

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?
Due to diarrhea, the oral drug can either cause more stomach pain or go through the patient quickly and not absorb correctly in the GI system.
2. How could the presence of food in the stomach affect the rate of absorption?
If on an empty stomach, the patient could get sick or take a bit of time for the rate of absorption will be slower.

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?
I think that it would take longer for the oral medication to affect a client if they have less than normal cardiac output. The pill is absorbed in bloodstream so a less than normal cardiac output will make the absorption slower.

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?
Nutritional status affects metabolism because food is what causes metabolism to work. If there is no intake of food, then the metabolism will be slower, therefore, the drug taken will take longer to get into the bloodstream.
5. What factors influence the rate of medication metabolism?
Any decrease in ability of the liver is what will influence the rate of medication metabolism. It is what will cause an accumulation of the drug in the bloodstream.

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?

Very young and very old clients will need to be more closely monitored due to their bodies not having the ability to be excreted at the anticipated speed. It may be quicker than anticipated or slower then that would lead to potential toxicity.

7. How can the nurse assess kidney function?

A nurse can assess kidney function through a patient's urine sample.