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 can hinder the absorption of oral medications by accelerating their transit through the gastrointestinal tract, resulting in less time for the drugs to be absorbed.
2. How could the presence of food in the stomach affect the rate of absorption? It can facilitate the creation of enzymes made in the body, could mix or alter the drug being absorbed, and can act as a form of blockage in the GI tract.

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? If a client has less than normal cardiac output, than adequate distribution would be hindered by the lack of flow in the bloodstream.

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? Malnourishment might cause specific enzymes needed for breakdown to not be produced.
5. What factors influence the rate of medication metabolism The factors that influence the rate of medication metabolism is age, nutritional status, similar metabolic pathways, and the first pass effect.

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 These types of clients would need to be closely monitored because these age groups have limited medication metabolic capacity.

7. How can the nurse assess kidney function? BUN is used to monitor and assess kidney function