

CHAPTER 3. PEDIATRICS, SELF-ASSESSMENT QUESTIONS

1. AJ is a 14-day-old premature male infant, born at 30-week GA, started on ampicillin and gentamicin for neonatal sepsis. Which pharmacokinetic parameter affects the patient's dosing frequency of gentamicin?
 - A. Absorption
 - B. Protein binding
 - C. Metabolism—Phase I reactions
 - D. Metabolism—Phase II reactions
 - E. Elimination half-life
2. Which is an appropriate maintenance fluid requirement for a 4-year-old boy with a weight of 40 pounds?
 - A. ~1400 mL/day
 - B. ~1600 mL/day
 - C. ~1800 mL/day
 - D. ~2000 mL/day
 - E. ~2200 mL/day
3. MM is a 6-month-old male infant who was born at 34-week GA. You are asked to evaluate his renal function in preparation for starting intravenous antibiotics. Which method for assessment is most appropriate?
 - A. "Bedside" Schwartz equation
 - B. Cockcroft–Gault equation
 - C. Schwartz (original) equation
 - D. Modification of diet in renal disease (MDRD) equation
 - E. Urine output alone

4. PG, a 1-week-old, 2.5-kg girl born at 30-week GA, is to be started on gentamicin for suspected neonatal sepsis. Which of the following is *true* regarding PG's apparent volume of distribution (V_d) in milliliters per kilogram for gentamicin compared with adults and children with normal renal function?
- A. V_d will be less than those used in adults and children.
 - B. V_d will be greater than those used in adults and children.
 - C. V_d will be less than those used in adults but similar to children.
 - D. V_d will be greater than those used in adults but less than in children.
 - E. V_d will be the same as adults and children.
5. NC is a 5-year-old boy who is to start carbamazepine, an antiepileptic medication, for seizure disorder. Which pharmacokinetic parameter affects his daily dose requirement of carbamazepine, by body weight?
- A. Absorption
 - B. Distribution
 - C. Metabolism—Phase I reactions
 - D. Metabolism—Phase II reactions
 - E. Elimination
6. Which of the following is *not* an appropriate treatment of cold symptoms in a 1-year-old child?
- A. Adequate oral fluid intake
 - B. Dextromethorphan cough syrup
 - C. Honey (orally)
 - D. Ibuprofen every 8 hours as needed for fever
 - E. Saline nasal spray as needed

7. KC is a 3-week-old male infant born at 37-week GA with a urinary tract infection (UTI). Which age-dependent factor hinders the use of ceftriaxone for KC's UTI?
- A. Gastric pH
 - B. Glomerular filtration rate
 - C. Intrapulmonary circulation
 - D. Serum albumin
 - E. Total body water
8. What is the estimated creatinine clearance for a 2-month-old term male infant whose weight is 4.5 kg, length 23.6 in (60 cm), and serum creatinine 0.5 mg/dL (or 44 $\mu\text{mol/L}$)?
- A. 16 mL/min/1.73 m²
 - B. 21 mL/min/1.73 m²
 - C. 39 mL/min/1.73 m²
 - D. 54 mL/min/1.73 m²
 - E. 66 mL/min/1.73 m²
9. In the outpatient setting, which of the following is *not* a feasible factor to consider when assessing for potential illness in an infant?
- A. Behavior such as lethargy and irritability
 - B. Body temperature
 - C. Diaper changes (urine output)
 - D. Oral intake
 - E. Mean arterial pressure
10. Which of the following items would be *least* appropriate to mix to mask the taste of medication for a 10-month-old infant?

- A. Applesauce
- B. Chocolate syrup
- C. Honey
- D. Pear puree
- E. Strawberry gelatin

11. Which patient is at *greatest risk* for a medication error?

- A. A 2-year-old girl (12 kg) who is started on amoxicillin suspension with dose rounded within 10% to meet a measurable volume.
- B. A 3-day-old boy (2.8 kg) who is on a low concentration heparin drip to maintain his umbilical arterial catheter.
- C. A 7-day-old premature female infant (1.5 kg) who is receiving gentamicin doses using a smart pump for infusion.
- D. A 10-year-old girl (55 lb [24.9 kg]) started on an insulin drip for diabetic ketoacidosis.
- E. A 12-year-old boy (34 kg) started on started on oxycodone for acute pain after surgery.

12. KT, an 18-month-old girl, swallowed some of her grandfather's medications from his weekly pillbox. KT's grandfather states that he is taking medications for blood pressure, sleep, and high cholesterol. He states that "she is a little sleepy and not behaving like herself right now." Which is the most appropriate action to manage the accidental ingestion for this child?

- A. Administer ipecac syrup immediately and induce emesis until paramedics arrive
- B. Allow KT to "sleep off" the medication and contact her pediatrician tomorrow

- C. Direct her family to take KT to the emergency department and contact local/regional poison control center
- D. Give continuous oral fluids to dilute the medication's effects
- E. Monitor the child's blood pressure at home and go to the emergency department if it is too low

13. Which is *false* about medication use in pediatric patients?

- A. Caregivers should be educated about measurement of liquid medication for each medication.
- B. It is appropriate to recommend a tablet formulation for any child of age 5 years and younger.
- C. Obtaining a child's medication history should include prescription, over-the-counter, and complementary medications.
- D. Suspendability, stability, uniformity, and palatability are important factors to consider when compounding a liquid formulation.
- E. When using intravenous formulations, fluid status and comorbidities like congenital heart disease should be considered.

14. Which statement is *false* regarding complementary and alternative medicine (CAM) use in the pediatric population?

- A. CAM is routinely disclosed in medication histories from parents/caregivers.
- B. Common illnesses in which CAM may be used include cancer, asthma, and autism spectrum disorder.
- C. Discussion of CAM use should be encouraged with parents/caregivers.
- D. Drug interactions are possible with CAM use.

E. There are limited data regarding the use of ginger and echinacea in children.

15. Which statement is *false* regarding off-label use of medications:

- A. It includes use of a medication outside the licensed age range.
- B. It is *not* permitted by law in the pediatric population due to lack of data.
- C. It is based on limited data about the use in infants and children.
- D. It is used in situations where there is no appropriate pediatric-approved alternative.
- E. It includes dosing outside of those recommended by the manufacturer's package insert.

Answers

- 1. E
- 2. A
- 3. C
- 4. B
- 5. C
- 6. B
- 7. D
- 8. D
- 9. E
- 10. C
- 11. D
- 12. C

13. B

14. A

15. B