Lilley: Pharmacology for Canadian Health Care Practice, 2nd Canadian Edition

Chapter 03: Considerations for Special Populations

Test Bank

MULTIPLE CHOICE

1. During the last trimester of pregnancy, drug transfer to the fetus is more likely to occur. Which of the following explanations provides a reason for this possibility?
a. Fetal size
b. Decreased surface area
c. Enhanced placental blood flow
d. Increased amount of bound drug in maternal circulation

ANS: C
Drug transfer to the fetus is more likely during the last trimester, as a result of enhanced placental blood flow, increased surface area, thinner membranes separating the maternal blood and fetus, and an increased amount of free drug in the mother's circulation.

Increased fetal surface area, not decreased, is a factor that affects drug transfer to the fetus. The placenta's surface area does not increase during this time. Drug transfer is increased due an increased amount of free drug, not protein-bound drug, in the mother's circulation. Fetal size is incorrect because the first trimester of pregnancy is the period of greatest danger of drug-induced developmental defects. During this period the fetus undergoes rapid cell proliferation. Gestational age is more important than fetal size.

DIF: Cognitive Level: Comprehension REF: p. 44

2. A 22-year-old patient is in the 26th week of pregnancy and has developed gestational diabetes and pneumonia. She is given medications that pose a possible fetal risk, but the potential benefits may warrant the use of the medications in her situation. Which of the following is the Food and Drug Administration (FDA) pregnancy safety category for this medication?
a. Category B
b. Category C
c. Category D
d. Category X

ANS: C
Category D fits the description given in the example.

Category B indicates no risk to animal fetus; information for humans is not available. Category C indicates adverse effects reported in animal fetus; information for humans is not available. Category X are drugs that should not be used in pregnant women due to reports of fetal abnormalities and positive evidence of fetal risk in humans.

DIF: Cognitive Level: Application REF: p. 45

3. Which type of dosage calculation is used *most commonly when calculating drug dosages for* young patients?
a. Fried's rule
b. Clark's rule
c. Young's rule
d. The mg/kg formula

ANS: D
The mg/kg formula is the most common and reliable method for calculating doses for young patients.

Fried's rule, Clark's rule, and Young's rule are not methods used for calculating drug dosages for young patients.

DIF: Cognitive Level: Knowledge REF: p. 46

4. While assessing an 82-year-old woman, the nurse determines that she is experiencing polypharmacy. What is this experience most likely to indicate?
a. She has a lower risk of drug interactions.
b. She takes medications for one illness several times a day.
c. She risks problems only if she also takes over-the-counter medications.
d. She takes multiple medications for several different illnesses.

ANS: D
Polypharmacy usually occurs when a patient has several illnesses and takes medications for each of them, possibly prescribed by different specialists who may be unaware of the patient's other treatments. This situation puts the patient at increased risk of drug interactions and adverse reactions.

Polypharmacy means that the patient has a higher, not lower, risk of drug interactions. Polypharmacy means the patient is taking several different medications, not just one. Polypharmacy can include prescription drugs, over-the-counter medications, and natural health products.

DIF: Cognitive Level: Application REF: p. 48

5. Which of the following statements is *true* regarding young patients?
a. Their levels of microsomal enzymes are decreased compared with those of adults.
b. Their total body water content is much less than that of adults.

c. Their first-pass elimination is increased because of higher portal circulation.
d. Gastric emptying is more rapid than that of adults because of increased peristaltic activity.

ANS: A
In children, the levels of microsomal enzymes are decreased.

Children's gastric emptying is slowed because of slow or irregular peristalsis. Total body water content is greater in children than in adults, and first-pass elimination by the liver is reduced because of immaturity of the liver and reduced levels of microsomal enzymes.

DIF: Cognitive Level: Comprehension REF: p. 46

6. For accurate medication administration to young patients, the nurse must take into account which of the following?
a. Weight, height, age, and organ maturity
b. Age, glomerular filtration rate, and weight
c. Weight, height, body temperature, and age
d. Weight, height, and total body water content

ANS: A
To accurately administer medications to young patients, their weight, height, age, and organ maturity must be taken into account.

Glomerular filtration rate, body temperature, and total body water content are not considerations when administering medications to young patients.

DIF: Cognitive Level: Comprehension REF: p. 46

7. An older adult patient will often experience a reduction in the stomach's ability to produce hydrochloric acid. This change will result in which of the following?
a. Delayed gastric emptying
b. Increased gastric acidity
c. Decreased intestinal absorption of medications
d. Altered absorption of weakly acidic drugs, such as aspirin

ANS: D
This aging-related change results in a decrease in gastric acidity and may alter the absorption of weakly acidic drugs, such as aspirin.

Delayed gastric emptying, increased gastric acidity, and decreased intestinal absorption of medications are not correct results of reduced hydrochloric acid production.

