PHARMACOLOGY -I [PHL 313 (3 + 1)]

Course Description:

This course deals with the introduction of basic principles of pharmacology and the pharmacological actions, therapeutic uses, mechanisms of actions, adverse effects, contraindications and drug interactions of autonomic drugs, cardiovascular drugs and autacoids.

Course Contents:

A. Pharmacological Principles:

- Definition of Terms and Scope.

- Drug Receptors.
- Drug-receptor Interactions.
- Dose-response Curves.
- Antagonists.

- Factors Modifying Drug Action.
- Absorption, Distribution & Biotransformation and Elimination of Drugs.
- Drug Tolerance, Tachyphylaxis, Idiosyncrasy (Definitions).

- ED50, LD50 Therapeutic Index.
- General Mechanisms of Drug Action.

B. Drugs Acting on the Autonomic Nervous System:

1) Sympathetic Nervous System:

- Adrenergic transmission.

- Types & Subtypes of Receptors.
- Pharmacological Actions, Uses and Side Effects of Direct and Indirect Adrenergic Agonists and Adre-

nergic Antagonists.

2) Parasympathetic Nervous System:
- Cholinergic Transmission.

- Types and Subtypes of Receptors.
- Acetylcholine and other choline esters.

- Anticholinesterase & Antimuscarinic Drugs.

- Ganglionic Stimulants and Blockers.
- Skeletal muscle relaxants:
- Central and Peripheral agents

C. Autacoids:
- Histamine and Antihistamines.

- Serotonin and Antiserotonin.
- Prostaglandins & Leukotrienes.

- Angiotensins, Kinins & Endorphins.

D. Drugs Acting on the Cardiovascular System:

- Cardiotonic Drugs
- Antihypertensive Drugs
- Antidysrrhythmic Drugs

Diuretics:
- Osmotic Agents.
- Thiazides.
- Loop Diuretics.
- K-sparing Drugs.
- Carbonic Anhydrase Inhibitors.
- Aldosterone Antagonists

EXAMINATION:

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PRACTICALS

Experiment No. T i t l e

Lab. 1. Influence of smooth muscle stimulants on the isolated rabbit intestine.
Influence of smooth muscle relaxants on the isolated rabbit intestine.

Lab. 2. Influence of some blockers on effects induced by stimulants and
relaxants on the isolated rabbit intestine.

Lab.3. Influence of some stimulants and receptor blockers on the isolated
guinea pig ileum.

Lab. 4 Influence of bronchoconstrictors and bronchodilators on the isolated
guinea pig trachea.

Lab.5. Effect of acetylcholine and neuromuscular blockers on the frog rectus
abdominis muscle and effect of enzyme inducers on sleeping time of
hexobarbitone..

Lab. 6. Influence of various drugs on the arterial blood pressure and
respiration of the rabbit.

Lab. 7. Influence of various drugs on the isolated rabbit heart (Langendorff) preparation.

Lab. 8 Antiarrhythmic drugs (ECG is employed).

. Examinations.

Text books

1- Goodman & Gilman The pharmacological basis of therapeutics, 11th edition.
2- Pharmacology, by Humphry P.Rang, Mauren Dale, J. M. Ritter. 6th.

Samples of Questions:

Mark the right answer:

1- The biological synthesis of epinephrine is accomplished in:
   a. Postganglionic sympathetic
   b. Postganglionic parasympathetic
   c. Pre-ganglionic sympathetic
   d. Adrenal medulla

2- Phenyl ephrine is:
   a. Alpha agonist
   b. Beta agonist
   c. Alpha antagonist
   d. Beta antagonist
   e. Non of the above