Multiple-Choice Questions

The Multiple-Choice Questions are an integral part of the issue. They are intended as a means of stimulating thought and helping participants assess general understanding of the material presented in this issue. For each item, select the *single best response*.

IMPORTANT: To earn credits toward ABPN Maintenance of Certification self-assessment (part 2), first complete the Self-Assessment Pretest online at ***www.aan.com/continuum/cme***. Instructions for earning self-assessment credit appear on page 563 of this issue. After submitting the Self-Assessment Pretest, study the entire issue using your pretest results as a guide to direct your learning. Then complete the 40 Multiple-Choice Questions and issue evaluation online at ***www.aan.com/continuum/cme***.

Upon completion of the Self-Assessment Pretest and Postreading Multiple-Choice Questions, participants may earn up to 12 *AMA PRA Category 1 Credits*™ toward self-assessment CME. *Category 1* CME credits not designated from self-assessment may be obtained by completing only the 40 Multiple-Choice Questions (up to 10 *AMA PRA Category 1 Credits*).

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Participants have up to 3 years from the date of publication to earn CME credits. No CME will be awarded for this issue after June 30, 2016.

▶ 1. Which of the following is the major role of the neurologist after a diagnosis of psychogenic nonepileptic events?

A. appropriately weaning antiepileptic drugs
B. describing events in ambiguous terms
C. ensuring that patients continue to refrain from driving a motor vehicle
D. ordering follow-up EEG in 6 to 12 months
E. prescribing a selective serotonin reuptake inhibitor or other antidepressant

▶ 2. Deep brain stimulation for drug-resistant epilepsy targets which of the following structures?

A. anterior nucleus of the thalamus
B. centromedian nucleus of the thalamus
C. cingulate gyrus
D. hippocampus
E. internal segment of the globus pallidus

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▶ 3. According to the International League Against Epilepsy's 2010 revision of its seizure classification system, which of the following factors is most helpful in initially focusing the scope of diagnostic possibilities for specific electroclinical syndromes?

A. age at onset
B. family seizure history
C. frequency of spells
D. history of toxic exposure
E. severity of the disorder

▶ 4. Which of the following conditions would likely preclude the consideration of epilepsy surgery in a patient?

A. dominant hemisphere focus
B. low-grade tumor
C. mental retardation
D. primary generalized epilepsy
E. prior vagus nerve stimulator use

▶ 5. A 63-year-old woman is hospitalized with herpes simplex virus encephalitis. Which of the following EEG patterns is most likely to be seen in this patient?

A. burst suppression
B. generalized periodic discharges
C. periodic lateralizing discharges
D. small sharp spikes
E. stimulus-induced, rhythmic, periodic, or ictal discharges

▶ 6. A 60-year-old woman develops generalized seizure activity lasting 10 minutes; seizure activity appears to arrest after administration of 4 mg of IV lorazepam. She has chronic kidney disease but is otherwise in good health. Which of the following is the best next pharmacologic step in management?

A. continuous midazolam infusion
B. continuous propofol infusion
C. IV fosphenytoin
D. IV ketamine
E. IV phenobarbital

▶ 7. Which of the following antiepileptic drug combinations is most likely to result in symptoms of diplopia and dizziness?

A. phenobarbital and valproate
B. phenytoin and carbamazepine
C. phenytoin and gabapentin
D. topiramate and carbamazepine
E. valproate and lamotrigine

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▶ 8. Which of the following EEG patterns is rarely seen in normal patients and has a high specificity for temporal lobe epilepsy?

A. 14 and 6 positive spikes
B. diffuse slow activity
C. rhythmic temporal delta
D. triphasic waves
E. wicket spikes

▶ 9. The cortical hamartomas of tuberous sclerosis display different MRI characteristics depending on a patient's age. Which of the following pathophysiologic processes is responsible for this age-related change in the MRI characteristics of these lesions?

A. breakdown of blood-brain barrier
B. calcification
C. inflammation
D. myelination
E. neovascularization

▶ 10. Surgery for which of the following types of epilepsy is least likely to result in seizure freedom?

A. epilepsy due to a hemispheric syndrome
B. epilepsy due to neonatal infarct
C. epilepsy due to tumor
D. mesial temporal lobe epilepsy
E. nonlesional neocortical epilepsy

▶ 11. A patient with which of the following conditions should not be placed on a ketogenic diet?

A. diabetes
B. hyperlipidemia
C. obesity
D. pancreatitis
E. Rett syndrome

▶ 12. A 10-year-old child with epilepsy since age 2 that is refractory to medical treatment has been followed serially with brain MRI scans, which show progressive atrophy of the left hemisphere. What is the most likely diagnosis?

A. focal cortical dysplasia
B. neurofibromatosis
C. Rasmussen encephalitis
D. Sturge-Weber syndrome
E. tuberous sclerosis

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▶ 13. A 21-year-old man is seen in clinic for management of seizures. He has had several episodes of generalized tonic-clonic seizure activity with resultant oral trauma and incontinence. Some of his events may have started with focal shaking in the right arm, although this history is unclear and is unable to be corroborated. EEG reveals no epileptiform activity or asymmetry, and brain imaging is unremarkable. Of the following anticonvulsants, which would be most appropriate for this patient?

