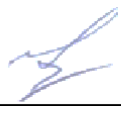


ONMedU, Department of Drug Technology IWS №5. «Influence of physiological and pharmaceutical factors on the pharmaceutical availability and absorption kinetics of drugs administered rectally and vaginally.»

**ODESSA NATIONAL MEDICAL UNIVERSITY
DEPARTMENT OF DRUGS TECHNOLOGY**

APPROVE
Head of Department



signature (Borisjuk I. Yu.)
«27» august 2021 y.


**METHODICAL DEVELOPMENT OF INDEPENDENT WORK OF
STUDENTS (IWS)**

Course 5 Faculty Pharmaceutical

Course Biopharmacy

Topic №5 **«Influence of physiological and pharmaceutical factors on the pharmaceutical availability and absorption kinetics of drugs administered rectally and vaginally.»**

Methodical recommendations on IWS
developed by:
assistant



signature (Akisheva A.S.)

Methodical recommendations of
IWS were discussed at the methodical
meeting of the department
«27» august 2021 y.
Protocol № 1

Odessa - 2021

Topic: "The influence of physiological and pharmaceutical factors on the pharmaceutical availability and absorption kinetics of drugs administered rectally and vaginally" - 4 hours.

Objective: To deepen knowledge in considering the influence of physiological and pharmaceutical factors on the pharmaceutical availability and absorption kinetics of drugs administered rectally and vaginally.

Basic concepts: Physiological factors, pharmaceutical factors.

Plan

I. Theoretical questions for the lesson:

1. Biopharmacy: textbook / edited by: Borisyuk IY, Fizor NS, Akisheva AS Odessa, ONMedU, 2020. - pp. 77-79.

Questions for self-control

1. Methods for determining the release of drugs from soft dosage forms
2. Methods for determining the release of drugs from suppositories.
3. The concept of simple chemical modification of drugs and its impact on the bioavailability and stability of drugs.
4. Ways of introduction of drugs into an organism and their influence on therapeutic activity.
5. The main biological factors affecting the absorption of drugs.
6. The influence of the patient's physiological state on the pharmacodynamics and pharmacokinetics of drugs.
7. Variable biochemical factors. Drug metabolism.
8. Influence of exogenous factors on pharmacotherapy.
9. Interaction of drugs with food.
10. Modern methods of analysis of drugs in biological fluids.

Approximate tasks for the study of theoretical material

1. Make a dictionary of basic concepts on the topic
2. Fill in the orientation card for self-preparation of the student using the literature on the topic :

№ z.p.	The main tasks	Instructions	Answers
1.	Features of rectal absorption and what it depends on.	Give an explanation	Rectal absorption is in the nature of penetration, which proceeds according to the laws of diffusion, and therefore absorption through the membrane depends on the concentration of the drug in the

			rectal fluid. The higher this concentration, the faster and more significant its absorption. Because the membrane is lipoid in nature, substances pass through it in non-ionized form. The release of the suspended drug substance from the base is faster the smaller the particle size.
	What pharmaceutical factors affect the process of absorption of drugs administered rectally	Give an explanation	<ul style="list-style-type: none"> • solubility of substances and their dispersion; • nature and properties of the carrier (melting point, solubility, rheological properties, etc.); • the presence of absorption activators in the drug system (dimethyl sulfoxide, hyaluronidase, etc.). Surfactants can both accelerate and slow down absorption, which depends on the formation of complex compounds with certain physicochemical properties; • the presence of thickeners, such as aerosil, which slows the diffusion of drugs from the drug system to the absorption surface; • type of dosage form.

II. Practical work (tasks) that will be performed in class:

Task1

Task № 3

Calculate the area under the pharmacokinetic curve, the elimination constant and the absorption constant of streptocide in the blood from ointments and suppositories.

III. Test tasks for self-control

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http://info.odmu.edu.ua/chair/drugs_technology / Tests Step-2 on the following topics:

-Industrial production of tablets (Tablets by method: direct compression, with preliminary granulation, trituration tablets. Shells. Granules. Dragees). Quality assessment

IV. Individual tasks for students on the topic of the lesson

-Rectal route of administration. Features of bioavailability.

-Vaginal route of administration. Features of bioavailability.

List of recommended reading

Main:

1. Біофармація : підруч. для студентів закл. вищ. освіти / О. І. Тихонов [та ін.] ; за ред. О. І. Тихонова. – 2-ге вид., перероб. і допов. – Харків : НФаУ: Золоті сторінки, 2019. – 224 с

2. Настанова СТ-Н МОЗУ 4242-7.1:2005 «Лікарські засоби. Настанова з клінічних досліджень. Дослідження біодоступності та біоеквівалентності» - Київ, 2018.

3. Настанова СТ-Н МОЗУ 4242-7.1:2005 «Лікарські засоби. Настанова з клінічних досліджень. Дослідження біодоступності та біоеквівалентності» - Київ, 2018.

4. Настанова СТ-Н МОЗУ 42-7.2:2018 Лікарські засоби дослідження біоеквівалентності. – Київ, 2018. – 77 с.