

SYLLABUS

DEPARTMENT OF PHARMACOLOGY

UNDERGRADUATES SYLLABUS

1. GENERAL PRINCIPLES

- a. Pharmacokinetics
- b. Pharmacodynamics
- c. Principles of therapeutics
- d. Concepts of essential drugs and rational drug therapy
- e. Special aspects of drugs in pregnancy, perinatal pediatric and geriatric pharmacology
- f. Ethics and modalities of new drug development
- g. Adverse reactions to drugs and common drug interactions

2. DRUGS ACTING AT SYNAPTIC AND NEURO EFFECTOR JUNCTION

- a. Cholinergic and anticholinergic drugs
- b. Adrenergic and adrenergic blockers
- c. Drugs acting at neuromuscular junction and autonomic ganglia

3. OCULAR PHARMACOLOGY

4. DRUGS ACTING ON CENTRAL NERVOUS SYSTEM

- a. General anesthetics
- b. Local anesthetics
- c. Hypno sedatives
- d. Drugs and treatment of psychiatric disorders – psychosis, depression and mania
- e. Drugs in the therapy of epilepsies

- f. Drugs in the therapy of migraine
- g. Drugs in central nervous system degenerative disorders
- h. Opioid analgesics and antagonists
- i. Drug addiction and treatment

5. AUTOCOIDS

- a. Histamine, bradykinin, 5HT and their antagonists
- b. Lipid derived autacoids
- c. Analgesic – antipyretic and anti-inflammatory agents

6. DIURETICS AND OTHER AGENTS AFFECTING RENAL CONSERVATION OF WATER

7. DRUGS ACTING ON CARDIOVASCULAR SYSTEM INCLUDING BLOOD

- a. Drugs used for treatment of myocardial ischemia, heart failure
- b. Anti-arrhythmic drugs
- c. Anti-hypertensive
- d. Lipid lowering drugs
- e. Drug therapy of shock
- f. Hematopoietic agents (growth factors, minerals and vitamins)
- g. Anticoagulants, Thrombolytic and antiplatelet drugs

8. DRUGS ACTION ON RESPIRATORY SYSTEM

- a. Pharmacotherapy of cough
- b. Pharmacotherapy of bronchial asthma

9. THERAPEUTIC GASES

10. DRUGS AFFECTING GASTROINTESTINAL FUNCTION

11. CHEMOTHERAPY

- a. Chemotherapy of microbial disease
- b. Chemotherapy of parasitic infections
- c. Chemotherapy of neoplastic diseases
- d. Antiseptics and disinfectants

12.DERMATOLOGICAL PHARMACOLOGY

13.DRUGS USED FOR IMMUNOMODULATION

14.ENDOCRINE PHARMACOLOGY

- a. Hypothalamic and pituitary hormones
- b. Thyroid and ant thyroid drugs
- c. Adreno corticosteroids and their antagonists
- d. Gonadal hormones and inhibitors
- e. Pancreatic hormones, and antidiabetic drugs
- f. Agents that affect bone mineral homeostasis

15.ENZYMES IN THERAPY

16.VITAMINS

17.TOXICOLOGY

- a. Principles of toxicology and treatment of poisoning
- b. Heavy metals and antagonists
- c. Nonmetallic environmental toxicants

18.MISCELLANEOUS

- a. Drugs used in parkinsonism
- b. Drugs used in gout and rheumatoid arthritis

PRACTICAL PHARMACOLOGY

1. Prescription writing for common ailments & audit
2. Patient oriented problems relating to adverse drug reactions and common drug interactions
3. Experiments designed for study of effect of drugs
4. Critical evaluation of drug formulations
5. Dosage calculations
6. Pharmaco economic problems
7. Interpretation of clinical pharmacology data

POSTGRADUATES SYLLABUS

1. APPLIED PHARMACOLOGY:

The post graduate student is expected to have a fair knowledge of the applied pharmacological aspects. The standard expected shall be above that of the under graduate students but not as detailed as that expected of the post graduate student of the specialties.

Knowledge of the following:

Disease caused by the parasites

Disorders due to chemical, physical, climatic and environmental factors like acute poisoning, industrial toxicology and ionizing radiations.

Genetic constitutional factors in diseases

Diseases of endocrine glands , liver, gall bladder, pancreas and GIT

Diseases affecting CNS, CVS, RS, GUT, BLOOD and blood forming organs, musculoskeletal system.

Basic principles of pediatric medicine and psychiatric medicine.

A sound understanding of statistics as applicable to medicine.

Basic principles and practical skill in the use of the following instruments.

PH meter

Spectrometer

Polygraph, ECG, EEG, EMG

II. GENERAL PHARMACOLOGY:

History of Pharmacology

General Pharmacology

Evaluation of drugs and experimental methods (theoretical knowledge of the principles and techniques)

Experimental methods in the evaluation and or elucidation of the mechanism of action of drugs on CNS,ANS,CVS,GIT,GUS, Endocrines, Reproduction, allergy, smooth muscles, inflammation, dieresis, parasites, cancer.

Methods in Acute and chronic toxicity studies.

Methods in Phytochemistry

Quantitative pharmacology (e.g. Biological standardization, Bioassay, LD50, ED50, etc.,

Methodology in Clinical Pharmacology

Methods in Pharmacokinetics

III. SYSTEMIC PHARMACOLOGY INCLUDING RECENT ADVANCES:

Drugs action on CNS (including local anesthetics) ANS, CVS, GIT, GUT, Musculoskeletal system, blood and blood forming organs.

Drugs affecting active and passive immunity, immune suppressants

Pharmacology of autacoids, temperature regulation, and chemotherapeutic agents.

Pharmacology of miscellaneous drugs-Vitamins, hormones, locally acting agents. Heavy metals, and chelating agents.

High altitude Pharmacology.

Toxicology of drugs encountered during their use in therapy. Biological effects of industrial and environ mental toxic substances, insecticides, pesticides, rodenticides, weedicides and toxic gases.

Monitoring of adverse drug reactions

Sociological aspects of Pharmacology and Pharmacoepidemiology

IV. BIOASSAY:

The candidate should be able to carry out the bioassay of Acetyl choline, Histamine, %HT, and Catecholamine on various isolated tissues like Frog rectus, Guinea pig ileum, tracheal chain, vasdeference, rat uterus, rat fundus, rabbit duodenum.

V. PRACTICAL CHARTS

Qualitative charts explaining the action of drugs acting on autonomic nervous system.

VI. EXPERIMENTAL METHODS FOR EVALUATION OF DRUG ACTION:

Analgesics, Anticonvulsants, local anesthetics, psychopharmacological agents, neuromuscular blocking agents, antipyretics, anti-inflammatory agents, diuretics, antifertility drugs, Bronchodilators.