

CME QUESTIONS

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INSTRUCTIONS

- The answer grid and evaluation form should be submitted as a printout from the ITACCS website.
- On the answer form at the bottom of page 97, circle only one response next to each number.
- Complete the evaluation form.
- Keep a copy of your completed answer form and evaluation form.
- Write a check for \$200 (or \$100 accompanied by verification of current ITACCS membership), payable to the International Trauma Anesthesia and Critical Care Society.
- Mail the forms and your check (and membership verification, if applicable) to ITACCS, Department of CME Credit, PO Box 4826, Baltimore, MD 21211.
- The completed test will be accepted for grading if received by March 31, 2009.
- Please allow 4 to 6 weeks for processing.

CME QUESTIONS

- The most accurate measure of depth of shock is:
 - Blood pressure
 - Heart rate
 - Base deficit
 - Arterial oxygen tension
- Which of the following organs is *best* able to reduce cellular oxygen demand by "hibernating"?
 - Brain
 - Heart
 - Kidney
 - Lung
- Hemorrhagic shock following injury:
 - Accounts for 30-40% of fatalities
 - Is the second leading cause of death overall
 - Was responsible for 82% of operating room deaths in one series
 - Accounted for 28% of fatal management errors in a mature trauma program
 - All of the above
- Experience with rFVIIa in injured patients has revealed the following *except*?
 - Reduction in prothrombin time
 - Diffuse bleeding is markedly reduced or stopped
 - Decreased requirements for packed red blood cell transfusions
 - Decreased effectiveness in profound acidosis
 - Statistically improved mortality in randomized controlled trials
- In critically ill anemic patients, there is a blunted erythropoietin response to the degree of anemia when compared with erythropoietin concentrations of iron-deficient anemic controls with comparable hemoglobin levels.
 - True
 - False
- Complications of transfusions in critically ill trauma patients include:
 - Nosocomial infections
 - Longer hospital length of stay
 - Longer ICU length of stay
 - Longer duration of mechanical ventilation
 - All of the above
- Before cell-salvaged blood is reinfused into a patient, it is filtered twice, and then must be centrifugally washed to remove noncellular debris and potential contaminants.
 - True
 - False
- Delayed or hypotensive fluid resuscitation:
 - Increases survival in patients with ruptured aortic aneurysm and in military trauma patients
 - Is superior in animal studies
 - Is aimed at restoration of systolic blood pressure to more than 80 mm Hg in pregnant patients and head trauma patients, and to restore mental status in all others
 - Is detrimental in some human studies
- Transfusion in trauma:
 - Should be done with O negative blood only
 - If more than 2-4 units of O type blood have been administered, one should continue with the O type blood even after type-specific blood is available
 - Should be delayed until surgical control of bleeding is achieved
 - In case of massive ongoing blood loss, should combine transfusion of packed red blood cells, coagulation factors and platelets
- Recombinant factor VIIa:
 - Reduces transfusion requirements, major complications, and death in severe trauma
 - Stops the traumatic bleeding, but leads to thrombosis, especially of the carotid and mesenteric arteries
 - Should be used as early as possible before irreversible shock develops
 - Not enough data are available thus far to make definite recommendations about patient selection, timing, and dosage in trauma patients
- What is the most often used concentration of saline solution when using hypertonic volume replacement?
 - 30%
 - 3.5%
 - 7.2% to 7.5%
 - 10%
 - 20%

- 12. Risk of bleeding complications has been shown to be highest with:
 - a. Gelatins
 - b. Albumin
 - c. Dextrans
 - d. Crystalloids
 - e. Modern HES-preparation (with a low molecular weight and a low molecular substitution)
- 13. What is the most common cause of death following allogeneic transfusion?
 - a. Hemolytic transfusion reaction
 - b. Human immunodeficiency virus
 - c. Transfusion-related acute lung injury (TRALI)
 - d. Febrile reaction
- 14. All of the following are a result of hypothermia *except*:
 - a. Metabolic acidosis
 - b. Impaired immune response
 - c. Decreased metabolic function
 - d. Hypercoagulable state
 - e. Neuroprotection
- 15. When incubated in a water bath, at which temperature will red blood cells begin to show degradation and hemolysis?
 - a. 40°C
 - b. 44°C
 - c. 46°C
 - d. 48°C
 - e. 50°C
- 16. Pediatric patients:
 - a. Lose heat at the same rate as adults
 - b. Are easy to keep warm
 - c. Tolerate decreased intravascular volume better than adults
 - d. Rarely are inflicted with traumatic injuries
 - e. Can have a relatively more severe hypovolemia because of smaller total blood volumes.
- 17. Studies have demonstrated that the transfusion of blood in trauma patients increased the incidence of all of the following *except*:
 - a. Multiple organ failure
 - b. Infection
 - c. Pneumonia
 - d. Renal failure
 - e. Death
- 18. PolyHeme has been extensively studied during the past 10 years. All of the following have been found *except*:
 - a. PolyHeme effectively delivers oxygen and maintains total hemoglobin (Hb) in lieu of red blood cells (RBCs) after acute blood loss, thereby reducing the need for allogeneic transfusions.
 - b. PolyHeme lacks the vasoconstrictive effects associated with other Hb-based blood substitutes.
 - c. PolyHeme increased survival at life-threatening Hb levels by maintaining total Hb in the absence of RBC transfusions.
 - d. In patients undergoing elective abdominal aortic aneurysm repair, patients transfused with PolyHeme had less serious cardiovascular consequences than those who received RBCs.
 - e. PolyHeme (in lieu of stored RBCs) will attenuate the proinflammatory effects associated with allogeneic RBC transfusions.
- 19. Currently viable hemoglobin-based oxygen carriers are associated with mild increases in systemic and pulmonary blood pressure.
 - a. True
 - b. False
- 20. During resuscitation from hemorrhage all of the following are true about hemoglobin-based oxygen carriers (HBOCs) *except*:
 - a. Patients with low hemoglobin concentrations treated with PolyHeme had low mortality.
 - b. MalPEG-Hb restored capillary density, acid base status, and tissue oxygenation better than colloid.
 - c. Bovine hemoglobin failed to correct tissue oxygen delivery and cardiac index despite normalizing blood pressure and heart rate.
 - d. HBOC-related vasoconstriction was not a concern with cross-linked hemoglobin.

Evaluation Form: Please rate this self-study activity by marking one response for each statement.

Did the articles meet their stated objectives? Yes No

How do you rank the quality of this educational activity? 5 (high) 4 3 2 1 (low)

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Did you perceive any evidence of bias for or against any commercial products? Yes No If yes, please explain.

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I certify that I have completed the "TraumaCare/Vol. 18, No. 1, 2008 issue" activity as designed and claim 10 credit hours in Category 1 of the Physicians Recognition Award of the American Medical Association.

Signature _____ Date _____

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