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? This may cause absorption of oral or enteral medication to know be absorbed, this is because the GI tract must be functional for these kinds of medications to be absorbed.
2. How could the presence of food in the stomach affect the rate of absorption? This can slow 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? The higher the blood flow means the quicker the absorption of medication. Therefore, one with lower cardiac output would absorb medicine at a slower rate.

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 that is unhealthy or dangerous to the patient can severely slow metabolism, making metabolization of medicine slower, and increasing risk for toxicity.
5. What factors influence the rate of medication metabolism?_Since metabolization takes place mostly in the kidneys and liver, if a patient is experiencing kindey or liver disease it will slow down the rate of metabolization.

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?_Those with impaired cardiac, liver, and kidney function are at very high risk for medication toxicity.
7. How can the nurse assess kidney function? Kidney dysfunction in older adults and higher concentration of medication levels.