

CNS MED

14/1/2021



1) A 12-year-old girl presented with 6 months history of worsening headaches. Physical examination revealed an ataxic gait and an incoordination of upper and lower limbs. Brain MRI revealed a cystic mass in the right cerebellar hemisphere. Sectioning of the mass after the resection surgery showed a cystic mass with 1-cm mural nodule. Microscopically, the mass is composed of cells that are positive for glial fibrillary acidic protein (GFAP) and rich in eosinophilic granular bodies. Which of the following molecular markers is most likely to be found in the cells of this mass?

Select one:

1. BRAF mutations
2. MYC amplification
3. Mutations in 1DH1/2
4. 1p and 19q co-deletions.
5. Mutations in the NF2

2) Lateral Ventricles: Select the incorrect?

Select one:

- a. Communicates with the cavity of the third ventricle through the foramen of Monro
- b. Its body occupies the parietal lobe
- c. The medial wall of the body is formed by the septum pellucidum
- d. The bulb of posterior horn is formed by the forceps major
- e. Amygdaloid body snare the floor of the inferior horn

3) Which of the followings is INCORRECT regarding fungal and amoebic meningitis?

Select one:

- a. Cryptococci produce polysaccharide capsule.
- b. They use macrophages to cross the blood-brain barrier.
- c. Infections in immunologically normal people are very common.
- d. Person-to-person transmission has not been documented.
- e. If left untreated, cryptococcal meningoencephalitis may lead to brain damage, hearing loss & hydrocephalus.

4) The following are adverse effects of sodium valproate when used in epilepsy except?

Select one:

- a. Impaired cognition.
- b. Hepatitis.
- c. Alopecia.
- d. Increase in weight.
- e. Increased blood level of lamotrigine.

5) Ketamine: Which one of the following is false:

- a. It produces analgesia with hypnosis; however, the eyes remain open.
- b. It is derived from phencyclidine and block NMDA glutamate receptors .
- c. It increases blood pressure as well as intracranial and intraocular pressures.
- d. It may produce delirium and hallucinations on recovery.
- e. It increases respiratory rate and lowers PaCO₂

6) Which of the following is false about anti-epileptic drugs?

Select one:

- a. Carbamazepine blocks voltage dependent sodium channels in the inactivated state.
- b. Vigabatrin and valproate increase brain GABA level by inhibiting its catabolism.
- c. Levetiracetam blocks NMDA glutamate receptors.
- d. Ethosuximide blocks T-type calcium channels in thalamic neurons.
- e. Topiramate enhances endogenous GABA activity after binding to GABA-A receptors.

7) How many ventral roots arise from the cervical enlargement?

Select one:

- a. 9
- b. 10
- c. 8
- d. 32
- e. 18

8) All the following are true except?

Select one:

- a. Carbidopa increases the availability of levodopa to the CNS
- b. Concomitant administration of levodopa and monoamine reductase (MAO) inhibitors
- c. Selegiline decreases metabolism of dopamine and increases dopamine levels in brain
- d. Catechol-O-methyltransferase metabolizes levodopa to 3-O-methyldopa
- e. Rotigotine activates the dopamine receptors to in patients with advanced Parkinson's disease complicated by motor fluctuations and dyskinesias

9) Arachnoid Mater: Which is correct ?

Select one:

- a. it is closely adherent to the dura mater
- b. It is separated from the pia mater by a potential space filled by a film of fluid
- c. Descend into the deepest sulci
- d. The subarachnoid space below it contain the choroidal plexuses
- e. If widely separated from the pia mater will form subarachnoid cisternae

10) Which of the following matched pairs are NOT TRUE during circadian regulation and sleep?

Select one:

- a. Suprachiasmatic nucleus - Stimulates dorsomedial hypothalamus during the daylight
- b. Paraventricular nucleus and late yi hypothalamus - Stimulates T1 and T2 and sup. Cervical ganglion increases dramatically the melatonin during the daylight
- c. Glutamate from dorsomedial hypothalamus - Would increase hypocretin from the lateral hypothalamus during the daylight
- d. Tubermammillary nucleus - Stimulated during the daylight by hypocretin
- e. Ventrolateral preoptic nucleus - Stimulated during the night by decreasing suprachiasmatic activity and dorsomedial hypothalamus

11) A patient with headache, photophobia and projectile vomiting. Lumbar puncture showed low glucose and high protein (60mg/dl) and 2500 polymorphs (neutrophils). The likely causative organism is?

