

## **Abstract of the work program of the discipline**

### **«Pharmacology»**

The main professional educational program of higher education is the specialty program in the specialty 31.05.03 Dentistry, approved on 30.03.2022.

Form of study: full-time

The period of development of OPOP IN: 5 years

Department: Pharmacology with Clinical Pharmacology

**1. 1. The purpose of the discipline:** mastering the discipline of Pharmacology

**2. The place of discipline in the structure of OPOP MD:** the discipline

Pharmacology belongs to the mandatory part of Block 1 of the Federal State

Educational Standard in the specialty 31.05.03 Dentistry

**Requirements for the results of mastering the discipline:**

The process of studying the discipline is aimed at the formation and development of the competencies of **OPK-6 ID-1; PC-2 ID-5, ID-7, ID-21**. As a result of studying the discipline, the student must

**To know:**

The content of the discipline, its tasks, the history of the development of domestic pharmacology, achievements and problems of Russian pharmacology.

The recipe, its structure. Principles of composing recipes. Forms of prescription forms. Solid, soft, liquid dosage forms. Dosage forms for injection. The rules for prescribing them in prescriptions. State Pharmacopoeia. The concept of the rules of prescription and over-the-counter medicines. Documents regulating the turnover of medicines. Rules for the storage and use of medicines.

Definition of the concepts of pharmacokinetics and pharmacodynamics, the route of administration of drugs, especially the absorption, distribution, biotransformation, excretion; factors influencing the absorption, distribution, metabolism and excretion of drugs from the body; the pharmacokinetic parameters: volume of distribution (Vd), the rate constant of elimination (Kelim), period of half-life (t<sub>1/2</sub>), clearance (Cl), steady-state concentration (C<sub>ss</sub>), bioavailability (F), the value of these indicators.

Principles of classification of medicines, names of pharmacological groups and international nonproprietary names: agents affecting afferent innervation (local anesthetics, astringents, enveloping agents, adsorbing agents, irritating agents, expectorants of reflex action, bitterness,

laxatives and cholagogues of reflex action). agents affecting efferent innervation: agents acting on cholinergic synapses (M-cholinomimetic agents, N-cholinomimetic agents, M, N-cholinomimetic agents, anticholinesterase agents, M-holinoblocking agents, N-holinoblocking agents, ganglioblocking agents, agents blocking neuromuscular transmission); agents acting on adrenergic synapses (adrenomimetic agents, sympathomimetics, adrenoblocking agents, sympatholytic agents). As well as the physico-chemical characteristics of the drugs, pharmacodynamics (main effects, localization and mechanism of action), side effects,

indications for use, have an idea about the pharmacokinetics of drugs of these groups, the main dosage forms, routes of administration, the order of release of drugs from the pharmacy. Principles of classification of general anesthetics, ethyl alcohol, hypnotics, antiepileptic drugs, antiparkinsonian drugs, analgesics, psychotropic drugs, antipsychotics, antidepressants, drugs for the treatment of mania,

anxiolytics, sedatives, psychostimulants, nootropic drugs, analeptics, drugs that cause drug dependence. Names of pharmacological groups and international nonproprietary names.

As well as the physico-chemical characteristics of drugs, pharmacodynamics (main effects, localization and mechanism of action), side effects, indications for use, have an idea

about the features of the pharmacokinetics of drugs of these groups, the main dosage forms, routes of administration, the order of release of drugs from the pharmacy.

Principles of classification, names of pharmacological groups and international nonproprietary names, physico-chemical characteristics:

1. agents affecting the functions of the respiratory system (respiratory stimulants, antitussive agents, expectorants, agents used for bronchospasm, agents used for acute respiratory failure, medicinal surfactants).

2. drugs affecting the cardiovascular system (cardiotonic drugs, antiarrhythmic drugs, drugs used for coronary heart disease, drugs used for violation of cerebral circulation, hypotensive drugs, hypertensive drugs, venotropic (phlebotropic) drugs, diuretics).

