

# **BASIC PHARMACOLOGY SYLLABUS**

## **Medicine 4<sup>th</sup> year**

### **I. General pharmacology:**

1. Routes of drug administration.
2. Absorption and transmembrane transport of drugs.
3. Drug biotransformation (metabolism) – organs, types and drug interactions.
4. Drug distribution. Plasma protein binding. Barrier systems. Examples.
5. Drug excretion - organs and drug examples.
6. Pharmacodynamics. Non-receptor and receptor mechanisms of action.
7. Levels and mechanism of drug interactions.
8. Factors of the drug affecting drug action – chemical structure, physical and chemical properties, physical state, dose, dosage form.
9. Dose - definition. Types of doses. Therapeutic window and therapeutic index.
10. Factors of the patient that affect drug action – drugs in pregnancy, breast-feeding, children, elderly, liver and kidney diseases. Genetic abnormalities and drug action.
11. Multiple drug administration phenomena: drug tolerance, tachyphylaxis; substances causing dependence and abuse; accumulation; drug allergy.
12. Antiseptics and disinfectants. Definition. Mechanism of action.
13. Antiseptics and disinfectants. Dyes and detergents.
14. Antiseptics and disinfectants. Salts of heavy metals. Phenol and phenolic derivatives.
15. Oxidants. Formaldehyde and alcohols. Essential oils.
16. Male sex hormones and their antagonists. Anabolic agents.
17. Female sex hormones and their antagonists. Contraceptive preparations.
18. Pharmacological effects of fat - soluble vitamins (Vitamins A, D, E and K).
19. Pharmacological effects of water – soluble vitamins (Vitamins of group B and C).
20. Drugs affecting the functions of the uterine muscle: uterokinetic, uterotonic and tocolytic agents.
21. Thyroid and antithyroid drugs.

### **II. Special systems pharmacology:**

1. Hypnotics. Sedatives.

2. Antiepileptic drugs.
3. Antiparkinsonian drugs.
4. Opioid analgesics.
5. Analgesics-antipyretics.
6. Non-steroidal anti-inflammatory drugs (NSAIDs).
7. Neuroleptics.
8. Anxiolytic agents. Central muscle relaxants.
9. Psychostimulants. Nootropic drugs.
10. Antidepressants.
11. Cholinergic drugs. Neuromuscular blocking drugs (Skeletal muscle relaxants).
12. Adrenergic drugs.
13. Drugs, affecting histamine and serotonin mediation, prostaglandins and leukotrienes.
14. Local anaesthetics.
15. Cardiac glycosides.
16. Peripheral vasodilators.
17. Angioprotectors and venotonic agents. Antidyslipidemic drugs.
18. Antiarrhythmic drugs.
19. Antianginal drugs.
20. Antihypertensive drugs.
21. Agents used in anemias; hematopoietic growth factors.
22. Drugs affecting coagulation.
23. Antitussive agents. Drugs affecting the bronchial secretion. Mucolytics.
24. Drugs used in bronchial asthma.
25. Drugs affecting appetite – stimulants and suppressors. Antiemetics.
26. Drugs used to treat peptic ulcer disease.
27. Hepatoprotective drugs. Pancreatic enzyme supplements. Choleric and cholekinetic agents.
28. Laxatives and antidiarrheal agents. Carminative agents.
29. Insulin and oral antidiabetics.
30. Adrenocorticosteroids.
31. Anticancer drugs.
32. Principles of treatment with antimicrobial drugs. Sulfonamides. Antifungal agents.
33. Quinolones. Antiviral agents.
34. Tetracyclines. Macrolides.
35. Chloramphenicol. Lincosamides. Antimycobacterial agents.

36.  $\beta$ - lactam antibiotics – penicillins, cephalosporins, carbapenems and monobactams.
37. Glycopeptides. Aminoglycoside antibiotics.
38. Diuretics.

## **Bibliography**

1. Pharmacology handbook for medical and dental students. Eds. Assoc. Prof. Kostadinov and Assoc. Prof. Delev, Plovdiv, 2018.
2. Basic and Clinical Pharmacology 12<sup>th</sup> edition (LANGE Basic Science) by Katzung, Masters and Trevor, 2011.
3. Pharmacology (Lippincott's Illustrated Reviews Series) by Harvey, Clark, Finkel and Rey, BCPP, 2011.
4. Goodman and Gilman's The Pharmacological Basis of Therapeutics, 12<sup>th</sup> edition by Brunton, Chabner and Knollman, 2010.
5. Color Atlas of Pharmacology by Albrecht Ziegler, Mohr, Bieger and Lullmann, 2000.