Select one:

- a. Herpes simplex virus 1
- b. Herpes simplex virus 2
- c. Mumps virus
- d. Enterovirus
- e. Streptococcus pneumonia

12) Thermal sensations?

Select one:

- a. Are evoked by all changes in environmental temperatures
- b. Are evoked by stimulation of thermo-sensitive pain receptors
- c. Are involved in regulation of metabolic activity
- d. Are transmitted by A beta sensory fibers
- e. Are transmitted a alpha sensory fibers

13) Which of the following is not a manifestation of neocerebellar syndrome :

Select one:

- a. Stamping gait.
- b. Kinetic tremors.
- c. Asthenia & rebound phenomenon.
- d. Hypotonia and pendular knee jerk.
- e. Nystagmus

14) Regarding FASD, all the following are found in fetus EXCEPT?

Select one:

- a. Small head circumference.
- b. Small eye opening.
- c. Thick upper lip.
- d. Small midface.
- e. Skin folds at corner of eye.

15) Which one of the following is false about isoflurane?

Select one:

- a. it has a pleasant smell.
- b. It has lower blood solubility than halothane
- c. it lowers blood pressure due to lowering of total peripheral resistance.
- d. It can be used with CO₂ absorption system (lime water) in the semi closed method
- e. it depresses respiration insignificantly.

16) Visceral pain is usually felt?

select one:

- a. Deeply in the diseased viscera
- b. In deep tissues close to the diseased viscera
- c. In skin areas that light overlie the diseased viscera
- d. In skin areas remote from the diseased viscera
- e. In skin area showing phenomenon of hyperalgesia

17) Which one of the following statements about sedative hypnotics is false?

Select one:

- a. Ramelteon needs few weeks to calm down patients with generalized anxiety disorder.
- b. Alprazolam acts quickly to terminate acute panic attacks.
- c. Diazepam acts shorter after a single dose than after repeated use for few days.
- d. Alkalinization of urine can enhance renal elimination of Phenobarbital.
- e. Buspirone produces its action by acting as partial agonist at 5-HT 1A receptors.

18) At adult, the spinal cord ends at?

Select one:

- a. L1/L2
- b. L2/L3
- c. L3/L4
- d. L4/L5
- e. Tip of the coccyx

19) The trapezoid body is present at the level of----- ?

Select one:

- a. Lower pons.
- b. Lower medulla
- c. Upper pons.
- d. Upper medulla.
- e. Middle pons.

20) All of the followings are derivatives of neural crest except?

Select one:

- a. Dura matter
- b. Pigment cells
- c. Otic ganglia
- d. Chromaffin cells of suprarenal medulla
- e. Schwann cells

21) An autopsy of brain biopsy revealed widespread hemorrhagic lesions involving the white matter, which of the following is mainly the leading cause?

Select one:

- a. Lobular hemorrhage.
- b. Vasculitis.
- c. Thromboemboli arise from carotid arteries.
- d. Fat emboli.
- e. Bone marrow emboli.

22) A patient presented to you with encephalitis, his family said they noticed psychiatric and personality changes. Lumbar puncture showed mainly lymphocytosis (500 cells/ mm³) and CT showed temporal lobe involvement, you should start treating the patient with?

Select one:

- a. Sancovir
- b. Acyclovir
- c. Lamivudine
- d. Remdesivir
- e. Ampicillin

23) Extends in the brainstem and continues in the spinal cord as sulcomarginal tract?

Select one:

- a. Medial lemniscus
- b. Lateral lemniscus.
- c. Fasciculus proprius.
- d. Medial longitudinal bundle.
- e. Trigeminal lemniscus.

24) All the following are true except?

Select one:

- a. Haloperidol and pramipexole antagonize the dopamine receptors and causes secondary parkinsonism
- b. Levodopa is a metabolic precursor of dopamine restoring dopaminergic system by enhancing synthesis of dopamine
- c. levodopa is actively transported into CNS and is converted to dopamine in brain
- d. Carbidopa diminishes metabolism of levodopa in gastrointestinal tract and peripheral tissues; thus, it increases availability of levodopa to CNS
- e. Levodopa has short half-life causing fluctuations in plasma concentration and may produce fluctuations in motor response

25) Child has one median eye and one cerebral hemisphere, What are the means?

