

LJ UNIVERSITY

LJ INSTITUTE OF PHARMACY

SEMESTER: V

Subject Name: PHARMACOLOGY III

Subject Code: BP505TP

Scope: This subject is intended to impart the fundamental knowledge on various aspects of pathophysiology (Definition of disease, epidemiology, pathophysiology, diagnosis, treatment, management) and pharmacology (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on different systems of body

Objectives: Upon completion of the course the student shall be able to

1. Understand the pharmacological actions of different categories of drugs
2. Explain the mechanism of drug action at organ system/sub cellular/ macromolecular levels
3. Apply the basic pharmacological knowledge in the prevention and treatment of various diseases.
4. Observe the effect of drugs on animals by simulated experiments
5. Appreciate correlation of pharmacology with other bio medical sciences

Teaching scheme and examination scheme:

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	Theory		Practical	
				External	Internal	External	Internal
3	1	4	8	75	25	35	15

Module	Course Contents	Hours
2	2.1 Pathophysiology & Pharmacology of drugs acting on endocrine system: Basic concepts in endocrine pharmacology, Anterior Pituitary hormones- analogues and their inhibitors, Thyroid diseases & Thyroid hormones- analogues and their inhibitors, Hormones regulating plasma calcium level- Parathormone, Calcitonin and Vitamin-D, Diabetes & Insulin, Oral Hypoglycemic agents and glucagon, ACTH and corticosteroids. 2.2 Pathophysiology & Pharmacology of drugs acting on endocrine system: Disorders of sex hormones, Androgens and Anabolic steroids, Estrogens, progesterone and oral contraceptives, Drugs acting on the uterus	20
3	3.1 Autocoids and related drugs: Introduction to autocoids and classification, Histamine, 5-HT and their antagonists, Prostaglandins, Thromboxanes and Leukotrienes, Angiotensin, Bradykinin and Substance P, Non-steroidal anti-inflammatory agents 3.2 Pathophysiology & Pharmacology of Skeletal System: Gout and Anti-gout drugs Rheumatoid arthritis and Antirheumatic drugs, Osteoporosis and treatment of Osteoporosis, Myasthenia Gravis	15
3	3.1 Pathophysiology of Respiratory diseases: Asthma, COPD 3.2 Pharmacology of drugs acting on Respiratory system: Anti -asthmatic drugs, Drugs used in the management of COPD, Expectorants and antitussives, Nasal decongestants, Respiratory stimulants	10
Total Hours		45

Practical

1. Introduction to in-vitro pharmacology and physiological salt solutions.
2. DRC of acetylcholine using chicken ileum.
3. Introduction to bioassay.
4. Bioassay of acetylcholine using Chicken ileum/ by Graphical Method.
5. Bioassay of acetylcholine using Chicken ileum/ by Three point bioassay.
6. Bioassay of acetylcholine using Chicken ileum/ by four point bioassay.
7. To identify the unknown drug (Agonist) by using chicken ileum.
8. To identify the unknown drug (Antagonist) by using chicken ileum.
9. Determination of PD₂ value of Ach using Chicken Ileum.
10. Determination of PA₂ value of Atropine using Chicken Ileum.
11. Antiallergic activity by mast cell stabilization assay.
12. Anti-inflammatory activity of drugs using carrageenan induced paw-edema model.
13. Analgesic activity of drug using central and peripheral methods
14. Case Study related to Endocrine System (Minimum 2).
15. Case Study related to Skeletal System (Minimum 2).
16. Case Study of Respiratory System (Minimum 2).

Experiments are demonstrated by simulated experiments/videos

Recommended Books (Latest Editions)

1. Rang H. P., Dale M. M., Ritter J. M., Flower R. J., Rang and Dale's Pharmacology, Churchill Livingstone Elsevier
2. Katzung B. G., Masters S. B., Trevor A. J., Basic and clinical pharmacology, Tata Mc Graw-Hill
3. Goodman and Gilman's, The Pharmacological Basis of Therapeutics
4. Marry Anne K. K., Lloyd Yee Y., Brian K. A., Robbin L.C., Joseph G. B., Wayne A. K., Bradley R.W., Applied Therapeutics, The Clinical use of Drugs. The Point Lippincott Williams & Wilkins
5. Mycek M.J, Gelnet S.B and Perper M.M. Lippincott's Illustrated Reviews- Pharmacology
6. K.D.Tripathi. Essentials of Medical Pharmacology, , JAYPEE Brothers Medical Publishers (P) Ltd, New Delhi.
7. Sharma H. L., Sharma K. K., Principles of Pharmacology, Paras medical publisher
8. Modern Pharmacology with clinical Applications, by Charles R.Craig & Robert, Ghosh MN. Fundamentals of Experimental Pharmacology. Hilton & Company, Kolkata,
9. Kulkarni SK. Handbook of experimental pharmacology. VallabhPrakashan,
10. N.Udupa and P.D. Gupta, Concepts in Chronopharmacology