LECTURES' OUTLINE : Basic Pharmacokinetics (PHT 415) – (2+1)

Week	Lecture Number	Topic
1	1+2	Introduction
2	3+4	Drug kinetics after an intravenous bolus dose: - Clearance concept. - Apparent volume of distribution. - Elimination rate constant. - Half-life.
3	5+6	Drug kinetics after an intravenous bolus dose: - Determination of the plasma concentration, amount of the drug in the body and the apparent volume of distribution. - Estimation of the values of the elimination half-life, elimination rate constant, apparent volume of distribution and total clearance from plasma concentrations data. - Examples.
4	7+8	Drug kinetics after intravenous infusion: - Factors controlling the steady state concentration (plateau level). - Relationship between the half-life and the time required to approach the plateau level following a constant intravenous infusion with or without a bolus dose.
5	9+10	Drug kinetics after intravenous infusion: - Estimation of the values of the elimination half-life, apparent volume of distribution and total clearance from plasma concentrations data during and following intravenous infusion. - Use of the pharmacokinetic parameters to predict drug levels with time during and following a constant intravenous infusion with or without a bolus dose. - Use pharmacokinetic parameters to determine proper IV infusion rates and IV bolus doses to achieve given plasma concentrations.
6	11+12	Drug kinetics after oral administration: - Kinetics of drug absorption. - Rate and extent of drug absorption. - Estimation of the absorption rate constant and elimination rate constant. - Effects of altering rate and extent of absorption on the level of the drug in the body.
7	13+14	Drug kinetics after oral administration: - Estimation of the absolute bioavailability. - Estimation of the relative bioavailability. - Estimate the plasma concentrations with time

		given appropriate pharmacokinetic parameters.
8 9	15+17	Drug kinetics after multiple dosing: - Steady-state concentrations. - Maximum and minimum concentrations. - Rate of dosing. - Dosing interval. - Rate of accumulation. - Changing doses. - Selection of dose. - Assessment of pharmacokinetic parameters.
9-10	18-19	Drug distribution: - Apparent volume of distribution. - Plasma protein binding. - Fraction unbound. - Drug interactions.
10+11	20-22	Drug Excretion: - Excretion rate. - Amount of drug remaining to be excreted. - Mechanisms of renal excretion. - Drug interactions
11-13	23-26	Hepatic clearance: - Hepatic blood flow. - Protein binding. - Intrinsic clearance. - Drug interactions.
		2 Exams