

Single best answer.

- Each of the following parameters of cerebral perfusion and metabolism is approximately equal to 50 EXCEPT
  - Cerebral oxygen consumption in mL O<sub>2</sub>/min for a normal adult
  - Lower limit of mean arterial pressure for cerebral autoregulation in mmHg
  - Normal cerebral blood flow in mL/100g tissue/min
  - PaO<sub>2</sub> at which cerebral blood flow increases
  - PaCO<sub>2</sub> at which cerebral blood flow doubles
- An 8-kg, 5-month-old infant undergoes craniotomy for an arteriovenous malformation. During the procedure, severe hemorrhaging occurs and packed red blood cells 3 units are transfused rapidly. During infusion of the third unit, hypotension, nodal bigeminy, and prolongation of the QT interval are noted. The most appropriate management includes administration of
  - bicarbonate
  - calcium
  - ephedrine
  - lidocaine
  - potassium
- Which of the following statements concerning autonomic hyperreflexia after spinal cord transection is true?
  - It occurs within 24 hours after the injury
  - It occurs with lesions below T10
  - It is caused by a reflex increase in parasympathetic outflow
  - It is characterized by paroxysmal hypotension and tachycardia
  - It is prevented by blocking afferent visceral pathways
- A 70-kg, 46-year-old man is undergoing clipping of a cerebral aneurysm with nitrous oxide, opioid, relaxant anesthesia. He is otherwise healthy. As the surgeons are about to enter the dura, the brain is noted to be tense and bulging. Heart rate is 100 bpm and mean arterial pressure is 90 mmHg, PaO<sub>2</sub> 120 mmHg, PaCO<sub>2</sub> is 23 mmHg, and pH is 7.50. Which of the following should be done immediately?
  - Hyperventilation to a PaCO<sub>2</sub> of 15 to 20 mmHg
  - Administration of furosemide 20 mg intravenously
  - Administration of mannitol 0.5 g/kg
  - Administration of thiopental 250 mg in increments
  - Addition of halothane 1% to deepen anesthesia
- Which of the following is most reliable for treatment of cerebral artery vasospasm associated with subarachnoid hemorrhage?

- a. Antifibrinolytic therapy
  - b. Hyperventilation
  - c. Mannitol infusion
  - d. Nitroprusside infusion
  - e. Volume expansion
6. One hour after induction of anesthesia for a posterior fossa craniotomy using opioid, relaxant, and nitrous oxide, the brain begins to protrude through the dura. The most effective measure to decrease intracranial pressure is to
- a. administer additional opioid
  - b. decrease PaCO<sub>2</sub> from 25 to 15 mm Hg
  - c. drain cerebrospinal fluid
  - d. discontinue nitrous oxide
  - e. induce hypotension
7. Which of the following statements concerning air embolism during intracranial operations is true?
- a. It does not occur in supine patients
  - b. It is prevented by positive end-expiratory pressure
  - c. It is confined to the right side of the heart and the pulmonary vasculature
  - d. It is detectable by measurement of end-tidal nitrogen
  - e. It is most efficiently treated by aspiration from a pulmonary artery catheter
8. The EEG of a patient undergoing anesthesia with high-dose fentanyl would most likely show
- a. the same pattern seen with enflurane 0.5 MAC
  - b. cessation of low-frequency activity
  - c. accentuation of high-frequency activity
  - d. uniform depression of all frequencies
  - e. low-frequency, high-amplitude activity
9. Which of the following statements concerning cerebral vasospasm following intracranial hemorrhage is true?
- a. It is accompanied by paradoxical intracranial hypotension
  - b. It responds to nitroprusside therapy
  - c. It persists more than 48 hours after hemorrhage
  - d. It is exacerbated by intravascular volume expansion
  - e. It is confirmed by ST-T wave changes in the absence of myocardial ischemia
10. Advantages of central venous access over the peripheral route include:

- a. easier to learn
- b. results in fewer complications
- c. does not require interruption of CPR
- d. more rapid arrival of drugs at their sites of action

11. 11. Epinephrine:

- a. stimulates dopaminergic, alpha and beta receptors
- b. is the first drug administered in VF, pulseless VT, asystole, and pulseless electrical activity
- c. dilates coronary arteries, the primary reason for administration in cardiac arrest
- d. is a first-line drug in the management of the symptomatic patient with a second-degree AV block, type I

12. 12. Select the INCORRECT statement regarding endotracheal intubation:

- a. whenever possible, cricoid pressure should be applied by a second rescuer
- b. endotracheal intubation should not precede initial defibrillation attempts in VF
- c. once an endotracheal tube is in place, ventilation should be synchronized with chest compressions at a rate of 12 ventilations/minute
- d. endotracheal intubation allows adjunctive ventilatory equipment to be used more effectively and with less effort

13. The rigid pharyngeal catheter (Yankauer) is:

- a. used to clear secretion through the endotracheal tube
- b. used to clear secretions, blood clots, and other foreign material from the mouth and pharynx
- c. used to clear secretion through the tracheostomy tube
- d. used to clear secretions through the nasopharynx