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:

- A client is experiencing diarrhea. How could this affect absorption of an oral drug?

  Due to bile going through the intestines too quickly a lack of nutrient absorption results. Meaning if given oral medication there's less of a chance the properties will be absorbed into their bloodstream.

- How could the presence of food in the stomach affect the rate of absorption?

  Certain medications can be delayed or completely unabsorbed with the prescence of food in the body.

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:

- How do you think the distribution of the oral medication is affected if a client has less than normal cardiac output?

With someone who has less cardiac output the force of blood going to extremeties is lowered. So when the medicattion is absorbed into the blood there's less force pushing the medication to the body.

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:

- How might nutritional status affect metabolism?

Poor nutritional status can slow down the metabolic rate, which can also slow down or inhibit the ability to absorb and breakdown medications.

- What factors influence the rate of medication metabolism

Factors can include diet, health history, drinking hx, and genetics.

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:

- Why would very young and very old clients need to be closely monitored by nurse for signs and symptoms of drug toxicity?

Very young clients should be closely monitored because they're system is still continuing to develop and can be affected much more than an adult. Very old clients should also

be monitored because their system can begin to breakdown and not be able to eliminate waste.

- How can the nurse assess kidney function?

  Things nurses can do is a urinalysis, blood tests, and assess output.