3. means affecting the functions of the digestive organs (means affecting appetite, means used in violation of the function of the gastric glands, antacids, gastroprotectors, antihelicobacteria, emetic and antiemetic agents, choleric agents, hepatoprotectors, means of substitution therapy for insufficient pancreatic function, means that inhibit the motility of the gastrointestinal tract, means that enhance the motility of the gastrointestinal tract).

4. means affecting the tone and contractile activity of the myometrium,

5. agents affecting the blood system (agents stimulating erythropoiesis, agents used for the treatment of hypochromic anemia, agents stimulating leukopoiesis, agents inhibiting leukopoiesis, agents inhibiting platelet aggregation, agents affecting the thromboxane-prostacycline system, agents affecting glycoprotein receptors, agents affecting blood clotting, agents affecting fibrinolysis).

As well as their pharmacodynamics (main effects, localization and mechanism of action), side effects, indications for use, have an idea about the pharmacokinetics of drugs of these groups, the main dosage forms, routes of administration, the order of release of drugs from the pharmacy.

Principles of classification of hormone preparations, their synthetic substitutes and antagonists, vitamin preparations, preparations of water-soluble vitamins, anti-atherosclerotic drugs, drugs used in obesity, anti-inflammatory drugs, names of pharmacological groups and international nonproprietary names. As well as the physico-chemical characteristics of drugs, pharmacodynamics (main effects, localization and mechanism of action), side effects, indications for use, have an idea about features of the pharmacokinetics of drugs of these groups, the main dosage forms, routes of administration, the order of release of drugs from the pharmacy.

Agents that affect mineral metabolism in the hard tissues of the tooth

Principles of action of calcium, phosphorus, fluorine and other macro- and microelements.

Application as means for remineralization, prevention of caries and treatment of diseases of hard tissues of the tooth. Side effects Principles of classification of antiseptic and

disinfectants, antibacterial chemotherapeutic agents (beta-lactams, macrolides and azalides, tetracyclines, phenicols, aminoglycosides, polymyxins, lincosamides, glycopeptides, fusidines, sulfonamide preparations, quinolone derivatives, synthetic antimicrobials of various chemical structures), anti-syphilitic agents, anti-tuberculosis agents, antiviral agents, antiprotozoal agents, antifungal agents, synthetic antifungal agents, antitumor (antiblastoma) agents, the names of their pharmacological groups and international nonproprietary names. As well as the physico-chemical characteristics of drugs, pharmacodynamics (main effects, localization and mechanism of action), side effects, indications for use, have an idea about the pharmacokinetics of drugs of these groups, the main dosage forms, routes of administration, the order of release of drugs from the pharmacy.

**Be able to:**

Write prescriptions for various dosage forms.

Calculate the main pharmacokinetic parameters: volume of distribution (Vd), elimination rate constant (Kel), half- elimination period (t<sub>1/2</sub>), clearance (Cl), bioavailability (F).

Write prescriptions for medicines according to the appropriate indications

**Own:**

The rules of prescribing prescriptions for narcotic, potent drugs, the methodology of prescribing the main prescriptions. An algorithm for evaluating the main parameters of pharmacokinetics of drugs

The algorithm for choosing the drug, dosage form and dosage regimen depending on the clinical situation

**4. The total labor intensity of the discipline:**

The total labor intensity of the discipline is 5 credits 180 hours

**5. The main sections of the discipline:**

1. Introduction to pharmacology. The general recipe. General pharmacology.
2. Means affecting the peripheral nervous system
3. Drugs affecting the central nervous system
4. Means affecting the functions of executive bodies
5. Substances with a predominant effect on the processes of tissue metabolism, inflammation and immune processes.
6. Antimicrobial, antiviral, antifungal agents. Antitumor agents

Head of the Department of Pharmacology  
with clinical pharmacology,  
MD, Prof..

L.Z. Bolieva