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 could affect the absorption of an oral by speeding up the passage of and decreasing the amount of time for absorption.
2. How could the presence of food in the stomach affect the rate of absorption? The presence of food in the stomach could affect slow down the rate of absorption by delaying gastric emptying time depending on the type of food present. For example fatty foods may cause a med to be absorbed 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? Distribution of the oral medication will be affected from the circulation which can delay the release of the drug

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 that are malnourished can be deficit in needed factors to produce medication- metabolizing enzymes causing impairment to medication metabolism.

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5. What factors influence the rate of medication metabolism: Age (infants have limited medication-metabolizing capacity) Hepatic mediation metabolism tends to decline with age mean smaller doses. First pass effect caused by the liver inactivating some medication on their first pass through the liver which when requires nonenteral routes.

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 old or young clients may not have the normal hepatic medication metabolism which ay lead to drugs accumulating in the body
7. How can the nurse assess kidney function? By monitoring urine output and noting any abnormalities, review lab results