflammatory process, the state of the gastrointestinal tract, the cardiovascular system. Methods for evaluating effectiveness and safety. Diagnosis, correction and prevention of undesirable drug reactions. Indications and contraindications in dental practice.

Тема 4. Clinical pharmacology of antibacterial, antifungal and antiviral agents.

Лекционное занятие. Clinical pharmacology of antibacterial, antifungal and antiviral agents.

General features of anti-infectious chemotherapy drugs. Classification of antibacterial drugs. Characteristics of individual groups of drugs. The principles of rational choice (empirical and after determining the pathogen) and determining the dosage regimen of an antimicrobial drug.

Pharmacokinetics of antimicrobial drugs in patients with renal and hepatic insufficiency. Features of antibacterial therapy during pregnancy and lactation. Methods for evaluating the effectiveness and safety of antimicrobial drugs. Diagnosis, correction and prevention of undesirable drug reactions. A combination of antimicrobial drugs.

Features of the microflora of the oral cavity. Indications for the systemic use of antibiotics in dentistry. The choice of antimicrobial drugs for the systemic treatment of infection of the maxillofacial region and oral cavity. Features of preventive use of antibiotics in dentistry.

Лабораторное занятие. Clinical pharmacology of antibacterial, antifungal and antiviral agents.

Clinical pharmacology of antimicrobial drugs. Classification.

Clinical pharmacology of antifungal drugs. Classification.

Antiviral agents. Classification.

Spectrum of antimicrobial activity. Principles of choice (empirical and etiotropic), determination of the dosage regimen depending on the localization of infection and severity of the condition, kidney function. Methods for evaluating the effectiveness and safety of antimicrobial drugs. Diagnostics and prevention of NLR. A combination of antimicrobial drugs and interactions when co-administered with drugs of other groups. Clinical and pharmacological approaches, taking into account nosology, individual characteristics of pharmacokinetics and pharmacodynamics, to the choice of antifungal and antiviral drugs.

Тема 5. Clinical pharmacology of drugs used to correct hemostasis disorders and blood rheology.

Лекционное занятие. Clinical pharmacology of drugs used to correct hemostasis disorders and blood rheology.

General features of antiplatelet drugs. Classification of drugs. Characteristics of individual groups of drugs. Principles of rational choice and determination of the dosage regimen of drugs used to correct hemostasis disorders and blood rheology.

Features of pharmacokinetics of drugs used to correct hemostasis disorders and blood rheology in patients with renal and hepatic insufficiency. Methods for evaluating the effectiveness and safety of medicines used to correct hemostasis disorders and blood rheology. Diagnosis, correction and prevention of undesirable drug reactions. Combination of antiplatelet drugs.

Лабораторное занятие. Clinical pharmacology of drugs used to correct hemostasis disorders and blood rheology.

General features of antiplatelet drugs. Classification of drugs. Characteristics of individual groups of drugs. Principles of rational choice and determination of the dosage regimen of drugs used to correct hemostasis disorders and blood rheology.

Features of pharmacokinetics of drugs used to correct hemostasis disorders and blood rheology in patients with renal and hepatic insufficiency. Methods for evaluating the effectiveness and safety of medicines used to correct hemostasis disorders and blood rheology. Diagnosis, correction and prevention of undesirable drug reactions. Combination of antiplatelet drugs.

Selection of the optimal antithrombotic or hemostatic drug depending on the nature of the disease; determination of the optimal dosage regimen of an antithrombotic or hemostatic drug, taking into account pharmacokinetics, the state of the organs of metabolism and excretion, age, the presence of concomitant pathology, drug interactions;

evaluation of the effectiveness and safety of the therapy, prediction and early detection of undesirable effects.

Tactics of a dentist in the management of patients receiving antithrombotic drugs. Features of hemostasis during tooth extraction.

Тема 6. Clinical pharmacology of drugs used in emergency conditions in dentistry.

Лекционное занятие. Clinical pharmacology of drugs used in emergency conditions in dentistry.

Drugs used in anaphylactic shock – adrenomimetics (adrenaline); glucocorticoids (hydrocortisone, prednisone), bronchodilators (berodual), antihistamines. Principles of selection, determination of the sequence and routes of administration, dosage regimen taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions.

