

**Ministry of Health of the Republic of Belarus
educational institution
"Gomel State Medical University"**

Department of General and Clinical Pharmacology

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METHODOLOGICAL RECOMMENDATIONS

for conducting a practical lesson on the optional course
"Practical Pharmacology" in the discipline "Pharmacology"
with students 3-year faculty of foreign students,
studying at the specialty 1-79 01 01 "General Medicine"

TOPIC 1: "INTRODUCTION TO PHARMACOLOGY"

Time: 2 hours

Approved at the meeting of the department of general and clinical pharmacology
the protocol № 18 of 30.06.2022

LEARNING AND EDUCATIONAL GOALS, OBJECTIVES, MOTIVATION FOR LEARNING THE TOPIC

The most significant and common form of exposure to the human patient is pharmacotherapy. Knowledge of the basic provisions of the pharmacology of drugs will allow the doctor to navigate the ever-growing arsenal of new drugs, will contribute to their optimal use, which will ensure the effectiveness and safety of drug therapy.

Learning goal:

- the formation of specialized knowledge about general pharmacology - the basis for understanding and correctly assessing the pharmacokinetics, pharmacodynamics and toxicity of medicinal substances in order to conduct rational and safe pharmacotherapy. The study by future doctors of general issues and patterns of action and use of medicinal substances is necessary for a scientifically based assessment of drugs studied in the course of private pharmacology.

Educational purpose:

- to develop one's value-personal, spiritual potential, to form the qualities of a patriot and a citizen, ready for active participation in the economic, industrial, socio-cultural and public life of the country; to realize the social significance of their future professional activities, learn to observe educational and labor discipline, norms of medical ethics and deontology.

Tasks:

As a result of the training session, the student must

know:

- general patterns of pharmacokinetics and pharmacodynamics of drugs; general ideas about the routes of administration, absorption, distribution and excretion of drugs;
- main routes of drug administration, pharmacodynamics and pharmacokinetics, indications and contraindications for the use of drugs;
- principles of rational dosing of drugs, including the choice of dosage form, routes of administration and dosing regimen;

be able to:

- analyze the pharmacokinetics and features of the pharmacodynamics of drugs; assess the possibility of developing drug dependence when using them;
- analyze the effect of drugs on the basis of their pharmacological properties and the possibility of their use for therapeutic treatment
- rational dosage of the drug, including the choice of dosage form, route of administration and dosing regimen;

own:

- the skills of using the main pharmacokinetic parameters and information about the dependence of pharmacodynamics on the properties of drugs, the conditions for their use, the characteristics and state of the body for rational pharmacotherapy;
- skills in the use of drugs in the treatment, rehabilitation and prevention of various diseases and pathological conditions, taking into account the main pharmacodynamic parameters;

- the ability and willingness to rationally dose the medicinal product, including the choice of dosage form, routes of administration and dosing regimen.

Motivation for mastering the topic:

– The specifics of training doctors in the specialty 1-79 01 01 "Medicine" determines the need for students to purposefully study knowledge about pharmacology as a science, the content of general pharmacology and the basics of the pharmacokinetics of drugs in the body - the processes of absorption, distribution, biotransformation, excretion; principles of rational dosing of drugs, including the choice of dosage form, routes of administration and dosing regimen.

MATERIAL EQUIPMENT

Reference and information literature, schemes, tables, presentations, collection of medicines.

CONTROL QUESTIONS FROM RELATED DISCIPLINES

- from biochemistry and physiology: physical properties and structure of cell membranes, transport of substances through biological membranes in normal and pathological conditions;

- from general and bioorganic chemistry: basics of chemical kinetics and catalysis, buffer solutions and systems, pH calculation;

- from biochemistry: the kinetics of enzymatic reactions, the Michaelis-Menten kinetics equation, the concept of enzyme inhibitors, types of enzyme inhibitors;

– from the Latin language: the basic rules for harmonizing parts of speech and the design of prescription prescriptions when prescribing drugs.

CONTROL QUESTIONS ON THE TOPIC OF THE LESSON

1. Subject and tasks of pharmacology. The history of the development of pharmacology. Pathway of a medicinal product (PM) from the chemical laboratory to the patient.

2. Main issues of pharmacokinetics and pharmacodynamics of drugs. Dosing drugs.

3. Main aspects of chronopharmacology and pharmacokinetics. Individual characteristics of the body that affect the action of drugs.

4. Phenomena arising from repeated and combined administration of drugs. Side effects of drugs.

5. Pharmacovigilance, receptor monitoring, medical. The structure of the control and permissive system of the Republic of Belarus. The problem of generics. Formulary system.

