Edmunds' Pharmacology for the Primary Care Provider 5th edition Visovsky Test Bank

SKU: 9780323661171-TEST-BANK

Test Bank - Chapter 01

Q1: You are explaining the meaning of pharmacokinetics to an advanced practice student. Which of the following statements is correct?

A. Pharmacokinetics is the biochemical and physiologic action medications on the body.

B. Pharmacokinetics refers to the processes of absorption, distribution, metabolism, and elimination of medication. (Correct)

C. Pharmacokinetics is the peak and trough levels when medication reaches a steady state.

D. Pharmacokinetics refers to the transportation of a medication from the administration site to the bloodstream.

Rationale: The definition of pharmacokinetics refers to the processes of absorption, distribution, metabolism, and elimination of medication.

Q2: As the primary care advanced practice provider, you are prescribing a medication to an 80-year-old African-American woman. When selecting a medication and dose, the knowledge of how age, race, and gender may affect drug excretion is based on an understanding of:

A. bioavailability

B. pharmacodynamics

C. pharmacokinetics (Correct)

D. volume of distribution

Rationale: Pharmacokinetics is the study of the action of medications in the body. Factors such as age, race, and gender may change the way medications are metabolized and excreted.

Q3: You are preparing to administer an IV medication to a patient in your care. In considering that the pharmacokinetic properties of medication are affected by the route of administration, which of the following is true about the IV route?

A. For IV medications, absorption occurs over time followed by distribution and elimination.

B. For IV medications, only distribution and elimination occur. (Correct)

C. For IV medications, first-pass metabolism occurs followed by absorption.

D. For IV medications, variable bioavailability affects elimination.

Rationale: When medication is administered intravenously (IV), only distribution and elimination occur; absorption is immediate, and 100% of the medication is bioavailable. When medication is administered orally, absorption occurs over time and is followed by distribution and elimination.

Q4: An adult patient is taking a prescribed oral medication that causes gastric reflux. The patient asks you why you have cautioned against taking antacids with this medication. What is your best response?

A. Taking an antacid may block elimination of this medication.

B. Taking an antacid may alter the distribution of this medication.

C. Taking an antacid may lead to increased drug toxicity.

D. Taking an antacid may interfere with the absorption of medication. (Correct)

Rationale: Changing the pH of the gastric mucosa can alter the absorption of the drug. Drug distribution is not affected. It may indirectly cause drug toxicity if a significant amount of the drug is absorbed. It would decrease stomach upset.

Q5: When considering an inhaled corticosteroid to treat asthma in an adult, the patient asks you, as the primary care provider, why the corticosteroid is given by inhalation instead of oral administration. What is your best response?

A. Inhaled corticosteroids work slowly, and the action is more sustained.
B. Inhaled corticosteroids have a few systemic side effects. (Correct)
C. Inhaled corticosteroids can use the local blood vessels to deliver the medication dose.
D. Inhaled corticosteroid doses are more easily regulated.

Rationale: Inhaled corticosteroid goes directly to the site of action and does not have to pass through gastrointestinal tract absorption or liver to get to the lungs. They are generally well absorbed, but dosing is not necessarily easier to regulate because it is not always clear how much of an inhaled drug gets into the lungs.

Q6: You are prescribing two medications that are protein bound to an adult patient. What action should you take when prescribing these two medications?

A. Prescribe increased doses of both drugs.
B. Monitor drug levels, actions, and side effects. (Correct)
C. Teach the patient to decrease protein intake while taking these medications.
D. Tell the patient to increase fluid intake.

Rationale: Protein-bound medications bind to albumin, and thus, serum albumin levels may affect distribution, requiring the provider to monitor drug levels, actions, and side effects and change dosing accordingly. Increasing the dose of both medications is not recommended unless monitoring indicates. Increasing dietary protein or fluids does not affect this.

Q7: A patient who is taking both fluoxetine and warfarin has noticed unusual bleeding from the gums when the teeth are brushed. What effect of the CYP P450 enzyme system can explain this adverse effect?

A. The inhibitory effect of CYP P450 enzyme system (Correct)
B. The substrate effect of CYP P450 enzyme system
C. The inducer effect of CYP P450 enzyme system
D. The metabolism effect of CYP P450 enzyme system

Rationale: An inhibitor is any drug that causes the enzyme to metabolize more slowly or decreases the capacity of the enzyme pathway. A patient on fluoxetine (Prozac) plus warfarin can have the fluoxetine inhibiting effect on the P450 enzyme system from metabolizing warfarin and may produce adverse effects such as bleeding.

Q8: When prescribing oral medications, the primary care provider understands that these medications are subject to first-pass effect. What are the consequences of first-pass effect of oral medications?

A. Oral medications are excreted more slowly.

B. Oral medications become less bioavailable. (Correct)

C. Oral medications have increased absorption.

D. Oral medications enter the circulation more quickly.

Rationale: When a medication is taken orally, it is absorbed by the GI system, and it then enters the hepatic portal system to the liver before reaching the rest of the body. The liver can extensively metabolize some medications, so little of it is left over to enter the circulation.

Q9: As the primary care provider, you are preparing to prescribe a medication that you know has nonlinear kinetics. What action should you plan to take in the care of this patient?

A. Monitor the patient's creatinine clearance at baseline and periodically.

B. Administer a higher loading dose followed by the maintenance dose.

C. Frequently monitor the patient for desired and adverse effects. (Correct)

D. Administer the medication sublingually to avoid the first-pass effect.

Rationale: Drugs with nonlinear kinetics are not eliminated based on dose or concentration of the drug, and these drugs have a narrow therapeutic window and must be monitored closely for desired effects and toxicity.

Q10: A patient in your care states that he drinks grapefruit juice every morning with his medications. What is your best response?

A. "Drinking grapefruit juice with your medications can neutralize the effect of medication."

B. Drinking grapefruit juice with your medications provides vitamin C needed for drug metabolism."

C. "Drinking grapefruit juice with your medications can lead to increased potassium levels and should be avoided."

D. "Drinking grapefruit juice with your medications can lead to higher or reduced dose of medication in the bloodstream." (Correct)

Rationale: When grapefruit juice is consumed, enzyme CYP3A4 is inhibited, leading to higher blood plasma concentrations of the nonmetabolized portion of the medication, which in turn can lead either to overdosing when a medication is not metabolized to its inactive form or to a highly reduced dose when the active form of the medication must be metabolized to be activated.