Select one:

- a. Anencephaly
- b. Hydrocephaly
- c. Microcephaly
- d. Cycloopia
- e. Cranium bifidum

26) All the following about morphine are true EXCEPT?

Select one:

- a. Acts on M1 receptors and causes analgesia and euphoria.
- b. Acts on M2 receptors and causes respiratory depression.
- c. Should be given orally.
- d. Inhibit release of excitatory neurotransmitters.
- e. it high efficacy.

27) Dorsal column-medial lemniscus pathway, which of the following statements best describe it?

Select one:

- a. mediates light touch and pressure
- b. mediates unconscious proprioception.
- c. receives input from Merkel tactile disks
- d. First order neurons are located in dorsal root ganglia at all levels.
- e. Third-order neurons are located in the Posterior nucleus of the thalamus.

28) One of the following is Correct about central nervous system tumors?

Select one:

- a. They Comprise 40% of all pediatric tumors
- b. Neuronal tumors are usually higher grade
- c. NF2 gene on chromosome 22 is commonly mutated in ependymomas and meningiomas
- d. Rosenthal fibers are exclusively found in neoplastic lesions
- e. Molecular features are supplementary in the 2016 WHO classification of CNS tumors.

29) Which one of the following is false about benzodiazepines?

Select one:

- a. They increase entry of chloride ions into neurons acted upon by GABA.
- b. They can cause skeletal muscle relaxation.
- c. They can cause psychomotor slowing.
- d. they can reduce delusions and hallucinations in psychotic patients
- e. Use of large doses can induce sleep and cause anterograde amnesia.

30) The followings are blood supply and drainage of cerebellum except?

Select one:

- a. Superior cerebellar artery
- b. Anterior inferior cerebellar artery
- c. Posterior cerebral artery
- d. Venous drainage into the dural venous sinuses
- e. Posterior inferior cerebellar

31) The uncus is supplied by :

- a. Anterior cerebral artery
- b. Posterior cerebral artery
- c. Middle cerebral artery
- d. Internal carotid artery
- f. Charcot's artery

32) Which of the following is NOT CONSISTENT with Golgi tendon reflex?

Select one:

- a. Stretch reflex
- b. Inverse myotatic reflex h
- c. Autogenic inhibition
- d. Reciprocal activation
- e. Glycine hyperpolarize the contracting muscle

33) Transmitters in pain control system include all the following, except?

Select one:

- a. Serotonin
- b. Acetylcholine
- c. Enkephalin
- d. Endorphins
- e. Dynorphin

34) Proprioceptive sensations include all the following, except?

Select one:

- a. Position sense
- b. Equilibrium sense
- c. Movement sense
- d. Kinesthetic sense
- e. Muscle tension.

- 35) One of the following pairs between the central nervous system tumor and its distinctive histologic feature is wrongly matched?
Select one:
- a. Primary Central Nervous System Lymphoma: Perivascular Accentuation
 - b. Ependymoma: Cellular whorls
 - c. Oligodendroglioma: Fried egg appearance
 - d. Medulloblastoma: Homer Wright Rosettes
 - e. Pilocytic Astrocytoma: Hairlike processes
- 36) What is the Broca's area?
Select one:
- a. Area 39
 - b. Area 6
 - c. Area 44
 - d. Area 22
 - e. Area 8
- 37) All of the followings are nuclei of trigeminal except?
Select one:
- a. Spinal nucleus
 - b. Main sensory nucleus
 - c. Mesencephalic nucleus
 - d. Solitary nucleus
 - e. Motor nucleus to muscles of mastication
- 38) Align along axons and provide insulating layers of myelin in the brain and spinal cord-----
Select one:
- a. Microglia
 - b. Astrocytes
 - c. Ependymal cells
 - d. Oligodendrocytes
 - e. Schwann cell
- 39) The spinal cord begins?
Select one:
- a. AS a continuation of the upper end of medulla oblongata
 - b. As a continuation of the lower end of medulla oblongata
 - c. As a continuation of the pons
 - d. As a continuation of the midbrain
 - e. AS a continuation of the medulla oblongata

40) The most likely cause of recurrent meningitis in a patient with C5 complement deficiency is :

- a. Haemophilus influenza
- b. Klebsiella pneumonia
- c. Streptococcus pneumonia
- d. Neisseria meningitis
- e. Listeria monocytogenes

41) All the following are incorrectly combined (Lesion: the most common location), except?