6. Evidence-based medicine. Stages of drug research.

7. Rules for writing prescriptions. The sequence of filling in the forms and the structure of recipes. Doses of medicinal substances. Rules for prescribing liquid dosage forms. Rules for prescribing ointments, pastes, liniments, suppositories. Rules for prescribing tablets, powders, draggers, capsules. Rules for prescribing aerosols, films.

PROCEDURE OF THE LESSON

Theoretical part

1. Козловский В.И. Основы фармакологии = Essentials of Pharmacology: студентов учреждений высшего образования, обучающихся по специальностям 79-01 01 «Лечебное дело» / В. И. Козловский (и др.). Гродно: ГрГМУ 2019. — стр. 5-25.

Practical part

- 1) Review the theoretical material demonstrated by the teacher;
- 2) Master the methodology for solving problems and writing prescriptions on the topic of the lesson.

Control of the assimilation of the topic

It is carried out in the form of independent written work (solving practical problems and writing prescriptions for an individual assignment).

METHODOLOGICAL RECOMMENDATIONS FOR ORGANIZING AND PERFORMING IWS

The time allotted for independent work can be used by students for:

- preparation for practical exercises;
- preparation of thematic reports, abstracts, presentations;
- note-taking of educational literature.

The main methods of organizing independent work:

- fulfillment of test tasks and practical tasks of the EUMC for self-control and self-assessment.

The list of tasks of the SRS:

- solution of practical problems of EUMC;
- performance of test tasks EUMK.

SRS control is carried out in the form:

- evaluation of an oral answer to a question, message, report or problem solving in practical classes;
- individual conversation.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND IMPLEMENTATION OF IIWS

Recommended forms of organization of the IIWS:

- writing an essay on a given topic;
- preparation of a report and multimedia presentation on a given topic.

List of IIWS tasks:

Topics of abstracts / multimedia presentations:

1. New directions in the development of modern pharmacology.
2. Modern dosage forms.
3. Storage conditions of drugs in pharmacies and medical institutions. Pharmacovigilance of the safe use of drugs.
4. Chronopharmacology. Biopharmacy.
5. Drug addiction.
6. Influence of the connection of drugs with plasma proteins on the development of the pharmacological effect.

Forms of monitoring the implementation of the IIWS:

- checking and evaluating the abstract on a given topic;
- checking and evaluating a multimedia presentation on a given topic.

LIST OF USED SOURCES

1. Харкевич, Д. А. Фармакология : учебник для использования в учеб. процессе образоват. организаций, реализующих программы высш. образования по специальностям 33.05.01 "Фармация", 31.05.01 "Лечеб. дело", 31.05.02 "Педиатрия", 32.05.02 "Мед.-профилакт. дело", 31.05.03 "Стоматология" / Д. А. Харкевич. - 12 изд., испр. и доп. - Москва : ГЭОТАР-Медиа, 2017. - 754 с. : ил., табл., фот. - Рек. ФГАУ "ФИРО".
2. Козловский В.И. Основы фармакологии = Essentials of Pharmacology: студентов учреждений высшего образования, обучающихся по специальностям 79-01 01 «Лечебное дело» / В. И. Козловский (и др.). Гродно: ГрГМУ 2019. - Рек. УМО по высш. мед., фармацевт. образованию.
3. Конорев, М. Р. Курс лекций по фармакологии. В 2 т. Т. 2, ч. 1 : для студентов 3 и 4 курсов фармацевт. фак. учреждений высш. образования, обучающихся по специальности 1 - 79 01 08 "Фармация" / М. Р. Конорев, И. И. Крапивко, Д. А. Рождественский ; УО "ВГМУ", Каф. общей и клинической фармакологии с курсом ФПКипК. - Витебск: ВГМУ, 2019. - 294 с.: ил., табл. - Рек. УМО по высш. мед., фармацевт. образованию.
4. Конорев, М. Р. Курс лекций по фармакологии. В 2 т. Т. 2, ч. 2 : для студентов 3 и 4 курсов фармацевт. фак. учреждений высш. образования, обучающихся по специальности 1 - 79 01 08 "Фармация" / М. Р. Конорев, И. И. Крапивко, Д. А. Рождественский ; УО "ВГМУ", Каф. общей и клинической фармакологии с курсом ФПКипК. - Витебск: ВГМУ, 2019. - 165 с.: ил. - Рек. УМО по высш. мед., фармацевт. образованию.
5. Михайлова Е.И. Общая фармакология: студентов учреждений высшего образования, обучающихся по специальностям 79-01 01 «Лечебное дело», 79-01 04 «Медико-диагностическое дело» / Е. И. Михайлова (и др.). Гомель: ГомГМУ 2020. — 54 с.