Drugs used in convulsive syndrome: barbiturates (phenobarbital); benzodiazepines (diazepam); anxiolytics (sodium oxybutyrate); neuroleptics (chlorpromazine, droperidol). Principles of selection, taking into account PD and FC, routes of administration, concomitant pathology. Undesirable drug reactions. Drug interactions. Contraindications.

Drugs used in an attack of bronchial asthma: B2 agonists (salbutamol, phenoterol); m

-cholinolytics (ipratropium bromide); combined preparations (berodual); xanthines (euphyllin), glucocorticoids (prednisolone). Principles of drug selection, determination of routes of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions.

Clinical pharmacology of drugs used in emergency conditions of pathology of the cardiovascular system.

Drugs used in hypertensive crisis: ACE inhibitors (captopril), antihypertensive drugs of central action (clonidine), calcium channel blockers (nifedipine), beta-blockers (propranolol); diuretics (furosemide). Principles of choice, route of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions. Drug interactions.

Drugs used in ischemic heart disease (angina pectoris, acute coronary syndrome): nitrates (nitroglycerin, isosorbide dinitrate); beta-blockers (metoprolol, atenolol); antiplatelet agents (acetylsalicylic acid, clopidogrel). Principles of choice, route of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions.

Drugs used in acute cardiac arrhythmias: supraventricular paroxysmal tachycardia (verapamil, nibentan, adenosine, sotalol); ventricular tachycardia (amiodarone), bradyarrhythmia (atropine sulfate). Principles of choice, route of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions. Drug interactions.

Лабораторное занятие. Clinical pharmacology of drugs used in emergency conditions in dentistry.

Anaphylactic shock. Drugs used in anaphylactic shock – adrenomimetics (adrenaline); glucocorticoids (hydrocortisone, prednisone), bronchodilators (berodual), antihistamines. Principles of selection, determination of the sequence and routes of administration, dosage regimen taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions.

Convulsive syndrome. Drugs used in convulsive syndrome: barbiturates (phenobarbital); benzodiazepines (diazepam); anxiolytics (sodium oxybutyrate); neuroleptics (chlorpromazine, droperidol). Principles of selection taking into account PD and FC, routes of administration, concomitant pathology. Undesirable drug reactions. Drug interactions. Contraindications.

Bronchial obstruction syndrome. Drugs used in an attack of bronchial asthma: □2 agonists (salbutamol, phenoterol); m-cholinolytics (ipratropium bromide); combined drugs (berodual); xanthines (euphyllin), glucocorticoids (prednisolone). Principles of drug selection, determination of routes of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions.

Clinical pharmacology of drugs used in emergency conditions of pathology of the cardiovascular system.

Hypertension. Drugs used in hypertensive crisis: ACE inhibitors (captopril), antihypertensive drugs of central action (clonidine), calcium channel blockers (nifedipine), beta-blockers (propranolol); diuretics (furosemide). Principles of choice, route of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions. Drug interactions.

Chest pain syndrome. Drugs used in ischemic heart disease (angina pectoris, acute coronary syndrome): nitrates (nitroglycerin, isosorbide dinitrate); beta-blockers (metoprolol, atenolol); antiplatelet agents (acetylsalicylic acid, clopidogrel). Principles of choice, route of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions.

Cardiac arrhythmia syndrome. Drugs used in acute cardiac arrhythmias: supraventricular paroxysmal tachycardia (verapamil, nibentan, adenosine, sotalol); ventricular tachycardia (amiodarone), bradyarrhythmia (atropine sulfate). Principles of choice, route of administration, rational dosage regimen of drugs taking into account clinical symptoms, PD and FC, the presence of concomitant pathology. Undesirable drug reactions. Drug interactions.

Тема 7. Clinical pharmacology of immunotropic drugs.

Лекционное занятие. Clinical pharmacology of immunotropic drugs.

Determination of immunomodulators. Classification of immunomodulators.

Immunomodulators of exogenous origin: mechanism of action, pharmacodynamic effects, indications, contraindications undesirable effects.

Drugs of endogenous origin. Chemically pure and synthesized substances: scope of application. General principles of immunotherapy in patients with insufficient anti-infective protection.

