

## GENERAL DEFINITIONS

**Pharmacology:** is the branch of medicine that study the interactions occurs between a living organism and drug.

**Pharmacodynamic:** effect of a drug on the body.

**Pharmacokinetics:** effect of the body on a drug.

**Drug:** any substance that exerts effect on the cell, tissue, organ within the body. used for diagnosis, prevention, and treatment of disease

**Dose:** is that amount of drug necessary to elicit the desired therapeutic response in the patient.

**Toxicology** is the study of poisoning of therapeutic agents administered in excess on living system.

**Addiction** is Physical Dependence like alcohol, tobacco.

**Habituation** is Psychological Dependence

**Drug abuse:** Excessive non- medical or social drug use.

**Tolerance:** the response to the dose of the drug decreases with repeated use, so person need for higher dose to reach same response.

### **Withdrawal Symptoms**

When one has become physically dependent on a drug and suddenly stop taken it, a psychological and/or physiological reaction occurs which is the opposite of the effect of the drug.

**Placebo:** a treatment with a certain drug that is supposed to have a certain effect, but it has no biological activity. Placebo used for two purpose:

1. As control in scientific evaluation of drugs.
2. To treat patient by psychological way.

**Agonist:** substances that bind with receptor and produce maximum response that mimic the response of endogenous ligand.

**Partial Agonist:** Substance that bind with receptor but not give maximum effect as full agonist even all receptor are occupied (there is no E<sub>max</sub>)

**Antagonist:**

a drug that does not provoke a biological response itself but blocks agonist-mediated responses.

antagonists have affinity but no efficacy. Antagonist activity may be reversible or irreversible .

**Efficacy:** (Emax)

Is ability of drug to produce maximum effect or response.

Depend on number of drug-receptor complex.

**Potency:** is the amount of drug in relation to its effect.

Affinity of drug for receptor is the main factor that affect potency.

**Half life (  $t_{1/2}$  ):** the time taken for the plasma concentration to fall by half, is aconstant.

**Side Effects:** is an effect of the drug other than the one for which it was administered within therapeutic dose. As an example, antihistamines are often given to treat allergies, can also cause sleepiness. Some side effects can cause serious problems, such as stomach bleeding from aspirin.

**Idiosyncrasy**

An inherited abnormal response to a drug due to gene deficiency.

**Therapeutic window:** an intermediate range in which effective action is obtained.

**Therapeutic index:** measure drug safety. Is ratio of dose that produce toxicity to the dose that produce a clinically desired or beneficial effect in population

$$TI = TD_{50} / ED_{50}$$

Large value mean wide range between effective and toxic dose.

**Iatrogenic diseases:** diseases results from treatment of other disease.

Like Cushing syndrome results from systemic steroid therapy.