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? **__The medication will be flushed out very quickly and not have time to be absorbed to the blood stream and won't be effective**. _____
2. How could the presence of food in the stomach affect the rate of absorption? **__The presence of food in the stomach can decrease the rate of absorption for many substances because it delays the transit to the intestine which in turn will create a barrier**.

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? **__Low cardiac output will delay medication distribution. _____**

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? **_Clients who are malnourished can be deficient in the factors that necessary to produce specific medication-metabolizing enzymes there for impairing medication metabolism**. __
5. What factors influence the rate of medication metabolism?__**age, increase in some medication metabolizing enzymes, first pass effect, similar metabolic pathways, nutritional status. ____**

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?___**People of these ages can't metabolize and eliminate drugs as efficiently. _____**
7. How can the nurse assess kidney function? **__obtain information about medical diagnoses and conditions affecting medication administration. Omit or delay doses as necessary. Ask questions. Interpret the medication prescription accurately, etc. _____**