Лабораторное занятие. Clinical pharmacology of immunotropic drugs.

Determination of immunomodulators. Classification of immunomodulators.

Immunomodulators of exogenous origin: mechanism of action, pharmacodynamic effects, indications, contraindications undesirable effects.

Drugs of endogenous origin. Chemically pure and synthesized substances: scope of application. General principles of immunotherapy in patients with insufficient anti-infective protection.

Тема 8. Agents that affect bone tissue.

Лекционное занятие. Agents that affect bone tissue.

Factors affecting the permeability of enamel. Features of calcium and fluorine metabolism.

Fluorine.Indications for use. Mechanism of action and main therapeutic effects. Pharmacokinetics. Undesirable actions. Contraindications. Preparations, features of application in dentistry.

Calcium.Indications for use. Mechanism of action and main therapeutic effects. Pharmacokinetics. Undesirable actions. Contraindications. Preparations, features of application in dentistry.

Лабораторное занятие. Agents that affect bone tissue.

Factors affecting the permeability of enamel. Features of calcium and fluorine metabolism.

Fluorine.Indications for use. Mechanism of action and main therapeutic effects. Pharmacokinetics. Undesirable actions. Contraindications. Drugs.

Calcium.Indications for use. Mechanism of action and main therapeutic effects. Pharmacokinetics. Undesirable actions. Contraindications. Drugs.

5. Educational technologies

To implement the competence-based approach in the study of the discipline (module), extensive use of active and interactive methods of conducting classes in the educational process is provided:

When conducting educational work on the discipline "Clinical Pharmacology", the main emphasis is given to laboratory (classroom) work, using active learning methods and is aimed at the formation and development of professional skills of students. Active and interactive forms of teaching are widely used in the educational process in the form of analysis of diseases in patients, business and role-playing games, analysis of specific situations, computer demonstrations of disease histories, discussions. Extracurricular work of students includes attending conferences, participating in master classes of experts and specialists in combination with independent search for new literary data on the Internet.

The constituent elements of educational technologies are:

lectures – an interactive form of teaching is also used to present new material, namely, analysis of nosological forms of diseases, discussion of topical issues of etiology, pathogenesis, clinic, diagnosis, treatment, issues of preventive aspects of work;

laboratory classes are conducted with the supervision and analysis of patients according to the topics of classes, using therapeutic and diagnostic potential, multimedia support;

the use of multimedia tools (presentations, videos, projectors) – to improve the quality of perception of the studied material;

the use of diagnostic kits is for obtaining a full–fledged perception of the patient and solving issues of a therapeutic and preventive nature;

supervised homework – to encourage students to work independently;

control works – for intermediate certification and assessment of the degree of assimilation of the material passed by students.

situational tasks, role–playing games - to assess the degree of assimilation of the material studied by students.

6. Forms of control and types of evaluation materials for the discipline (module)

Intermediate attestation - evaluation of intermediate and final results of training in the discipline (module).

6.1. Sample list of questions for the credit test

1. Side effects of drugs (OPK-6, PK-2).
2. Drug interactions (OPK-6, PK-2).
3. Clinical features of the use of local anesthetics (OPK-6, PK2).
4. Clinical pharmacology of general anesthetics (OPK-6, PK-25
. Classification, mechanisms of action, side effects of muscle relaxants (OPK-6, PC-2).
6. Groups of antiviral drugs, indications, contraindications to use (OPK-6, PC-2).
7. Mechanisms of action of antibiotics. Classification, spectrum of activity of drugs of different groups (OPK-6, PK-2).
8. Features of antibacterial therapy for impaired liver and kidney function (OPK-6, PC-2).
9. The use of antibiotics during pregnancy and lactation (OPK-6, PC-2).
10. Features of the use of antibiotics in the practice of a dentist (OPK-6, PC-2).
11. Preventive use of antibacterial drugs in dentistry (OPK-6, PC-2).
12. Clinical pharmacology of antifungal drugs (OPK-6, PC-2).
13. Clinical pharmacology of antiviral drugs (OPK-6, PC-2).
14. Clinical pharmacology of narcotic analgesics (OPK-6, PC-2).
15. Clinical pharmacology of nonsteroidal anti-inflammatory drugs (OPK-6, PK-2).
16. Glucocorticosteroids. The main pharmacological effects, indications for use

(OPK-6, PC-2).

