Pharmacology Illustrated Reviews 7th Edition Whalen Test Bank

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Test Bank

Chapter 1: Pharmacokinetics

MULTIPLE CHOICE

1. Which drugs will go through a pharmaceutic phase after it is administered?
a. Intramuscular cephalosporins
b. Intravenous vasopressors
c. Oral analgesics
d. Subcutaneous antiglycemics
ANS: C
When drugs are administered parenterally, there is no pharmaceutic phase, which occurs when a drug becomes a solution that can cross the biologic membrane.

DIF: COGNITIVE LEVEL: Understanding (Comprehension) REF: dm 3
TOP: NURSING PROCESS: Assessment
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

2. The nurse is preparing to administer an oral medication and wants to ensure a rapid drug action. Which form of the medication will the nurse administer?
a. Capsule
b. Enteric-coated pill
c. Liquid suspension
d. Tablet
ANS: C
Liquid drugs are already in solution, which is the form necessary for absorption in the GI tract. The other forms must disintegrate into small particles and then dissolve before being absorbed.

DIF: COGNITIVE LEVEL: Understanding (Comprehension) REF: dm 3
TOP: NURSING PROCESS: Nursing Intervention
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

3. The nurse is teaching a patient who will be discharged home with a prescription for an enteric-coated tablet. Which statement by the patient indicates understanding of the teaching?
a. I may crush the tablet and put it in applesauce to improve absorption.
b. I should consume acidic foods to enhance absorption of this medication.
c. I should expect a delay in onset of the drugs effects after taking the tablet.
d. I should take this medication with high-fat foods to improve its action.
ANS: C
Enteric-coated tablets resist disintegration in the acidic environment of the stomach and disintegrate when they reach the small intestine. There is usually some delay in onset of actions after taking these medications. Enteric-coated tablets should not be crushed or chewed, which would alter the time and location of absorption. Acidic foods will not enhance the absorption of the medication. The patient should not to eat high-fat food before ingesting an enteric-coated tablet, because high-fat foods decrease the absorption rate.

DIF: COGNITIVE LEVEL: Applying (Application) REF: dm 3
TOP: NURSING PROCESS: Nursing Intervention
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

4. A patient who is newly diagnosed with type 1 diabetes mellitus asks why insulin must be given by subcutaneous injection instead of by mouth. The nurse will explain that this is because
a. absorption is diminished by the first-pass effects in the liver.
b. absorption is faster when insulin is given subcutaneously.
c. digestive enzymes in the gastrointestinal tract prevent absorption.
d. the oral form is less predictable with more adverse effects.
ANS: C
Insulin, growth hormones, and other protein-based drugs are destroyed in the small intestine by digestive enzymes and must be given parenterally. Because insulin is destroyed by digestive enzymes, it would not make it to the liver for metabolism with a first-pass effect. Subcutaneous tissue has fewer blood vessels, so absorption is slower in such tissue. Insulin is given subcutaneously because it is desirable to have it absorb slowly.

DIF: COGNITIVE LEVEL: Understanding (Comprehension) REF: dm 3
TOP: NURSING PROCESS: Nursing Intervention: Patient Teaching
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

5. The nurse is preparing to administer an oral medication that is water-soluble. The nurse understands that this drug
a. must be taken on an empty stomach.
b. requires active transport for absorption.
c. should be taken with fatty foods.
d. will readily diffuse into the gastrointestinal tract.
ANS: B
Water-soluble drugs require a carrier enzyme or protein to pass through the GI membrane.

DIF: COGNITIVE LEVEL: Understanding (Comprehension) REF: dm 4
TOP: NURSING PROCESS: Nursing Intervention
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

6. A nurse is preparing to administer an oral drug that is best absorbed in an acidic environment. How will the nurse give the drug?
a. On an empty stomach
b. With a full glass of water
c. With food
d. With high-fat food
ANS: C
Food can stimulate the production of gastric acid so medications requiring an acidic environment should be given with a meal. High-fat foods are useful for drugs that are lipid soluble.

DIF: COGNITIVE LEVEL: Applying (Application) REF: dm 4
TOP: NURSING PROCESS: Nursing Intervention
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

7. The nurse is preparing an injectable drug and wants to administer it for rapid absorption. How will the nurse give this medication?
a. IM into the deltoid muscle
b. IM into the gluteal muscle
c. SubQ into abdominal tissue
d. SubQ into the upper arm
ANS: A

Drugs given IM are absorbed faster in muscles that have more blood vessels, such as the deltoid, rather than those with fewer blood vessels, such as the gluteals. Subcutaneous routes are used when absorption needs to be slower and more sustained.