A. gabapentin
B. lacosamide
C. oxcarbazepine
D. phenobarbital
E. zonisamide

▶ 14. Which of the following is a possible predictor of refractory status epilepticus (status epilepticus not responding to two antiepileptic medications)?

A. convulsive status epilepticus
B. hypoxic-ischemic encephalopathy
C. older age
D. prior stroke
E. underlying malignancy

▶ 15. Approximately what percentage of patients with epilepsy will become seizure free on the initial antiepileptic drug regimen?

A. 10%
B. 40%
C. 60%
D. 80%
E. 95%

▶ 16. A 40-year-old woman is admitted to an epilepsy monitoring unit for evaluation of paroxysmal episodes of neurologic dysfunction. Her episodes involve some nonrhythmic shaking of both arms and pelvic thrusting without any correlate on the EEG; psychogenic nonepileptic events are diagnosed. Which of the following characteristics is most associated with a good outcome (ie, resolution of episodes)?

A. episodes with prominent motor features
B. female gender
C. lower educational achievement
D. older age at diagnosis
E. shorter duration of illness

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▶ 17. A 66-year-old woman is seen in clinic for a new diagnosis of epilepsy; she has experienced recurrent partial seizures attributed to a left hemispheric stroke. Her medical history is most notable for atrial fibrillation (for which she takes warfarin), osteoporosis, and a history of kidney stones. Her primary care physician started her on phenytoin, which resulted in a rash. Which of the following is the most appropriate antiepileptic medication for this patient?

A. carbamazepine
B. levetiracetam
C. primidone
D. valproate
E. zonisamide

▶ 18. Which of the following is the leading rationale for withholding antiepileptic therapy in a child after a first unprovoked seizure?

A. recurrence rates are generally very low
B. risk of recurrent seizure is not reduced
C. side effects of drugs outweigh benefits
D. the event may be nonepileptic
E. the long-term prognosis is unchanged

▶ 19. In 2010, the International League Against Epilepsy departed from its 1989 classification scheme of epilepsies and revised its seizure classification system. What was the primary goal of this change?

A. advancement of a value system for syndromic severity
B. grouping of patients' diagnoses in a new classification structure
C. keeping pace with advancing knowledge of epilepsy and seizures
D. linkage of seizure manifestations with a cause
E. modification of billing and coding practices with regard to epilepsy

▶ 20. Although not all data are available for all drugs (and keeping in mind that an individual patient may have other specific needs), which of the following antiepileptic drugs would be the best initial choice in an adolescent girl with juvenile myoclonic epilepsy?

A. carbamazepine
B. ethosuximide
C. lacosamide
D. valproic acid
E. levetiracetam

▶ 21. Fetal exposure to which of the following medications is most likely to be associated with decreased IQ during childhood?

A. carbamazepine
B. lamotrigine
C. phenytoin
D. topiramate
E. valproate

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▶ 22. Psychogenic nonepileptic events occurring in which of the following populations are most likely to be misdiagnosed as epileptic seizures?

A. children
B. men
C. military veterans
D. patients with a history of substance abuse
E. pregnant women

▶ 23. A 23-year-old woman is seen for evaluation of intermittent spells concerning for seizures. The presence of which of the following characteristics of her spells would be more suggestive of epileptic seizures as opposed to psychogenic nonepileptic events?

A. ictal eye closure
B. opisthotonic posturing
C. side-to-side head movements
D. stuttering quality of speech
E. tongue biting

▶ 24. Which of the following clinical factors is most predictive of cognitive decline after epilepsy surgery?

A. higher preoperative cognitive performance
B. presence of hippocampal sclerosis
C. surgery on nonlanguage dominant hemisphere
D. younger age at seizure onset
E. younger age at time of surgery

▶ 25. Which of the following medications is most likely to be associated with interictal spikes or epileptiform abnormalities on EEG?

A. cefepime
B. doxycycline
C. fluoxetine
D. methylphenidate
E. modafinil

▶ 26. A 27-year-old woman is seen in clinic for ongoing management of her juvenile myoclonic epilepsy. Her seizures have been well controlled on lamotrigine, with no seizures in the past 2 years. She does report some symptoms of depression, as well as anticipatory anxiety regarding the possibility of future seizures. Which of the following options is the best next step in management?

A. bupropion
B. citalopram
C. nortriptyline
D. taper off lamotrigine and begin levetiracetam
E. venlafaxine

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▶ 27. A 25-year-old woman with a history of complex partial epilepsy has been treated successfully with topiramate for 2 years. She is contemplating initiating birth control and comes to discuss her options with her physician. Which of the following would be a reasonable contraceptive choice for this patient?

A. contraceptive hormonal patch
B. intrauterine device
C. low-dose combined oral contraceptive with estrogen and progestin components
D. progestin-only oral contraceptive pill
E. vaginal ring

▶ 28. Which of the following is the most common side effect seen after placement of a vagus nerve stimulator?