17. The effectiveness and safety of treatment with glucocorticosteroids (OPK-6, PC-2).

18. The use of painkillers and anti-inflammatory drugs in dentistry (OPK-6, PC-2).

19. Tactics of a dentist when uncomplicated hypertensive crisis (OPK-6, PC-2).

20. Mechanisms of antianginal action of nitrates, indications and contraindications for use, adverse reactions (OPK-6, PC-2).

21. Tactics of a dentist with an attack of angina pectoris (OPK-6, PC-2).

22. Stopping bleeding during tooth extraction (OPK-6, PC-2).

23. Clinical pharmacology of anticoagulants (OPK-6, PC-2).

24. Clinical pharmacology of antiplatelet agents (OPK-6, PC-2).

25. Clinical pharmacology of hemostatic drugs (OPK-6, PC-2).

26. Tactics of a dentist in the management of patients receiving direct and indirect anticoagulants, disaggregants (OPK-6, PC-2).

27. The use of antihistamines for the treatment of allergic diseases (OPK-6, PC-2).

28. Clinical pharmacology of antiseptics (OPK-6, PK-2).

29. Features of the use of fluoride preparations in different age groups of patients (OPK-6, PK-2).

30. Side effects and toxicity of fluoride preparations (OPK-6, PK-2).

31. The use of adrenergic drugs in dentistry (OPK-6, PC-2).

32. Tactics of a dentist with anaphylactic shock (OPK-6, PC-2).

6.2. Sample list of questions for the examination

Not provided.

6.3. Suggested themes of term papers (projects)

Not provided.

6.4. Suggested themes of term projects

Not provided.

6.5. Suggested topics of calculation and graphic works

Not provided.

7. Educational, methodological, informational and software support of the discipline (module)

The electronic catalog and electronic information resources provided by the scientific library of the FSBEI of HE "I. N. Ulianov Chuvash State University" are available at the link http://library.chuvsu.ru/

7.1. Regulatory documents, standards and rules

1. The Constitution of the Russian Federation: (adopted by the National Assembly. by a vote of 12 Dec. 1993) : (as amended, introduced. By the Law of the Russian Federation on Amendments to the Constitution of the Russian Federation dated July 21, 2014 No. 11-FKZ). – Text : electronic // ConsultantPlus: reliable legal support : ofic. website. – URL: http://www.consultant.ru/document/cons_doc_LAW_28399/

2. Federal Law No. 323-FZ of November 21, 2011 "On the basics of public health protection in the Russian Federation"

3. Federal Law "On Compulsory Medical Insurance in the Russian Federation" No. 326-FZ dated November 29, 2010. (as amended on 12/28/2013 No. 390 FZ)

4. Law of the Russian Federation of 07.02.1992 No. 2300-1 "On Consumer Rights Protection"

5. The Civil Code of the Russian Federation

6. Federal Law of the Russian Federation No. 59-FZ of 02.05.2006 On the Procedure for Considering Appeals of Citizens of the Russian Federation"

7. Order of the Ministry of Health of the Russian Federation No. 575n Procedure for the provision of medical care in the profile "Clinical pharmacology"

8. Federal Law No. 61-FZ of April 12, 2010 "On the Circulation of Medicines"

9. Federal Service for Supervision of Healthcare Order No. 1071 of 02/15/2017 On Approval of the Procedure for Pharmacovigilance.

10. The Code of Professional Ethics of a doctor of the Russian Federation. Adopted by the First National Congress of Doctors of the Russian Federation (Moscow, October 5, 2012)

7.2. Recommended basic educational and methodological literature

№ item	Name
1	Коноплева Клиническая фармакология в 2 ч. Часть 2 [Электронный ресурс]:Учебник и практикум для вузов. - Москва: Юрайт, 2022. - 340 с – Режим доступа: https://urait.ru/bcode/490650
2	Коноплева Клиническая фармакология в 2 ч. Часть 1 [Электронный ресурс]:Учебник и практикум для вузов. - Москва: Юрайт, 2022. - 346 с – Режим доступа: https://urait.ru/bcode/490649

