Written Board Review: Geriatric Lecture Block

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**DIRECTIONS SUMMARIZED**

*If 4 choices available (ie, 1 through 4) it is a “K-type”*

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*If there are 5 choices (ie, A through E)*

One Best Answer

1. Factors that decrease the incidence of deep vein thrombosis following total hip replacement include:
   1. External compression of the lower extremities
   2. Epidural anesthesia intraoperatively
   3. Prophylactic aspirin
   4. Deliberate hypotension intraoperatively

1A. A patient is bleeding excessively after routine transurethral resection of the prostate. Re-exploration discloses diffuse oozing. The most appropriate management is administration of:

   (A) Platelets
   (B) Fresh frozen plasma
   (C) Desmopressin
   (D) Epsilon-aminocaproic acid
   (E) Cryoprecipitate

2. Perioperative therapy for hypercalcemia includes:
   1. Administration of saline solution
   2. Administration of furosemide
   3. Hyperventilation
   4. Administration of glucose and insulin
3. The hypotension that occurs after application of methylmethacrylate cement during insertion of a femoral prosthesis is minimized by:

   1. Venting the femoral shaft prior to use of the cement
   2. Pretreatment with an H2 antagonist
   3. Allowing partial curing of the methylmethacrylate
   4. Centrifugation of the methylmethacrylate prior to use

4. A 60-year-old man undergoes transurethral resection of a bladder tumor in the lithotomy position with spinal anesthesia. During the procedure the surgeon reports that the patient’s right leg is “jumping.” The movement is most likely caused by stimulation of which of the following nerves?

   (A) Femoral
   (B) Lateral femoral cutaneous
   (C) Obturator
   (D) Pudendal
   (E) Sciatic

5. A 70-year-old man with stable angina is scheduled for cataract removal with a retrobulbar block. After injection of 5 mL of 0.75% bupivacaine, heart rate decreases from 90 to 55 bpm, and frequent premature ventricular contractions are noted on the EKG. These changes are most likely caused by:

   (A) Intravascular injection of bupivacaine
   (B) Subarachnoid injection of bupivacaine
   (C) Myocardial ischemia
   (D) Oculocardiac reflex
   (E) Retrobulbar hemorrhage

6. When used for irrigation during transurethral resection of the prostate, glycine 1.5% is associated with each of the following EXCEPT:

   (A) Hemolysis
   (B) Hyperammonemia
   (C) Cerebral edema
   (D) Hypofibrinogenemia
   (E) Visual disturbances

7. Immediately after a retrobulbar block for cataract surgery, the eye grossly protrudes and the patient has the sensation of pressure in the eye. The most appropriate initial intervention is:

   (A) Hyperventilation
   (B) Surgical drainage of a hematoma
   (C) Manual compression of the globe
   (D) Administration of atropine intravenously
   (E) Administration of mannitol intravenously
8. During extracorporeal shock wave lithotripsy, the shock wave should be synchronized with:

(A) The P wave of the ECG  
(B) The R wave of the ECG  
(C) The T wave of the ECG  
(D) Peak inspiration  
(E) End-expiration

9. Which of the following drugs is contraindicated in patients with Parkinson’s disease?

(A) Atropine  
(B) Dopamine  
(C) Droperidol  
(D) Fentanyl  
(E) Isoflurane

10. During transurethral resection of the prostate, intravascular absorption of glycerin irrigant most commonly produces

(A) Alkalosis  
(B) Hemolysis  
(C) Hypertension  
(D) Tachycardial  
(E) Wheezing

11. During induction of anesthesia in a 70-year-old with aortic stenosis, the BP decreases from 140/80 to 70/45 mm Hg as the cardiac rhythm changes from normal sinus at 70 bpm to junctional at 120 bpm. The most appropriate initial therapy would be:

(A) Esmolol  
(B) Fluid bolus  
(C) Phenylephrine  
(D) Verapamil  
(E) Cardioversion

12. A 65-year-old patient with herpes zoster has pain in the left thorax and vesicular lesions in the first and second thoracic dermatomes. Appropriate management includes:

