

1.2 Biopharmaceutics and Pharmacokinetics

1. Introduction to Biopharmaceutics and Pharmacokinetics.
2. Gastrointestinal absorption, physicochemical and biological considerations and role of the dosage form in drug absorption.
3. Drug disposition: Distribution, Biotransformation and elimination and factors affecting them.
4. Bioavailability- Bioequivalency- Definition, dosage forms, drug concentration & clinical response, bioequivalency testing.
5. Pharmacokinetic models, Basic Pharmacokinetics, order of processes, non-compartmental model, one compartment open model, two compartment open model, non-conformities and miscellany, kinetic principles in evaluation of drug and formulated products.
6. Pharmacokinetic variability- Body weight, age, sex, genetic factors, diseases, drug interactions, blood flow rate, volume of distribution, gastric emptying time, protein bindings.
7. Individualization & optimization of drug dosing regimens.

Books Recommended:

1. Remington's Pharmaceutical Sciences.
2. Theory and Practice of Industrial Pharmacy- Lachmann.
3. Handbook of basic pharmacokinetics- J.G. Wagner.
4. Biopharmaceutics & Pharmacokinetics- Milo Gibaldi.
5. Introduction to pharmaceutical dosage forms- H.E. Ansel.