



**Катедра по Фармакология,
токсикология и фармакотерапия**

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SYLLABUS
IN PHARMACOKINETICS
FOR FORTH YEAR PHARMACY STUDENTS

I. General part

1. Basic concepts in pharmacokinetics. Pharmacokinetic models. Pharmacokinetic parameters.
2. Factors influencing the processes of absorption and distribution. Binding to plasma proteins. Passage of drugs through barrier systems.
3. Pharmaceutical availability. Bioavailability - determination methods. Bioequivalence. Chemical, biological and therapeutic equivalents.
4. Drug metabolism. Drug interactions with enzyme inducers and inhibitors. Genetic polymorphism.
5. Excretion of drugs. Factors affecting elimination.
6. Optimization of dosage regimens. Therapeutic drug monitoring.
7. Factors affecting the pharmacokinetics of the drugs: pathological condition, harmful habits, etc. Adjustments of the dosage regimen in patients with renal and hepatic insufficiency.
8. Types of dosing regimens - basis for selection, calculation of dose and dose interval.
9. Factors affecting the pharmacokinetic behavior of drugs: childhood, old age, pregnancy and lactation.
10. Kinetics of drugs after a single administration: intravenous bolus and extravascular administration. Basic pharmacokinetic parameters and their determination from plasma concentration/time data.

11. Administration of the drugs at a constant rate. Venous infusion. Steady-state concentration and time to reach it. Venous infusion with a loading dose. Repeated administration of drugs. Cumulation.

II. Special part

1. Pharmacokinetic features of drugs acting on CNS – antiepileptic drugs.
2. Pharmacokinetic features of drugs acting on CNS – hypnotic drugs.
3. Pharmacokinetic features of drugs acting on CNS – neuroleptics.
4. Pharmacokinetic features of drugs acting on CNS – antidepressants.
5. Pharmacokinetic features of beta blockers.
6. Pharmacokinetic features of cardiac glycosides.
7. Pharmacokinetic features of calcium channel blockers.
8. Pharmacokinetic features of antiarrhythmic drugs.
9. Pharmacokinetic features of antianginal drugs.
10. Pharmacokinetic features of ACE inhibitors and angiotensin receptor blockers (sartans).
11. Pharmacokinetic features of non-steroidal antiinflammatory drugs and analgesics.
12. Pharmacokinetic features of drugs affecting the respiratory system.
13. Pharmacokinetic features of antibiotics and chemotherapeutics.
14. Pharmacokinetic features of insulin and oral hypoglycemic drugs.
15. Pharmacokinetic features of coagulants, anticoagulants and antiagregants.
16. Pharmacokinetic features of diuretics.
17. Pharmacokinetic features of antidyslipidemic drugs.
18. Pharmacokinetic features of drugs used in the treatment of gastro-intestinal diseases.

Prepared by:
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Head of Department:.....
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