DIF: Cognitive Level: Application REF: p. 51

8. Which of the following is the reason drug toxicity is more likely to occur in the neonate?
a. The lungs are immature.
b. The kidneys are smaller.
c. The liver is not fully developed.
d. Renal excretion of the drug is faster.

ANS: C
A neonate's liver is not fully developed and cannot detoxify many drugs, thus drug toxicity is more likely to occur in the neonate.

The lungs and kidneys do not play major roles in drug metabolism. Renal excretion of the drug is slower, not faster, due to organ immaturity.

DIF: Cognitive Level: Comprehension REF: p. 46

9. An 83-year-old female patient has been given a thiazide diuretic to treat mild heart failure. She and her daughter should be taught to watch for which of the following complications?
a. Dizziness and constipation
b. Fatigue and dehydration
c. Daytime sedation and lethargy
d. Edema and blurred vision

ANS: B
Electrolyte imbalance, fatigue, and dehydration are common complications of thiazide diuretics in older adult patients.

Dizziness and constipation, daytime sedation and lethargy, and edema and blurred vision are not complications that occur when these drugs are given to older adults.

DIF: Cognitive Level: Comprehension REF: p. 52

10. Which one of the following drugs do young patients tolerate as well as or better than adults?
a. Aspirin
b. Digoxin
c. Morphine
d. Phenobarbital

ANS: B
Children tolerate digoxin the same as or better than adults. The maturity of various organs plays a role in how young patients are able to tolerate some drugs better than others.

Aspirin, morphine, and phenobarbital are more toxic in children than in adults.

DIF: Cognitive Level: Comprehension REF: p. 46

11. The nurse is aware that confusion, forgetfulness, and increased risk for falls are common responses of an older adult patient who is taking which of the following medications?
a. Laxatives
b. Anticoagulants
c. Sedatives
d. Diuretics

ANS: C
Sedatives and hypnotics often cause confusion, daytime sedation, ataxia, lethargy, forgetfulness, and increased risk for falls in older adults.

Laxatives, anticoagulants, and diuretics may cause adverse effects in older adults, but not the adverse effects specified in the question.

DIF: Cognitive Level: Application REF: p. 52

12. The nurse is trying to give a liquid medication to a 2-year-old child, and notes that the medication has a strong taste. Which of the following is the best way for the nurse to give this medication to a child?
a. Give the medication with spoonfuls of sherbet
b. Add the medication to the child's bottle
c. Tell the child you have candy for him
d. Add the medication to a cup of milk

ANS: A
Using sherbet or another nonessential food disguises the taste of the medication.

Adding the medication to the child's bottle is not correct because the child may not drink the entire contents of the bottle, thus wasting the medication. Telling the child that the medication is candy is not correct because using the word *candy* with drugs may lead to the child thinking that drugs are actually candy. Adding the medication to a cup of milk is not correct because the child may not drink the entire cup of milk, and the distasteful drug may cause the child to refuse milk in the future.

DIF: Cognitive Level: Application REF: p. 55

MULTIPLE RESPONSE

1. Which of the following is true regarding young patients? *Select all that apply*.
a. The levels of microsomal enzymes are decreased.
b. Perfusion to the kidneys may be decreased, which may result in reduced renal function.
c. First-pass elimination is increased because of higher portal circulation.
d. First-pass elimination is reduced because of the immaturity of the liver.
e. Total body water content is much less than in adults.

f. Gastric emptying is slowed because of slow or irregular peristalsis.
g. Gastric emptying is more rapid because of increased peristaltic activity.

ANS: A, B, D, F
In children, microsomal enzymes are decreased and first-pass elimination by the liver is reduced because of the immaturity of the liver. In addition, gastric emptying is reduced because of slow or irregular peristalsis. Perfusion to the kidneys may be decreased, resulting in reduced renal function.

"First-pass elimination is increased because of higher portal circulation" and "Gastric emptying is more rapid because of increased peristaltic activity" are not correct statements. Total body water content is greater in children than in adults.

DIF: Cognitive Level: Application REF: p. 46

2. Which of the following is true regarding older adults? *Select all that apply.*
a. The levels of microsomal enzymes are decreased.
b. Fat content is increased because of decreased lean body mass.
c. Fat content is decreased because of increased lean body mass.
d. The number of intact nephrons is increased.
e. The number of intact nephrons is decreased.
f. Gastric pH is less acidic.
g. Gastric pH is more acidic.

ANS: A, B, E, F
In older adults, levels of microsomal enzymes are decreased because the aging liver is less able to produce them; fat content is increased because of decreased lean body mass; the number of intact nephrons is decreased due to aging; and gastric pH is less acidic due to a gradual reduction of the production of hydrochloric acid.

"Fat content is decreased because of increased lean body mass," "The number of intact nephrons is increased," and "Gastric pH is more acidic" are incorrect statements.

DIF: Cognitive Level: Application REF: p. 51