1. Epidural corticosteroids  
2. Stellate ganglion block  
3. Paravertebral somatic nerve block  
4. Acyclovir
13. A 70-year-old man who has severe claudication and is unable to ambulate freely is scheduled for a femoral popliteal bypass. He had an episode of severe chest pain 1 month ago. A preoperative ECG shows left ventricular hypertrophy with left bundle branch; no prior ECG is available for comparison. Useful preoperative evaluation would include:

1. Holter ECG monitoring for 24 hours
2. Dipyridamole-thallium imaging
3. Serum creatinine kinase assay
4. Echocardiography

14. After the first 70 minutes of a transurethral resection of the prostate, a 71-year-old man becomes confused and has tachycardia, hypertension, and shortness of breath. Serum sodium concentration is 116 mEq/L. After informing the surgeon that the procedure should be terminated as soon as possible, the most appropriate next step would be to:

(A) Administer furosemide
(B) Administer labetalol
(C) Administer 3% sodium chloride
(D) Change the irrigating solution to normal saline
(E) Induce general endotracheal anesthesia

15. An elderly patient has been using unidentified eye drops to treat glaucoma. Potential drug interactions include:

1. Severe tachycardia after topical administration of cocaine
2. Heart block after administration of verapamil
3. Hypertensive crisis after administration of ephedrine
4. Prolonged neuromuscular blockade after administration of succinylcholine

16. The central anticholinergic syndrome is LEAST likely to occur after administration of:

(A) Atropine
(B) Chlorpromazine
(C) Diphenhydramine
(D) Glycopyrrolate
(E) Scopolamine

17. In the elderly, scopolamine-induced delirium is:

(A) Absent with doses less than 0.4 mg
(B) Decreased by physostigmine
(C) Reversible with diazepam
(D) Reversible with pyridostigmine
(E) Similar to that produced by glycopyrrolate
18. A 45-kg, 80-year-old woman undergoes pin fixation of the right hip in the lateral decubitus position under spinal anesthesia. One day after the operation, she cannot move her left leg or foot actively. The most likely cause is:

(A) Compression of the sciatic nerve  
(B) Compression of the common peroneal nerve  
(C) Injury of the nerve root at L4–5  
(D) Stretching of the femoral nerve  
(E) Stretching of the tibial nerve

19. A 78-year-old man who is scheduled for an inguinal hernia repair has a preoperative EKG showing left bundle branch block. He has no symptoms of cardiovascular disease. The ECG finding most likely indicates:

(A) Cardiac disease  
(B) The need for spinal anesthesia  
(C) An electrolyte disturbance  
(D) The need for a temporary pacemaker  
(E) A normal finding in a patient of this age

20. A 72-year-old woman with stable angina is undergoing bowel resection. Anesthesia is induced with etomidate. Five minutes after starting isoflurane 1% in nitrous oxide 50% her BP decreases from 110/84 to 70/40 mm Hg. The most likely cause is:

(A) Coronary steal produced by isoflurane  
(B) Direct myocardial depression produced by isoflurane  
(C) Vasodilatation by isoflurane  
(D) Adrenocortical suppression produced by etomidate  
(E) Myocardial depression produced by etomidate

21. The hypotension that occurs after application of methylmethacrylate cement during insertion of a femoral prosthesis is minimized by:

1. Venting the shaft prior to use of the cement
2. Pretreatment with an H2 antagonist
3. Allowing partial curing of the methylmethacrylate
4. Centrifugation of the methylmethacrylate prior to use
22. A 70-kg, 77-year-old man is undergoing left nephrectomy with a nitrous oxide, oxygen, fentanyl, and midazolam anesthesia. He has a 90-pack-year history of cigarette smoking and has chronic obstructive pulmonary disease. One hour after incision, expiratory wheezing occurs ad peak inspiratory pressure increases from 35 to 65 mm Hg; end tidal PCO₂ is unchanged, but SpO₂ decreases from 97% to 88%. The most likely cause is:

