Pharmacokinetics III summary

Topic	Details
Pharmacokinetics	Absorption, Distribution, Metabolism, Excretion
Biotransformation	Unionized drugs to ionized, water-soluble metabolites for easier excretion
Organs Involved	Mainly liver, but also lungs, kidneys, intestines
Drug Metabolism Outcomes	1. Active drug → Inactive metabolite 2. Active drug → Active metabolite (codeine → morphine) 3. Prodrug → Active drug (enalapril → enalaprilat) 4. Toxic metabolite formation
Phases of Metabolism	Phase I: Oxidation, reduction, hydrolysis (CYP450) Phase II: Conjugation (glucuronic acid, sulfate, etc.)
Factors Affecting Metabolism	Age, Sex, Liver disease, Genetic variations (slow/fast acetylators), Enzyme induction/inhibition
Enzyme Induction & Inhibition	Inducing drugs: Phenobarbitone ,phenytoin ,nicotine , rifampicin Inhibiting drugs: Erythromycin, clarithromycin ,cimetidine ,contraceptives

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