7.3. Recommended supplementary educational and methodological literature

№ item	Name
1	Венгеровский А.И. Фармакология [Электронный ресурс]:. - Москва: ГЭОТАР-Медиа, 2022. - – Режим доступа: https://www.studentlibrary.ru/book/ISBN9785970467220.html
2	Коноплева Фармакология [Электронный ресурс]:учебник и практикум для вузов. - Москва: Юрайт, 2022. - 433 с – Режим доступа: https://urait.ru/bcode/468839
3	Харкевич Д. А. Фармакология [Электронный ресурс]:. - Москва: ГЭОТАР-Медиа, 2022. - – Режим доступа: https://www.studentlibrary.ru/book/ISBN9785970468203.html

7.4. List of resources of the "Internet" information and telecommunication network

№ item	Name	Link to the resource

1	Коноплева. Клиническая фармакология в 2 ч. Часть 2 [Электронный ресурс]:Учебник и практикум. - Москва: Издательство Юрайт, 2018. - 340	http://www.biblio-online.ru/book/21D81E75-0582-470C-A642-C8F8661AE3E9
2	Коноплева. Клиническая фармакология в 2 ч. Часть 1 [Электронный ресурс]:Учебник и практикум. - Москва: Издательство Юрайт, 2018. - 346	http://www.biblio-online.ru/book/DA8EFFC5-1EAD-4065-B0A6-B66420131682

7.5. Software, professional databases, information and reference systems, electronic educational resources and electronic library systems

Software, professional databases, information and reference systems provided by the Informatization Department of the FSBEI of HE "I.N. Ulianov Chuvash State University" are available for download at the link http://ui.chuvsu.ru //. The Unified Register of Russian programs for electronic computers and databases, including freely distributed ones, is available at the link reestr.minsvyaz.ru/reestr /.

7.5.1. Licensed and freely distributed software

Microsoft Windows operating System and/or Unix-like operating system and/or mobile operating system;

Office software packages:

Microsoft Office and/or LibreOffice

and (or) OpenOffice and (or) analogues;

Browsers, including Yandex.Browser.

List of software:

7.5.2. Lists of professional databases and (or) information reference systems and (or) electronic library systems and (or) electronic educational resources

8. Material and technical support of the discipline

Classrooms for lecture-type classes in the discipline are equipped with a teacher's automated workplace consisting of: a personal computer/laptop, multimedia equipment with a screen and (or) SMART interactive whiteboard/SMART TV.

The premises for students' independent work are equipped with computer equipment enabling to connect to the Internet and provide access to the electronic information and educational environment of the FSBEI of HE "I.N. Ulianov Chuvash State University".

№ item	Lesson type	Brief description and characteristics of the composition of installations, measuring and diagnostic equipment, computer equipment and experimental automation tools

1	Лаб	Учебная аудитория для занятий семинарского типа, текущего контроля и промежуточной аттестации. Оборудование: компьютерная техника с необходимым программным обеспечением, с подключением к сети Интернет и обеспечением доступа в электронную информационно-образовательную среду университета, мультимедийное оборудование (проектор, экран, ПК или ноутбук), учебная доска, учебная мебель
2	Лек	Учебная аудитория для проведения занятий лекционного и семинарского типа, текущего контроля и промежуточной аттестации. Учебная мебель. Оборудование: учебная доска Стационарное и/или переносное мультимедийное оборудование.
3	Ср	Помещение для самостоятельной работы обучающихся. Учебная мебель. Компьютерная техника с возможностью подключения к сети «Интернет» и обеспечением доступа в электронную информационно-образовательную среду университета. Стационарное и/или переносное мультимедийное оборудование.

9. Means of adapting the discipline teaching to the needs of persons with physical conditions

If necessary, persons with physical conditions can be offered one of the following options for perceiving information, taking into account their individual psychophysical characteristics:

1) using e-learning and distance learning technologies.

2) using special equipment (enginery) and software in accordance with the students' health restrictions in the Training Centers for Persons with Disabilities and Physical Conditions (hereinafter referred to as special needs) available at the university.

In the course of training, if necessary, the following conditions are provided for persons with visual, hearing and musculoskeletal disorders:

- for persons with visual impairments: educational and methodological materials in printed form in enlarged font; in the form of an electronic document; in the form of an audio file (conversion of educational materials into audio format); in printed form in Braille; individual consultations involving a tactile interpreter; individual assignments and consultations.