(A) Endobronchial intubation
(B) Overinflation of the endotracheal tube cuff
(C) Pneumothorax
(D) Pulmonary edema
(E) Pulmonary embolism

23. In an elderly patient with aortic stenosis, myocardial ischemia following endotracheal intubation is most likely to result if there is an increase in:

(A) Heart rate
(B) Left ventricular end-diastolic pressure
(C) Myocardial contractility
(D) Pulmonary vascular resistance
(E) Systemic vascular resistance

24. A 76-year-old man has a leaking abdominal aneurysm. His BP and pulse have remained stable for 15 minutes at 90/60 mm Hg and 130 bpm, respectively. His hemoglobin content is 11 g/dL and the EKG shows a left bundle branch block. Induction of anesthesia should proceed:

(A) After a pulmonary artery catheter has been inserted and the pulmonary artery occlusion pressure is greater than 7 mm Hg
(B) When the pulse has decreased below 130 bpm from a rapid blood transfusion
(C) When systolic BP has increased to more than 120 mm Hg from a rapid infusion of lactated Ringer’s solution
(D) Immediately upon arrival at the operating room
(E) When circulatory signs deteriorate or cease to improve with rapid volume expansion

25. An obese 75-year-old woman is scheduled for open reduction of a left forearm fracture. Thirty minutes after successful interscalene block using 20 mL of 2% lidocaine, she becomes dyspneic. The dyspnea is most likely related to:

(A) Cervical epidural block
(B) Cervical sympathetic block with bronchospasm
(C) Chylothorax
(D) Elevation of the left hemidiaphragm
(E) Recurrent laryngeal nerve block
26. A 60-kg, 70-year-old man requires open reduction and fixation of an intertrochanteric fracture sustained 24 hours ago. Serum creatinine concentration is 1mg/dL and blood urea nitrogen is 40 mg/dL. The most likely cause of these findings is:

(A) Acute tubular necrosis  
(B) Chronic renal insufficiency  
(C) Dehydration  
(D) Obstruction of bladder outlet  
(E) Recent gastrointestinal hemorrhage

27. The likelihood of emergence delirium is increased by premedication with:

1. Atropine  
2. Pentazocine  
3. Pentobarbital  
4. Glycopyrrolate

28. A 67-year-old man received 40 mg atracurium intravenously prior to tracheal intubation for a 3-hour anesthetic with isoflurane, nitrous oxide, and oxygen. He has a history of chronic renal failure, hypertension treated with nifedipine, and peptic ulcer disease treated with magnesium trisilicate. Neostigmine and atropine were administered at the end of the operation. Causes of persistent weakness in the recovery room include:

1. Decreased atracurium excretion in renal failure  
2. Prolonged paralysis by calcium channel block  
3. Impaired Hoffman elimination by chronic acidosis  
4. Interference with neuromuscular function by hypermagnesemia

29. An 87-kg, 68-year-old woman in good health is undergoing a right knee arthroscopy while in the supine position with general anesthesia consisting of enflurane 2% and nitrous oxide 50%-50% in oxygen. She is breathing spontaneously though a 7-mm endotracheal tube. During the procedure, the arterial oxygen saturation measured by pulse oximetry decreases from 98% to 92%. The most likely cause of desaturation is:

(A) Decreased FRC  
(B) Diffusion hypoxia  
(C) Hypercarbia  
(D) Increased airway resistance produced by the endotracheal tube  
(E) Inhibition of hypoxic pulmonary vasoconstriction

30. A 64-year-old man with a left bundle branch block is undergoing placement of a pulmonary artery catheter through the right internal jugular vein. He becomes pale ad heart rate decreases to 40 bpm when the catheter tip enters the right ventricle. The most likely cause is:

1. Catheter loop in the right atrium  
2. Acute myocardial infarction  
3. Acute pneumothorax  
4. Carotid sinus reflex  
5. Complete heart block
31. A 75-year-old man received an uneventful epidural anesthetic for total knee arthroplasty. Twenty-four hours later, he has painless flaccid paralysis in both legs. The clinical presentation is most consistent with:

