

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?
__Diarrhea may cause a decrease in absorption of an oral drug due to the dehydration _____
2. How could the presence of food in the stomach affect the rate of absorption?
__The presence of food in the stomach changes the pH of the stomach, therefore may decrease 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? **__If a client has less than normal cardiac output, the distribution of the oral medication would be delayed due to the reduced blood flow. _____**

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? **__If a client is malnourished, they can lack the factors that are necessary to produce specific medication-metabolizing enzymes which impair medication metabolism. _____**
5. What factors influence the rate of medication metabolism? _____
____The factors the influence the rate of medication metabolism include age, first-pass effect, nutritional status, similar metabolic pathways, and increase in some medication metabolizing enzymes. _____

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? **__Kidney function decreases as you get older so the risk for drug toxicity increases.** _____
7. How can the nurse assess kidney function? **Nurses can assess kidney function by measuring the intake & output of a client as well as monitoring BUN and creatinine levels from labs.** _____