- for people with hearing impairments: educational and methodological materials in printed form; in the form of an electronic document; video materials with subtitles; individual consultations involving a sign language interpreter; individual assignments and consultations.

- for persons with disorders of the musculoskeletal system: educational and methodological materials in printed form; in the form of an electronic document; in the form of an audio file; individual assignments and consultations.

10. Guidelines for students to perform independent work

The purpose of the student's independent work (IW) is to consolidate the theoretical knowledge gained and to acquire practical skills in using and performing research of

algorithms and data structures when designing application software programs. IW includes independent study of educational issues, preparation for laboratory classes, performing calculation and graphic work, preparation for a test and an exam.

The list of questions and tasks for independent work to prepare for laboratory classes is given in the corresponding methodological instructive regulations in the description of each laboratory work.

The list of questions and tasks for independent work to carry out calculation and graphic work is given in the relevant methodological instructive regulations.

Independent work of students is an integral part of the educational process. The purpose of independent work of students is to master fundamental knowledge, professional skills and skills, experience in creative, research activities.

The main forms of organizing independent work of students are: classroom independent work under the guidance and supervision of a teacher (at lectures, laboratory classes, etc. and consultations); extracurricular independent work under the guidance and supervision of a teacher (during consultations, during research work), extracurricular independent work - planned educational, research, research work of students, performed during extracurricular time on the assignment and with the methodical guidance of the teacher, but without his direct participation.

When performing independent work, students should rely mainly on the knowledge and skills acquired in lectures, laboratory classes, group and individual classes. This provides the necessary basis for further in-depth study of other disciplines. However, this knowledge needs to be activated.

The forms of independent work of students provided by the discipline include:

- Preparation for laboratory classes, group and individual classes.
- Independent study of educational issues.
- Preparation for the test.

The following sources are recommended for independent preparation for laboratory, group and individual classes, study of educational issues, preparation for the test:

- lecture notes and materials of laboratory, group and individual classes;
- educational (scientific) literature of the relevant profile;
- Internet resources.

At the beginning of the course, the teacher informs students about the forms, types and content of independent work, explains the requirements for the results of independent work, as well as forms and methods of control and evaluation criteria.

According to the questions proposed by the teacher, the student studies the content of recommended sections, chapters, paragraphs, textbooks, textbooks and monographs; statistical collections; reviews; articles in periodicals. Regulatory legal acts are investigated using the legal bases "Consultant – Plus" or "Guarantor", as well as Internet resources. The forms of control of such individual work are surveys in practical, group and individual classes, checking notes, conclusions.

Individual creative tasks involve:

- preparation of analytical individual work on the topic proposed by the teacher. The completed task is evaluated taking into account the quality of the analysis, identification of factors, causes, conditions of changes, trends; justifying conclusions; proposals put forward by the author;
- preparation for a discussion, a business game, etc.;
- a critical review of articles from the list recommended by the teacher, etc.

Test tasks are a form of ongoing control. They are designed to highlight the main provisions of the discipline, to understand the features based on theory, to repeat and consolidate the educational material, to test knowledge, to control residual knowledge.

The topics submitted for independent study, students need to take notes. The

summary summarizes the main essence of the educational material, provides the necessary tabular data, diagrams.

The main stages of self-study of educational issues:

1. Initial acquaintance with the material of the topic under study according to the text of the textbook.
2. Highlighting the main thing in the studied material, compiling the usual short notes.
3. Selection of reference signals for this text in the form of separate words, drawings.
4. Thinking over a schematic way of coding knowledge, using a different font, etc.
5. Drawing up a reference summary.

11. Methodological instructive regulations for students studying the discipline (module)

When mastering the discipline "Clinical Pharmacology", students' independent work, lectures and laboratory classes are used. Independent work of students involves a deeper study of individual course topics defined by the program. At the lectures, the teacher examines the issues of the course program, compiled in accordance with the state educational standard. Due to the insufficient number of classroom hours, some topics cannot be covered in full, so the teacher, at his discretion, takes out some questions for independent work of students, recommending this or that literature. In addition, for better mastering of the material and systematization of knowledge on the discipline, it is necessary to constantly analyze lecture materials according to notes and textbooks. During the independent study of the lecture material, special attention should be paid to the questions that have arisen, incomprehensible terms, controversial points of view. All such points should be highlighted or written out separately for further discussion at the laboratory lesson. If necessary, contact the teacher for advice. A complete list of literature on the discipline is given in the working program of the course. Laboratory classes are designed to assimilate the material by curating thematic patients under the supervision of a teacher, working with medical documentation, participating in an instrumental examination of a patient, solving clinical and situational problems.