(A) Adhesive arachnoiditis
(B) Anterior spinal artery hematoma
(C) Epidural abscess
(D) Epidural hematoma
(E) Transverse myelitis

32. A 72-year-old man has a massive venous hemorrhage during a radical prostatectomy. Blood pressure decreases from 110/60 to 75/30 mm Hg and central venous pressure decreases from 12 to 4 mm Hg. End expiratory carbon dioxide tension decreases from 34 to 24 mm Hg during constant minute ventilation. The most appropriate next step is to:

(A) Apply positive end expiratory pressure to the breathing circuit
(B) Attempt to aspirate air from the central venous catheter
(C) Expand intravascular volume
(D) Place the patient in the Trendelenburg position
(E) Turn the patient to the left lateral decubitus position

33. A 71-year-old man has had residual hemiparesis since having a cerebrovascular accident 3 years ago. Compared with the response of the unaffected limbs to the non-depolarizing muscle relaxants, the hemiparetic limbs will show:

(A) The same response
(B) Greater depression of tetanus
(C) Greater twitch depression
(D) Less twitch depression
(E) Less post-tetanic facilitation

34. An obese 70-year-old woman with a long history of tobacco abuse is awake and semirecumbent after an uneventful anesthesia with isoflurane for a ventral hernia repair. During the first hour in the recovery room while she is breathing 50% oxygen by face mask, her arterial oxygen saturation decreases to 90%. Other vital signs remain satisfactory. Which of the following is most likely to be effective in the management of this situation?

(A) Intravenous doxapram
(B) Racemic epinephrine by inhalation
(C) Continuous positive airway pressure
(D) Reintubation of the trachea
(E) Coughing
35. During pulmonary artery catheterization a 70-year-old man receives morphine 6 mg and scopolamine 0.4 mg intravenously. The pulse oximetry indicates desaturation, which quickly resolves with stimulation. When the drapes are removed, he has unilateral eye pain, decreased visual acuity, and dilated and irregular pupils. These eye symptoms are most likely caused by:

(A) Retinal hemorrhage  
(B) Morphine-induced oculogyric crisis  
(C) Corneal abrasion  
(D) Carotid artery embolization  
(E) Angle-closure glaucoma

36. Intravenous regional anesthesia for a closed reduction of a Colles fracture:

1. Provides inadequate analgesia for bone pain  
2. Provides inadequate muscle relaxation  
3. Limits tourniquet time to less than 1 hour  
4. Provides the same duration of anesthesia regardless of the type of local anesthesia used

37. Complications of retrobulbar block include:

1. Retrobulbar hemorrhage  
2. Respiratory arrest  
3. Bradycardia  
4. Horner’s syndrome

38. A 66-year-old man with chronic obstructive pulmonary disease who underwent colectomy 12 hours ago has been receiving an epidural infusion of fentanyl at a rate of 100 mcg/hour. Which of the following is LEAST likely to develop?

(A) Hypotension  
(B) Nausea  
(C) Pruritus  
(D) Respiratory depression  
(E) Urinary retention

39. A 65-year-old man is disoriented and has a headache and nausea 30 minutes after transurethral resection of the prostate with glycine irrigant, performed under spinal anesthesia. Heart rate is 50 bpm and BP is 180/110 mm Hg. Which of the following is LEAST likely?

(A) Decreased serum osmolality  
(B) Serum sodium concentration of 132 mEq/L  
(C) Increased serum ammonia concentration  
(D) Bibasilar rales  
(E) Jugular venous distention
40. A 76 year old man is restless and hallucinating in the preoperative holding area. He received morphine 5 mg and scopolamine 0.4 mg premedication and is now breathing oxygen 2 L/min through nasal prongs. Oxygen saturation is 98%. Which of the following is the most appropriate next step?

   (A) Administration of naloxone
   (B) Administration of physostigmine
   (C) Induction of general anesthesia
   (D) Determination of serum electrolyte concentrations
   (E) CT scan of the head