Select one:

- a. intraparenchymal hemorrhage: Thalamus.
- b. Cerebral Amyloid Angiopathy: leptomeningeal arterioles.
- c. Berry (saccular) aneurysm: Posterior communicating artery.
- d. lacunar infarcts: Caudate nucleus.
- e. Primary Brain thrombosis: Middle cerebellar artery.

42) The visual area is Supplied by?

Select one:

- a. Anterior cerebral artery
- b. Posterior cerebral artery
- c. Middle cerebral artery
- d. Internal carotid artery
- e. Charcot's artery

43) All of the following are basal nuclei except?

Select one:

- a. Globus pallidus
- b. Amygdaloid nucleus
- c. Tapetum
- d. Claustrum
- e. Caudate

44) All of the following nerves carry parasympathetic except?

Select one: |

- a. Glossopharyngeal nerve
- b. Facial nerve
- c. Trochlear nerve
- d. Oculomotor nerve
- e. Mandibular nerve

45) Which of the following matched pairs are NOT TRUE regarding electrophysiology of the thalamus?

Select one:

- a. Tonic firing mode - During wakefulness
- b. Burst firing mode - During sleep
- c. Thalamic reticular neurons - hyperpolarizes the projection relay neurons thus the relay neurons will respond with burst mode when next stimulated
- d. Brainstem modulators receives Ach - Depolarizing the projection relay neurons thus the relay neurons will respond with tonic mode when next stimulated
- e. Low firing mode of cortical feedback - Ends up with the excitation of the cortex nucleus much greater than the inhibition in the reticular thalamic

46) What are the means of commissural fibers?

Select one:

- a. They connecting the cerebral cortex with the lower centers
- b. They connect parts of the cerebral cortex in the same hemisphere.
- c. They incoordination of the activities of the right and left cerebral hemisphere
- d. They connect parts of cerebral cortex of one hemisphere with the same part on opposite side
- e. They connecting the lower centers with the cerebral cortex

47) In the spinal cord, motor neuron cell bodies are located in-----?

Select one:

- a. Lamina II
- b. Lamina II
- c. Lamina V
- d. Lamina IX
- e. Lamina x

48) The following statements describe Ascending Spinal Tracts, which one is wrong?

Select one:

- a. Represent functional pathways
- b. They convey sensory information from soma or viscera to higher levels of the neuroaxis.
- c. Always consist of a chain of three neurons: first-, Second-, and third-order neurons.
- d. May decussate before reaching their final destination.
- e. Give rise to collateral branches that serve in local spinal reflex arcs.

49) Motor area of the cerebrum?

Select one:

- a. it lies on the superolateral surface
- b. The body is erect
- c. it is supplied by inferior cerebral artery
- d. The area of the hand is larger than the foot in the hand writer
- e. it gives origin to corticocerebellar tract

50) Which of the following regarding traumatic vascular lesions of the brain is correct?

Select one:

- a. The middle meningeal vein is vulnerable to injury and mostly affected in the epidural hematoma.
- b. The subdural hematoma may expand rapidly and constitutes a neurosurgical emergency. ©
- c. In children, both epidural and subdural hematomas are common and associated with skull fracture.
- d. The risk of repeat bleeding in subdural hematoma is greatest in the first few days after the initial hemorrhage
- e. The most symptoms associated with subdural hematoma are nonlocalizing neurologic manifestations.

51) Which of the following nuclei are motor?

Select one:

- a. Nucleus ambiguus
- b. Dorsal nucleus of the vagus
- c. Solitary nucleus
- d. Inferior vestibular nucleus
- e. Spinal nucleus of trigeminal

52) Which of the following matched pairs are NOT TRUE regarding NREM sleep?