11.1. Methodological instructive regulations for preparing for seminar-type classes

The main goal of laboratory work is to consolidate theoretical knowledge and skills of the basics of clinical thinking, mastering skills in examining patients and making decisions about the appointment of necessary treatment, drawing up an algorithm for complex patient management. The content of laboratory work: analysis of nosological forms of diseases of internal organs, analysis of etiology, pathogenesis, clinic, diagnosis, treatment. In the course of completing tasks, students develop practical skills and skills of patient examinations, interpretation of laboratory and instrumental results of examinations, which form part of professional practical training, as well as research skills (observe, compare, analyze, establish dependencies, draw conclusions and generalizations, independently conduct research, formalize the results).; skills and abilities are being formed to implement rational individual systemic and local pharmacotherapy of patients with pathology of the maxillofacial region and oral cavity, taking into account concomitant somatic pathology.

Laboratory classes may be reproductive, partially exploratory and exploratory in nature.

Works of a reproductive nature are distinguished by the fact that when they are carried out, students use detailed instructions that specify: the purpose and tasks of the work, explanations (theoretical foundations), the order of work, control questions, educational and special literature.

Works that are partially exploratory in nature are distinguished by the fact that when they are carried out, students do not use detailed instructions, they are not given the procedure for performing the necessary actions, and require students to independently analyze, choose ways to perform work in instructional and reference literature, etc.

Research papers are characterized by the fact that students have to solve a new problem of a research nature for them, based on their existing theoretical knowledge.

Forms of organization of students in laboratory classes: frontal, group and individual.

In the frontal form of the organization of classes, all students perform the same work at the same time.

In the group form of organizing classes, the same work is performed by teams of 2 to 5 people.

With an individual form of organization of classes, each student performs an individual task.

Execution of a written assignment for the work performed (patient supervision, solution of a clinical situational problem) in accordance with the requirements. A written report on the laboratory work performed should contain the following information:

- the name of the work and information about the author of the report (course, first name, last name);
- identification of leading syndromes (clinical, laboratory, instrumental);
- making preliminary and clinical diagnoses;
- drawing up a plan for additional laboratory and instrumental examination;
- interpretation of the results of laboratory and instrumental research;
- preparation of a treatment program: conservative (non-drug and medical), preventive and determination of indications for surgical treatment;
- list of used literature.

Grades for laboratory work are taken into account as an indicator of the student's current academic performance

11.2. Methodological instructive regulations for preparing for an examination

Not provided

11.3. Methodological instructive regulations for preparing for a test

The test aims to evaluate the student's work for a certain course: the theoretical knowledge gained, their strength, the development of logical and creative thinking, the acquisition of independent work skills, the ability to analyze and synthesize the knowledge gained and apply it in practice.

Preparation of students for passing the test includes:

- viewing the program of the training course;
- identification of the sources necessary for the preparation (textbooks, additional literature, etc.) and their study;
- use of lecture notes, materials of laboratory classes;
- consulting with a teacher.

Preparation for the test begins with the first lesson in the discipline, at which students receive a general teacher's attitude and a list of basic requirements for current and final reporting. At the same time, it is important to systematically master the material from the very beginning, guided, first of all, by the list of questions for the test, to take notes of sources important for solving educational tasks. During the semester, replenishment, systematization and adjustment of developments take place, the development of new and consolidation of already studied material

11.4. Methodological instructive regulations for performing computational and graphical

Not provided

11.5. Methodological instructive regulations for performing a control work

Not provided

11.6. Methodological instructive regulations for performing a course work (project)

Not provided

List of additions and changes

The name and details (if any) of the document attached to the Working Program of the discipline (module) containing the text of updates	Department's decision		Full name of department head:
	Date	Protocol №	