A. bradycardia
B. device infection
C. excessive cough
D. vocal cord paralysis
E. voice alteration/hoarseness

▶ 29. A 23-year-old man is admitted to the hospital for long-term video-EEG monitoring. He has multiple events while in the hospital, but no clear abnormality is apparent on the EEG. Which of the following characteristics may still support a diagnosis of epileptic seizures as opposed to psychogenic nonepileptic events?

A. ability for events to be induced or suggested
B. high-amplitude, thrashing motor activity
C. lack of events occurring in sleep
D. prolonged alterations in level of alertness
E. stereotyped nature of events

▶ 30. A 30-year-old man who has had focal epilepsy for 15 years still experiences four to five episodes per month despite medication. He takes two anticonvulsants; his current medications are the ninth and tenth drugs he has tried. Repeated EEGs have shown a right temporal focus. He is on disability and lives with his parents. What is the next best step in management of this patient?

A. addition of a third antiepileptic drug to his current regimen
B. substitution of a new drug for one of his current antiepileptic drugs
C. surgical evaluation
D. transcranial magnetic stimulation
E. vagus nerve stimulator trial

▶ 31. Which of the following best describes the relationship between vagus nerve stimulation and risk of bradycardia?

A. can be seen with stimulation of either nerve
B. higher risk with left nerve stimulation
C. lowest risk seen with bilateral stimulation
D. no risk with left nerve stimulation
E. no risk with right nerve stimulation

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▶ 32. A 27-year-old woman with longstanding complex partial seizures, well controlled on monotherapy with carbamazepine, is seen in the first trimester of pregnancy. She is concerned about seizures becoming more frequent during pregnancy. Which of the following is the most appropriate counseling of this patient regarding her pregnancy and seizure recurrence?

A. most women experience a decrease in seizure frequency
B. most women experience an increase in seizure frequency
C. most women experience no change in seizure frequency
D. seizures are least likely to occur in the third trimester
E. seizures are more likely to be generalized in nature

▶ 33. Which of the following seizure/epilepsy subtypes appears to respond best to deep brain stimulation techniques?

A. absence seizures
B. frontal lobe epilepsy
C. juvenile myoclonic epilepsy
D. Lennox-Gastaut syndrome
E. temporal lobe epilepsy

▶ 34. Which of the following clinical characteristics is associated with an increased risk of suicidal ideation in patients with epilepsy?

A. coexistent depression
B. higher frequency of seizures
C. lower reported quality of life
D. male sex
E. partial-onset seizures

▶ 35. A 76-year-old man is admitted with a right frontal intracerebral hemorrhage. After some initial improvement in his neurologic status, he has become a bit less responsive. EEG shows fluctuating right greater than left periodic discharges at 1 Hz to 2 Hz without definite evolution. Which of the following is the best next step in management?

A. 0.1 mg/kg IV lorazepam
B. continuous propofol infusion
C. observation with repeat 30-minute EEG in 24 hours
D. oral levetiracetam
E. sequential small doses of midazolam or other IV antiepileptic drug until the EEG pattern resolves

▶ 36. A 6-year-old child with Lennox-Gastaut syndrome and medically resistant epilepsy is currently on two anticonvulsants and still has several seizures daily despite trials of more than five antiepileptic drugs. Dietary treatment with a ketogenic diet is proposed. What is the approximate percent chance that this patient will respond with a greater than 50% seizure reduction?

A. 5%
B. 10%
C. 25%
D. 50%
E. 90%

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▶ 37. A 25-year-old man with a 10-year history of medically intractable focal epilepsy undergoes an evaluation for possible epilepsy surgery. His clinical symptoms and EEG findings suggest a left mesial temporal focus. Which of the following MRI sequences is most sensitive for diagnosing hippocampal sclerosis in this patient?

A. diffusion-weighted images
B. fluid-attenuated inversion recovery (FLAIR)
C. gadolinium-enhanced T1
D. gradient echo
E. T1 without contrast

▶ 38. A 33-year-old man with known epilepsy is seen in the emergency department after a seizure with an associated fall. IV access is obtained. He is initially at his baseline neurologic status but then develops generalized seizure activity that has lasted 5 minutes. Which of the following is the most appropriate next step in management?

A. buccal midazolam
B. IV diazepam
C. IV fosphenytoin
D. IV lorazepam
E. rectal diazepam

▶ 39. The presence of a photoparoxysmal response to photic stimulation during an EEG is most commonly seen in which of the following settings?

A. cognitively normal patients
B. occipital lobe epilepsy
C. primary generalized epilepsy
D. sleep-deprived patients
E. temporal lobe epilepsy

▶ 40. In addition to a risk of major congenital malformations, which of the following antiepileptic drugs is also associated with an elevated risk of autism spectrum disorders and lower IQ at age 6?

A. carbamazepine
B. lamotrigine
C. phenobarbital
D. phenytoin
E. valproate

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