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?
   A client with diarrhea migth expericne decreased effects of the medicaiton given due to the lack of ability to absorb the med due to the constanct pass of waste.

2. How could the presence of food in the stomach affect the rate of absorption?
   This could slow down the rate of absorbption since your body will be working on digesting the food products at the same time although it is normally good to avoid taking medications on a completely empty stomach.

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? Those with a decreased cardiac output might experineced lessened affects of the medication.

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? Those who do not eat healthy or may have a history of alcohol use could have decrerassed kidney function as well as those who are lamnurished can be deficitne tin the factors neccesary to prodiuce specific medicaiton metabolizing enzymes which could lead to an accumulatino of the drug in the body system.
5. What factors influence the rate of medication metabolism?

Factors which influence the rate or metabolism include age, nutritional status, medications sharign metabolic pathways and the first pass effect.

6. 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:

7. Why would very young and very old clients need to be closely monitored by nurse for signs and symptoms of drug toxicity?A young client may have a immature liver which can cause increaed effects of medications or an older client may have a liver which is functioning at a decreased rate which will result in a build up of medication
8. How can the nurse assess kidney function? The nurse could perfrom a lab test if allowed by charge nurse or the nurse could monitor the urine from the client