DIF: COGNITIVE LEVEL: Applying (Application) REF: dm 4
TOP: NURSING PROCESS: Planning
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

8. The nurse is reviewing medication information with a nursing student prior to administering an oral drug and notes that the drug has extensive first-pass effects. Which statement by the student indicates a need for further teaching about this medication?
a. The first-pass effect means the drug may be absorbed into systemic circulation from the intestinal lumen.
b. The first-pass effect means the drug may be changed to an inactive form and excreted.
c. The first-pass effect means the drug may be changed to a metabolite, which may be more active than the original.
d. The first-pass effect means the drug may be unchanged as it passes through the liver.
ANS: A
Drugs that undergo first-pass metabolism are absorbed into the portal vein from the intestinal lumen and go through the liver where they are either unchanged or are metabolized to an inactive or a more active form.

DIF: COGNITIVE LEVEL: Understanding (Comprehension) REF: dm 4
TOP: NURSING PROCESS: Nursing Intervention
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

9. The nurse prepares to change a patients medication from an intravenous to an oral form and notes that the oral form is ordered in a higher dose. The nurse understands that this is due to differences in
a. bioavailability.
b. pinocytosis.
c. protein binding.
d. tachyphylaxis.
ANS: A

Oral drugs may have less bioavailability because a lower percentage of the drug reaches the systemic circulation. Pinocytosis refers to the process by which cells carry a solute across a membrane. Protein binding can occur with both routes. Tachyphylaxis describes a rapid decrease in response to drugs that occurs when tolerance develops quickly.

DIF: COGNITIVE LEVEL: Understanding (Comprehension) REF: dm 4
TOP: NURSING PROCESS: Assessment
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

10. The nurse is preparing to administer a drug and learns that it binds to protein at a rate of 90%. The patients serum albumin level is low. The nurse will observe the patient for
a. decreased drug absorption.
b. decreased drug interactions.
c. decreased drug toxicity.
d. increased drug effects.
ANS: D
Drugs that are highly protein-bound bind with albumin and other proteins, leaving less free drug in circulation. If a patient has a low albumin, the drug is not bound, and there is more free drug to cause drug effects. There would be increased absorption, increased interactions with other drugs, and increased toxicity.

DIF: COGNITIVE LEVEL: Applying (Application) REF: dm 5
TOP: NURSING PROCESS: Evaluation
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

11. The nurse is administering two drugs to a patient and learns that both drugs are highly protein-bound. The nurse may expect
a. decreased bioavailability of both drugs.
b. decreased drug effects.
c. decreased drug interactions.
d. increased risk of adverse effects.
ANS: D
Two drugs that are highly protein-bound will compete for protein-binding sites, leaving more

free drug in circulation and an increased risk of adverse effects as well as increased bioavailability, increased drug effects, and increased drug interactions.

DIF: COGNITIVE LEVEL: Applying (Application) REF: dm 5
TOP: NURSING PROCESS: Evaluation
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

12. A patient has been taking a drug that has a protein-binding effect of 75%. The provider adds a new medication that has a protein-binding effect of 90%. The nurse will expect
a. decreased drug effects of the first drug.
b. decreased therapeutic range of the first drug.
c. increased drug effects of the first drug.
d. increased therapeutic range of the first drug.
ANS: C
Adding another highly protein-bound drug will displace the first drug from protein-binding sites and release more free drug increasing the drugs effects. This does not alter the therapeutic range, which is the serum level between drug effectiveness and toxicity.

DIF: COGNITIVE LEVEL: Applying (Application) REF: dm 5
TOP: NURSING PROCESS: Nursing Intervention/Evaluation
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

13. The nurse gives a medication to a patient with a history of liver disease. The nurse will monitor this patient for
a. decreased drug effects.
b. increased drug effects.
c. decreased therapeutic range.
d. increased therapeutic range.
ANS: B
Liver diseases such as cirrhosis and hepatitis alter drug metabolism by inhibiting the drug-metabolizing enzymes in the liver. When the drug metabolism rate is decreased, excess drug accumulation can occur and lead to toxicity.