F A C U L T Y O F P H A R M A C Y
MEDICAL UNIVERSITY OF SOFIA
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DEPARTMENT "PHARMACOLOGY, PHARMACOTHERAPY AND TOXICOLOGY"

SYLLABUS

in

Pharmacology

INCLUDED IN THE CURRICULUM FOR „**PHARMACY**"
EDUCATIONAL DEGREE: „**MASTER OF SCIENCE**"
CREDITS (ECTS): 15

ANOTATION

Pharmacology is a key element of modern pharmaceutical science, integrating knowledge from basic preclinical biomedical sciences as well as from other special disciplines and enabling successful introduction to the rational approaches to therapy in socially significant diseases and syndromes, which is the subject of pharmacotherapy training. The course in pharmacology aims to acquaint future master-pharmacists with the basics of pharmacokinetics, molecular aspects of drug action, the influence of genetic polymorphism, age, pathological conditions, circadian rhythms and other factors on pharmacological effects and with the peculiarities of the main classes of drugs. The updated program has been developed to adequately cover the thematic units of general pharmacology, but also to reflect modern trends in the development, bioevaluation and introduction of new drugs. In the last two decades, a number of new classes of drugs have been introduced into therapeutic practice, including the direct oral anticoagulants, the new generations of beta-lactams (new carbapenems, new beta-lactamase inhibitors, fifth-generation cephalosporins) and other antibiotics, a huge number of antiretroviral drugs, several combined eradication protocols for the treatment of hepatitis C, a huge number of immunomodulators for the treatment of autoimmune diseases or for use in post-transplant patients and various classes of targeted antineoplastic drugs. It is also important to note the massive introduction of huge innovative therapeutic modalities that already have a wide clinical application, which necessitates the inclusion of propaedeutic thematic units dedicated to the pharmacological features of monoclonal antibodies, fusion proteins, aptamers, siRNA, miRNA, antisense-oligonucleotides, agents for gene therapy, etc.

System for control and evaluation of students: ongoing control - 4 colloquia, 2 per semester, and final exam after two semesters of training - written and oral.

Training in English language

SYLLABUS

1. Introduction to pharmacology. Bioevaluation methods. Stages and phases in the development
of new drugs.
2. Pharmacokinetics. Factors influencing the pharmacological effect.
3. Pharmacodynamics. Factors influencing the pharmacological effect.
4. Adverse drug reactions and drug interactions.
5. Chemical mediators in the CNS - opportunities for pharmacological modulation.
6. Anesthetics - general and local; peripheral muscle relaxants; premedication agents.
7. Anxiolytics, sedatives and hypnotics. Antiepileptic drugs.
8. Drugs for the treatment of neurodegenerative diseases.
9. Antidepressants. Antipsychotics and antimanic drugs.
10. Chemical mediators in VNS and possibilities for pharmacological modulation.
11. Opioid analgesics and opioid antagonists.
12. NSAIDs and non-narcotic analgesics. Medicines to treat arthritis and gout.
13. Pharmacological features of the new therapeutic modalities in medicine - monoclonal antibodies, fusion proteins, aptamers, gene therapy agents and RNA interference.
14. Drugs for the treatment of asthma and COPD. Antiallergic drugs.
15. Drugs affecting the hematopoietic system.
16. Antiarrhythmic and antianginal drugs
17. Antihypertensive drugs and diuretics.
18. Antiulcer drugs, antacids and antireflux agents. Antiemetics.
19. Introduction to antimicrobial chemotherapy. Antibiotics that inhibit cell wall synthesis.
20. Antibiotics suppressing protein synthesis: aminoglycosides, tetracyclines, macrolides, lincosamides, streptogramins, etc.
21. Sulfonamides, trimethoprim, fluoroquinolones and uroantiseptics. Antimycobacterial drugs.
22. Antifungal, antiprotozoal and anthelmintic drugs.
23. Introduction to endocrine pharmacology. Hormones of the hypothalamus and pituitary gland. Thyroid hormones and thyrostatics.
24. Glucocorticoids, mineralocorticoids and antagonists.
25. Antidiabetic drugs.
26. Sex hormones and antihormones. Oral contraceptives.
27. Antitumor drugs: Classic cytoreductive drugs.
28. Antitumor drugs: targeted therapy - monoclonal antibodies, tyrosine kinase inhibitors, etc.
29. Antiviral drugs.
30. Immunostimulators and immunosuppressants.

Date: 05/03/2024 Prepared the program:

(Prof. G. Momekov, Ph.D.)

Head of the Department of Pharmacology, Pharmacotherapy and Toxicology:

(Prof. G. Momekov, Ph.D.)