Select one:

- a. First stage of sleep - Beta rhythm
- b. Second stage of sleep - Spindles and K complex
- c. Third Stage - Lower frequency and high voltage Delta rhythm
- d. First stage of sleep - Last 20 to 30 minutes
- e. Most sleep- Occurs in second stage of sleep

53) The pyramidal tract arises from?

Select one:

- a. Precentral gyrus
- b. postcentral gyrus
- c. Superior temporal gyrus
- d. Post calcarine Sulcus
- e. prefrontal area

54) Parasympathetic gray column is confined to spinal cord segments?

Select one:

- a. Third cervical to first thoracic
- b. Second cervical to first lumbar
- c. Ninth thoracic to first lumbar
- d. Second to fourth sacral
- e. Second to fourth lumbar

55) All following about antidepressants are TRUE EXCEPT?

Select one:

- a. SSRIs have replaced the use of TCAs and MAO inhibitors
- b. SNRIs effective in treatment of neuropathic pain
- c. imipramine is useful in treatment of bed-wetting in children
- d. MAO inhibitors use is limited because of complicated dietary restriction
- e. MAO inhibitors and SSRIs can be co-administered together

56) One of the following is not correct regarding Blood Brain Barrier (BBB)?

Select one:

- a. The endothelial cells in cerebral capillary are mostly non-fenestrated
- b. There is no paracellular diffusion due to presence of tight junctions between endothelial cells
- c. The basement membrane is continuous
- d. The astrocytic end feet play a vital role in development of BBB
- e. The pericytes have a role in the formation of tight junctions

57) The following may be useful in treatment of myoclonic epilepsy except?

Select one:

- a. Clonazepam.
- b. Oxcarbazine
- c. Levetiracetam.
- d. Lamotrigene.
- e. Topiramate.

58) The following side effects may be observed with halothane except?

Select one:

- a. Hypotension.
- b. Jaundice
- c. Diffusion anoxia
- d. ventricular premature contractions.
- e. Hypercapnia.

59) Regarding high level consumption of alcohol, all the following are true EXCEPT?

Select one:

- a. shrinking brain.
- b. Decreased metabolism of glucose.
- c. Addiction
- d. Euphoria,
- e. High blood pressure.

60) One of the following matches is WRONG?

Select one:

- a. SSRIs: Escitalopram
- b. SNRIs: Venlafaxine
- c. Atypical antidepressants: Phenelzine
- d. Tricyclic antidepressants: Amitriptyline
- e. MAO inhibitors: Selegiline

61) All the following are types of schizophrenia EXCEPT?

Select one:

- a. Catatonic type.
- b. Residual type.
- c. Disorganized type.
- d. Multiple personalities type. NF
- e. Paranoid type.

62) A 21 year-old-women incurs a blow to her head from a fall. She has loss of consciousness for 5 minutes. On examination her deep tendon reflexes are diminished, A head CT scan 6 hours later shows no abnormalities. She recovers over the next week with no neurological deficits, but cannot remember this event. Which of the following is the most likely consequence from her injury?

Select one:

- a. Epidural hematoma.
- b. Atherosclerosis.
- c. Contusion.
- d. Concussion.
- e. Subdural Hematoma.

63) Which is correct about the caudate nucleus?

Select one:

- a. Tail forms the floor of the inferior horn of the lateral ventricle
- b. Striate branches of the middle and anterior cerebral arteries are below to the head
- c. Head forms medial wall of the anterior horn of the lateral ventricle
- d. Tail curves downward and backward
- e. Body forms roof of the central part of the lateral ventricle

64) The cerebellum has the following except?

Select one:

- a. It occupies the greater part of the middle cranial fossa
- b. It is covered by the tentorium cerebelli
- c. It lies posterior to the 4th ventricle
- d. It is formed of a median part called the vermis and 2 cerebellar hemisphere
- e. It has 2 surfaces (Superior and inferior)

65) The vagus nerve exits from?

Select one:

- a. The anterior median fissure
- b. Upper part of the posterolateral sulcus
- c. Anterolateral Sulcus
- d. Lower part of the posterolateral Sulcus
- e. Middle part of the posterolateral Sulcus

66) Which nucleus passes in all of the brain stem?

Select one:

- a. Solitary nucleus
- b. Spinal nucleus of the trigeminal nerve
- c. vestibular nucleus
- d. Mesencephalic nucleus of the trigeminal nerve
- e. olivary nucleus

67) Which of the following matched pairs are NOT TRUE?

