

Basics of Pharmacology and its Classification

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Pharmacology is the study of drugs and their actions on the body. It is a branch of medicine concerned with the cure of disease or relief symptoms and induces drug treatment and the drug may be defined as any artificial, natural, or endogenous (from within the body) molecule which exerts a biochemical or physiological effect on the cell, tissue, organ, or organism. It is the science of drugs and their effect on living systems. Pharmacology is also responsible for painkillers, caffeine drinks and antibiotics. It is the science of what is happening to your body and to the drug itself. Every medication we take alters the chemistry within our body. The role of pharmacology is to understand why these changes are happening, allowing us to develop better drugs.

Sub-divisions of Pharmacology

Pharmacokinetics

The process by which a drug is absorbed, distributed, metabolized and excluded by the body.

Pharmacodynamics

Deals with the biological effect of the drug, The interactions of a drug and the receptors responsible for its action in the body.

Pharmacotherapeutics

Clinical application of pharmacodynamics and pharmacokinetics information to cure a disease.

Clinical pharmacology

Deals with the comparative clinical evaluations of new drug for developing its therapeutic efficacy and safety.

Toxicology

Deals with the toxicity and poisonous effects of various chemicals and also with the symptoms and treatment of poisoning.

Chemotherapy

Deals with the systemic infection or malignancy with drugs with selective toxicity for infecting organisms.

Pharmacogenetics

Deals with the study of inherited (single gene mediated) differences in the drug metabolism or drug response in humans.

Pharmacogenomics

Deals with the genetic make-up (Genome) of individual to choose drug therapy.

Pharmacoepidemiology

Deals with the study of use and effects of the drug in large population to establish risk: Benefit ratio of the drug.

Pharmacovigilance

Deals with the continuous monitoring for unwanted effects and other safety related aspects of marketed drugs.

The pharmacy and pharmacology both are different term.

A pharmacist is a licensed health professional who prepares, dispenses and advises on medicinal drugs.

A pharmacologist is a scientist that researches new drugs.

Importance of Pharmacology

- Discovering new medicines to help fight diseases.
- Improving the effectiveness of medicines.
- Reducing unwanted side effects of medicines.
- Understanding why individuals differ in the way they respond to certain drugs, and why some others cause addiction.

Pharmacology is beneficial for the human health. It makes better the lives of millions of people across the world. It maximizes their benefit and minimizes risk and harm. As new diseases emerge, and older medicines - like antibiotics - no longer work as well, the contribution of pharmacology to finding better and safer medicines becomes more vital.