


**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 №3 **«Factors affecting the pharmaceutical and bioavailability of drugs from capsules. New solid dosage forms.»**

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

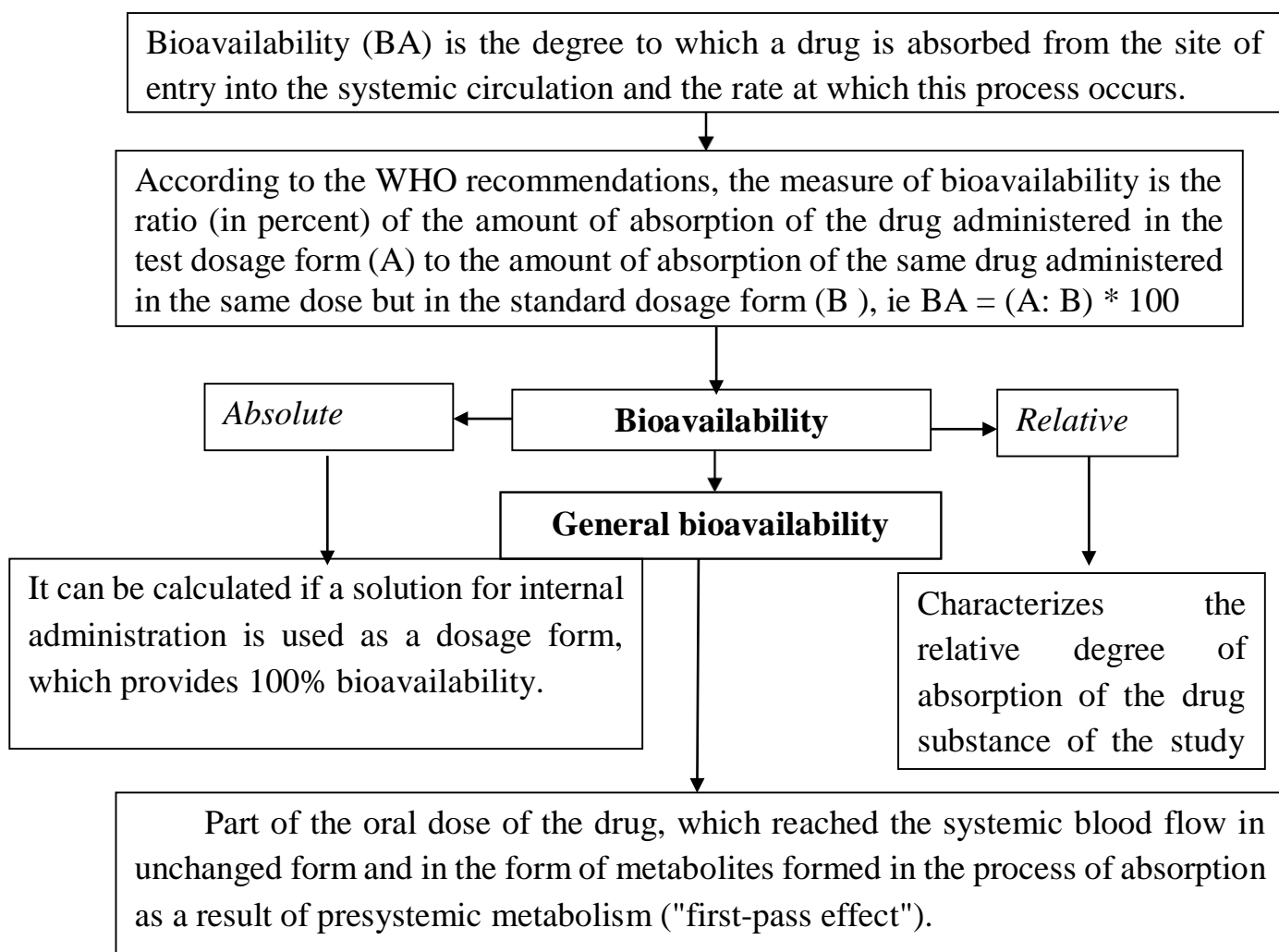
Topic: "Factors affecting the pharmaceutical and bioavailability of drugs from capsules. New solid dosage forms "- 6 hours.