Select one:

- a. Motivation - Nucleus Accumbens and Septal nuclei
- b. Kluver Bucy syndrome - Mellow
- c. Rabies - Destruction Somatic neuron in the amygdala
- d. Benzodiazepines- Calming effect like alcohol
- e. Mania - Increase serotonin and Norepinephrine

68) Pain Sensation?

Select one:

- a. Is evoked by strong stimulation of specific receptors
- b. Produces reactions that increase transmission of pain impulses
- c. Arises from small-encapsulated receptors
- d. Occurs when the stimulus causes damage of the sensory receptors
- e. Always accompanied by referred pain.

69) All are correct regarding *N. fowleri* EXCEPT?

Select one:

- a. Causative agent of PAM.
- b. has trophozoite, flagellate and cyst forms in warm water.
- c. Best diagnosed by lumbar puncture and CSF examination.
- d. Reach the brain via blood stream.
- e. Flagellates can be seen in CSF.

70) Climbing fibers----- ? >

Select one:

- a. Arise from inferior olive and end in molecular layer of cerebral cortex
- b. arise from inferior olive and end in Granular layer of cerebellar cortex
- c. Arise from clark nucleus and end in molecular layer of cerebellar cortex
- d. arise from substantia gelatinosa and end in Polymorphic cell layer
- e. Arise from inferior olive and end in molecular layer of cerebellar cortex

71) The thin and convoluted outer layer of gray matter that covers the cerebral hemisphere is -----?

Select one:

- a. Meninges
- b. dura
- c. Thalamus
- d. Medulla oblongata
- e. Cerebral cortex

72) The following may be adverse effects of therapeutic doses of BDZs except?

Select one:

- a. Impaired cognition and judgement.
- b. Hangover.
- c. Respiratory depression.
- d. Enhancement of CNS depressant action of ethanol.
- e. Disinhibition.

73) More than 70% of ATP molecules generated in brain tissue are consumed in?

Select one:

- a. synthesis of neurotransmitters from glucose
- b. the conversion of pyruvate to lactate
- c. the restoration of ionic gradients which are dissipated due to induction and excitation particularly by $\text{Na}^+/\text{Ca}^{+2}$ ATPase pump
- d. pumping ions actively against their concentration gradients by Na^+/K^+ ATPase pump
- e. the reuptake of glutamate by astrocytes

74) All the following statements about CNS Stimulants are true except?

Select one:

- a. Amphetamines produce psychostimulation.
- b. Cannabis main active ingredient is delta-9-tetrahydrocannabinol.
- c. Modafinil is a wake promoting agent for narcolepsy and work shift sleep disorder.
- d. Cocaine inhibits noradrenaline & dopamine reuptake in brain.
- e. LSD blocks phencyclidine receptors in brain.

75) Cortico-spinal tract is characterized by the following, except?

Select one:

- a. it originate from area 4, 6 and Sensory areas.
- b. in the internal capsule it occupies the posterior half of posterior limb.
- c. in the mid brain it occupies the middle 3/5 of basis peduncle
- d. In the lower medulla motor decussation occurs
- e. Mainly control same side movements

76) The followings are seen in the inferior Surface of cerebellum except?

Select one:

- a. Tonsil
- b. vallecule
- c. Pyramid of vermis
- d. Nodule of vermis
- e. The lingula

77) One of the following is a function of Endorphin?

Select one:

- a. Major excitatory neurotransmitter
- b. Motivation
- c. Arousal
- d. Regulation of attention
- e. Act within pain pathways

78) Which of the following is NOT CONSISTENT with stretch reflex?

Select one:

- a. Myotatic reflex
- b. Reciprocal inhibition
- c. Monosynaptic reflex
- d. hypertonia and Babinski sign due to damage of corticospinal tract
- e. Slack reflex

79) The prophylaxis for close contacts of H. influenza meningitis case is?

Select one:

- a. Rifampicin
- b. Gentamycin
- c. Acyclovir
- d. Ampicillin
- e. Cefaclor

80) Which body part is represented most inferiorly within the primary motor cortex?

Select one:

- a. Face
- b. Hand
- c. Neck
- d. Abdomen
- e. Lower limb