

Pharmacokinetics Class Preparation

Nursing 101

GI SYSTEM: The oral medication reaches the systemic circulation through the GI system. As a result, numerous factors can affect the absorption of the pill.

Questions:

1. A client is experiencing diarrhea. How could this affect absorption of an oral drug?
This could prevent absorption of the medication into the body.
2. How could the presence of food in the stomach affect the rate of absorption?
The presence of food could slow down the rate of absorption.

CARDIOVASCULAR SYSTEM: Once the pill is absorbed into the bloodstream, it is carried or delivered to the sites of pharmacologic action where the drug produces its effects.

Question:

3. How do you think the distribution of the oral medication affected if a client has less than normal cardiac output? The medication would take longer to be effective

LIVER: Most biotransformation takes place in the liver. Any decrease in the ability of the liver to metabolize medication could lead to an accumulation of the active drug in the bloodstream. This could put the client at risk for toxic effects and adverse reactions.

Questions:

4. How might nutritional status affect metabolism? Malnourished clients can be deficient in factors that are necessary to produce specific medication- metabolizing enzymes . This could impair the medication metabolism.
5. What factors influence the rate of medication metabolism? Age, first-pass effect, nutritional status, similar metabolic pathways

KIDNEYS: Drug excretion/elimination occurs mainly through the kidneys into the urine. If there is any impairment in kidney function, medications may not be excreted at the anticipated speed. Subsequent medication administration may lead to accumulation and potential toxicity.

Questions:

6. Why would very young and very old clients need to be closely monitored by nurse for signs and symptoms of drug toxicity? On someone very young there is a limited medication-metabolizing capacity. While older clients require smaller doses due to possible accumulation of medications.
7. How can the nurse assess kidney function? Monitor BUN and creatinine levels.