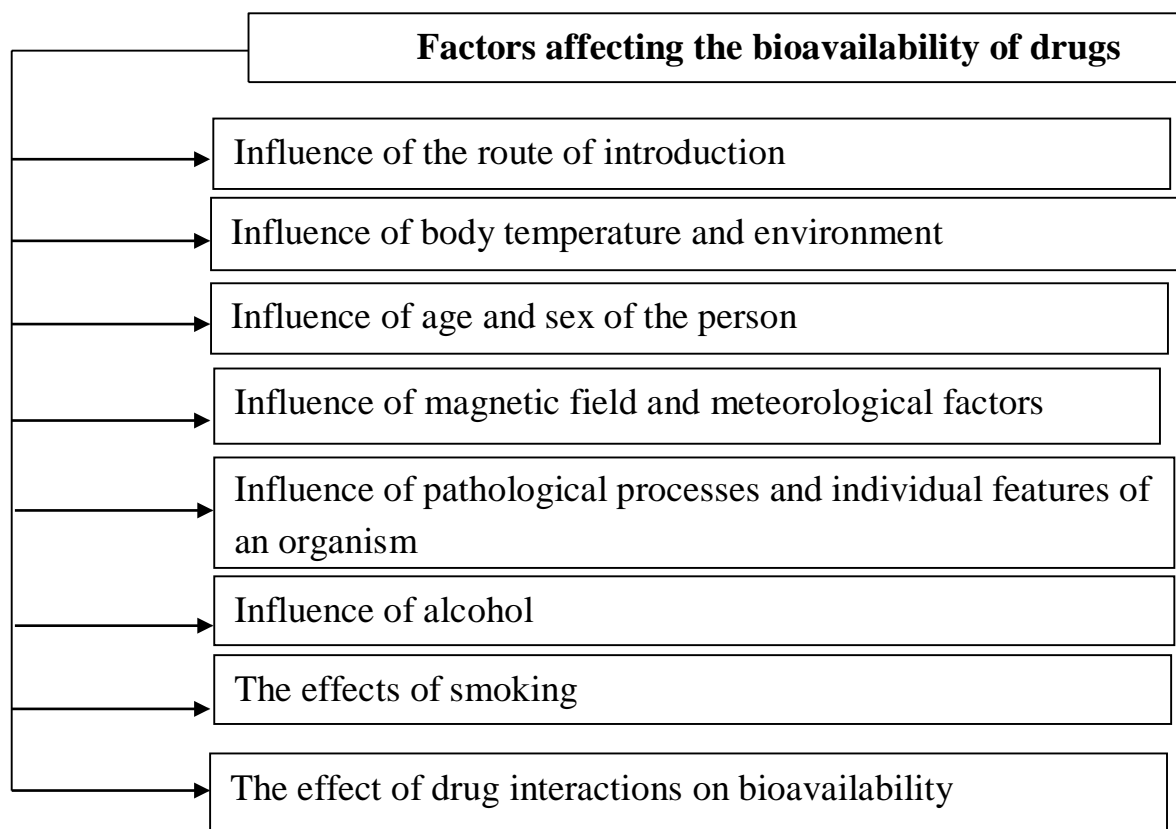
Objective: To deepen knowledge in considering the factors that affect the pharmaceutical and bioavailability of drugs from capsules. New solid dosage forms.

Basic concepts: Bioavailability, capsules.

Plan

I. Theoretical questions for the lesson:





Biopharmacy: textbook / edited by: Borisyuk IY, Fizzor NS, Akisheva AS Odessa, ONMedU, 2020. - p29-50, 73-77.

Questions for self-control

1. Methods of obtaining tablets. The influence of pharmaceutical factors on the therapeutic efficacy of tablets.
2. Gelatin capsules, preparation and methods of filling. Influence of pharmaceutical factors on their therapeutic activity.
3. Classification of solid therapeutic systems.
4. The concept of solubility of drugs. Pharmacopoeial test to determine solubility.
5. The influence of the dosage form on the rate of absorption of the drug, its concentration in biological fluids and the stability of drugs.
6. The concept of pharmacodynamics and pharmacokinetics of drugs.
7. Types of bioavailability of drugs. Determination of absolute and relative bioavailability of drugs.
8. Calculation of the area under the pharmacokinetic curve. Absorption and elimination constants.
9. Distinctive features in the reactivity of different species of animals to the introduction of biologically active substances.
10. Correlation of methods "in vitro" and "in vivo" in determining the release and bioavailability of drugs.

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.	The concept of a capsule	Open the question See the textbook	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.	New solid dosage forms of prolonged action	Open the question See answer	<p>Solid dosage forms of prolonged action are diverse, created on the basis of different technological principles, as well as with the use of a wide range of new excipients.</p> <p>Solid dosage forms of prolonged action include the following: multilayer tablets and pills, tablets with insoluble skeleton; tablets with resins; "Drilled" tablets and pills; tablets based on the principle of hydrodynamic balance and "osmotic</p>
			<p>pump "; long-acting coated tablets; tablets, granules and pills, the action of which is determined by the matrix or filler; implanted tablets with controlled release of the drug and others.</p>

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

Task № 3

To establish the influence of the nature of the ointment base on the rate of absorption of medicinal substances from ointments into the blood of animals by the "in vivo" method.

III. Test tasks for self-control

[http://info.odmu.edu.ua/chair/drugs technology / Tests Step-2](http://info.odmu.edu.ua/chair/drugs%20technology/Tests%20Step-2) on the following topics:

- Technology of preparation of suspensions, emulsions, infusions and decoctions. Quality assessment (ATL).
- Industrial production of capsules. Quality assessment (PTLZ).

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

Methods of studying the bioavailability of drugs.

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.