Identifying Knowledge Gaps

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This workbook contains the questions from the 2013 Self-Assessment Examination for Practitioners (SAE-P): Brain Injury. Answer these questions to identify your knowledge gaps and learn which areas need more attention on this clinical topic. To help you answer the questions, you can use the references that are provided for each question at the end of the workbook, or you can refer to PM&R Knowledge NOW® (www.pmrknowledgenow.org), the Academy’s online resource of 100+ clinical topics in the specialty of PM&R.

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1. Approximately 1.5 million Americans suffer a traumatic brain injury (TBI) each year. What percentages are considered mTBI (mild Traumatic Brain Injury)?
   (a) 10–19%
   (b) 20–28%
   (c) 50–65%
   (d) 75–90%

2. Comparing computed tomography (CT) and magnet resonance imaging (MRI), the most sensitive neuroimaging technique to detect diffuse axonal injury after a traumatic brain injury is
   (a) T1 weighted MRI scan.
   (b) T2 weighted MRI scan.
   (c) Diffusion weighted MRI scan.
   (d) CT scan.

3. Post Concussive Syndrome (PCS) is a collection of symptoms commonly occurring after Mild Traumatic Brain injury (mTBI). Which of the following is NOT considered a symptom of PCS after mTBI?
   (a) Dizziness
   (b) Memory deficits
   (c) Headache
   (d) Focal numbness

4. When post-concussion syndrome (PCS) continues beyond 3-6 months after Mild Traumatic Brain Injury (mTBI), it is called:
   (a) Persistent PCS
   (b) Second impact syndrome
   (c) Malingering
   (d) Moderate TBI

5. The most common symptom described after mild TBI is:
   (a) Somnolence
   (b) Irritability
   (c) Headache
   (d) Memory loss

6. Which of the following is true regarding mild Traumatic Brain Injury (mTBI)?
   (a) Not all mTBIs are concussions.
   (b) Concussion and mTBI are interchangeable terms.
   (c) Some concussions are not mTBIs.
   (d) MTBI is usually diffuse axonal injury.

7. Which of the following is the most commonly observed neuropsychiatric disorder in persons with severe traumatic brain injury?
   (a) Apathy
   (b) Eating disturbance
   (c) Depressed mood
   (d) Irritability

8. Which drug class has the best evidence for its effectiveness in the treatment of agitation associated with acquired brain injury?
   (a) Anticonvulsants
   (b) Anxiolytics
   (c) Antipsychotics
   (d) Beta blockers
9. Which is most accurate about amantadine in patients with prolonged disorders of consciousness after severe traumatic brain injury?
   (a) Dose needs to be titrated every 2 days.
   (b) It is effective in accelerating functional recovery pace.
   (c) Its benefit is dependent on injury severity.
   (d) It increases the risk of seizures.

10. Common risk factors for bone mineral density decline in adults with acquired neurological conditions include immobilization and which of the following?
   (a) Hypogonadism
   (b) Vitamin D deficiency
   (c) Antiepileptic drug use
   (d) Hypocalcemia

11. Which of the following is the most common neuroendocrine deficiency from chronic post-traumatic hypopituitarism in individuals with Traumatic Brain Injury (TBI)?
   (a) growth hormone
   (b) gonadotrophin
   (c) thyroid hormone
   (d) cortisol

12. Sleep disorders after Traumatic Brain Injury:
   (a) begin in the first 2 months post injury.
   (b) most likely to occur in the first year.
   (c) worsen as the neurologic state improves.
   (d) are not common.

13. CDP-choline or citicholine is classified as an acetylcholine precursor, offering potential neuroprotective properties and facilitated neurorepair post injury.

   Among patients with traumatic brain injury, the Citicoline Brain Injury Treatment Trial (COBRIT) study showed that citicholine use:
   (a) has poor bioavailability.
   (b) has increased benefit at 30 days.
   (c) did not improve functional status.
   (d) improved cognitive status.

14. The Craig Handicap Assessment and Reporting Technique (CHART):
   (a) indicates high handicap at high scores.
   (b) measures social and community participation.
   (c) has a set time period for administering it.
   (d) assesses environmental issues.

15. Which is the most common cause of traumatic brain injury-related emergency room visits in the USA?
   (a) Motor vehicle accidents
   (b) Assaults
   (c) Struck by or against an object
   (d) Falls

16. Traumatic brain injuries can be divided into focal and diffuse injuries. Which is considered an example of a diffuse injury?
   (a) Contusions
   (b) Intracranial hemorrhage
   (c) Traumatic axonal injury
   (d) Skull fractures

17. Traumatic brain injuries can be divided into primary, at time of impact, and secondary injuries that occur after initial insult. Which is considered an example of a secondary injury?
   (a) Metabolic derangement
   (b) Cerebral contusion
   (c) Traumatic axonal injury
   (d) Vascular injury

18. Epidural hematomas can occur after local impact to the head with subsequent laceration of underlying vessels. Injury to which of the following structures is most likely to result in an epidural hematoma?
   (a) Meningeal artery
   (b) Bridging veins
   (c) Middle cerebral artery
   (d) Dural sinuses
19. Which clinical factor correlates most powerfully with outcome after a traumatic brain injury?
   (a) Age at injury
   (b) Duration of posttraumatic amnesia
   (c) Length of coma
   (d) Neuroimaging findings at injury

20. Minimally conscious state is characterized by the presence of
   (a) sleep-wake cycles.
   (b) cranial nerve reflexes.
   (c) self-awareness.
   (d) reflexive behaviors.

21. Which score range on the Galveston Orientation and Amnesia Test (GOAT) indicates the end of post-traumatic amnesia (PTA)?
   (a) 75–85
   (b) 55–65
   (c) 35–45
   (d) 15–30

22. The primary neurotransmitter involved in the secondary injury cascade after a traumatic brain injury is:
   (a) Glycine
   (b) Serotonin
   (c) Glutamate
   (d) Acetylcholine

23. A Grade 2 (moderate) concussion on the Cantu concussion scale is characterized by loss of consciousness for:
   (a) > 24 hours
   (b) > 5 minute
   (c) < 30 seconds
   (d) < 1 minute

24. Second impact syndrome is characterized by massive cerebral edema and death when two minor head traumas/concussions occur within:
   (a) 10 days
   (b) 1 month
   (c) 12 weeks
   (d) 4 hours

25. Which one of the following is an early predictor of poorer outcome after mild traumatic brain injury?
   (a) Male gender
   (b) Younger age
   (c) Substance abuse
   (d) Higher education

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References By Question:


23. West J Emerg Med. 2009 February; 10(1): 6–10. PMCID: PMC2672291 Second Impact Syndrome Tareg Bey, MD* and Brian Ostick, MD† * University of California, Irvine School of Medicine † Christiana Care Emergency Medicine, Newark, Delaware Address for Correspondence:Tareg Bey, MD, FACEP, Department of Emergency Medicine, UC Irvine Medical Center, 101 The City Drive, Rte 128, Orange, CA 92868. Email: tbey@uci.edu . Supervising Section Editor: Mark I. Langdorf, MD, MHPE
