

Title of Presentation
Pharmacokinetics Models
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Abstract

In pharmacology, two important questions arise: how much medicine should be prescribed and how often should the medicine be taken. Furthermore to answer these questions F.H. Dost introduced the term pharmacokinetics in 1953, which studies in the course of time the concentrations of a drug in the body. When the medicine is not prescribed or the prescription is not followed correctly, it could result in being ineffective or harmful to the individual. In this investigation, two different Pharmacokinetics Models are used to study how different prescriptions affect the amount of concentration of the drug in the blood over time. Specifically, the first system of linear differential equations is used to describe the change in the concentration of the drug in the gastrointestinal tract (GI tract) and in the blood when medicine is taken orally. The second system describes the change in the concentration of the drug in the body tissue and the blood when the medication is taken intramuscularly. Both of these models demonstrate that higher doses taken more frequently increase the concentration in the blood and could result in toxic levels of concentration.