

CNS

MED ARCHIVE



Pathology

1. Communicating hydrocephalus may occur as a complication of all the following conditions, EXCEPT:

- A. Child with ependymoma
- B. Severe meningitis (after treatment)
- C. Subdural hemorrhage (after treatment)
- D. Subarachnoid hemorrhage (after treatment)
- E. Head trauma (by accident)

Answer: A

2. A girl sustains a head injury and loses consciousness for about 2 minutes. She wakes up confused with headache and amnesia. CT scan is normal. All symptoms resolve except for ongoing amnesia. The most likely diagnosis:

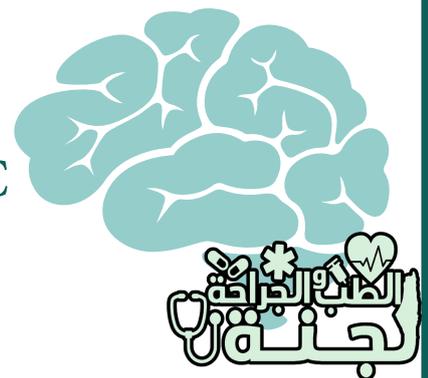
- A. Subdural hematoma
- B. Skull fracture
- C. Concussion
- D. Brain tumor
- E. Intracerebral hemorrhage

Answer: C

3. A 55-year-old patient suddenly develops a severe headache, nausea, and vomiting. CT scan shows blood in the basal cisterns due to a ruptured anterior circulation aneurysm. The likely diagnosis is:

- A. Epidural hematoma
- B. Subdural hematoma
- C. Subarachnoid hemorrhage
- D. Intracerebral hemorrhage
- E. Intraventricular hemorrhage

Answer: C



Microbiology

4. A 4-year-old boy is diagnosed with bacterial meningitis caused by *Neisseria meningitidis* and is receiving proper antibiotics. His parents are worried about his 6-year-old brother, who lives in the same household, and ask how to prevent him from getting infected. One of the following is the most appropriate preventive measure:

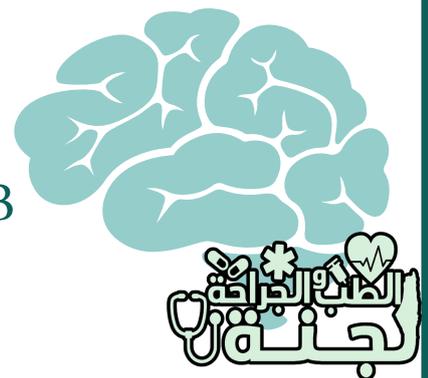
- A. Start him on a short course of amoxicillin to “strengthen his immunity” against meningitis
- B. Give him ciprofloxacin for a week because it is used for general infections in children
- C. Administer rifampin prophylaxis for close contacts to eradicate *Neisseria meningitidis* from the nasopharynx.
- D. No antibiotic is needed; just keep the child away from the patient and monitor for fever
- E. Give him an antiviral medication like acyclovir in case the meningitis is viral

Answer: C

5. A 35-year-old patient with AIDS presents with headache, fever, neck stiffness, nausea, and photophobia. CSF is obtained and examined microscopically, showing oval yeast cells surrounded by a clear capsule. Culture on Sabouraud Dextrose Agar shows mucoid colonies. Which of the following laboratory findings is characteristic of this organism?

- A. Catalase negative
- B. Urease positive
- C. Coagulase positive
- D. Oxidase positive
- E. Lactase positive

Answer: B



Microbiology

6. The infective stage of *Naegleria fowleri*:

- A. Cyst
- B. Trophozoite
- C. Flagellate
- D. Sporozoite
- E. More than one of the above

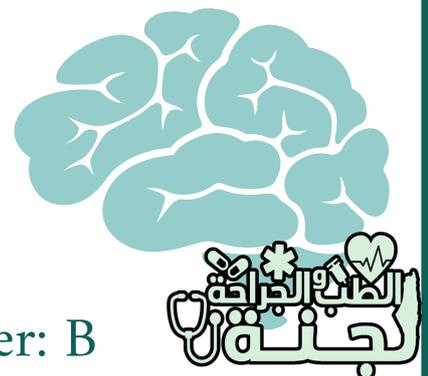
Answer: D

7. A 44-year-old man presents to the emergency department with a 24-hour history of fever, headache, and confusion. He also reports nausea and photophobia. His medical history includes hypertension and type 2 diabetes mellitus. Two weeks ago, he had an upper respiratory tract infection. He lives in Massachusetts and has not traveled recently. On examination, his temperature is 38.3°C (101°F). Neurological examination reveals nuchal rigidity. Lumbar puncture is performed, and cerebrospinal fluid (CSF) analysis shows:

- Opening pressure: 200 mm H₂O
- Glucose: 20 mg/dL
- Protein: 200 mg/dL
- White blood cells: 760 cells/ μ L (90% neutrophils, 10% lymphocytes)
- Red blood cells: 4 cells/ μ L

One of the following pathogens is most likely responsible for this patient's condition:

- A. *Cryptococcus neoformans*
- B. *Streptococcus pneumoniae*
- C. Enterovirus
- D. *Haemophilus influenzae*
- E. *Borrelia burgdorferi*



Answer: B

Anatomy

8. The lumbar segments lie opposite to:

- A. C1- C7
- B. T4- T6
- C. T10- T11
- D. T12- L1
- E. L2- L4

Answer: C

9. The fissure of Rolando is primarily supplied by:

- A. Anterior cerebral artery
- B. Middle cerebral artery
- C. Anterior and middle cerebral arteries
- D. Anterior and middle communicating arteries
- E. Basilar artery

Answer: C

10. About the anterior end of the thalamus, one is CORRECT:

- A. It forms the posterior boundary of the interventricular foramen of Monro, separating it from the column of the fornix
- B. It overhangs the lateral and medial geniculate bodies and superior colliculus
- C. It is separated from its fellow by the epithalamus
- D. It extends more posteriorly than the posterior limit of the third ventricle
- E. It forms the roof of the third ventricle

Answer: A

11. The inferior part of the vermis lies in a bottom of a depression called:

- A. Nodule
- B. Uvula
- C. Pyramid
- D. Inferior vermis
- E. Vallecula



Answer: E



Anatomy

12. One of the following statements about the fornix of the limbic system is INCORRECT:

- A. The posterior columns (crura) are continuations of the fimbria of the hippocampus.
- B. The body of the fornix lies beneath the corpus callosum and above the thalami.
- C. The anterior columns of the fornix continue with the fimbria of the hippocampus.
- D. The anterior columns end in the mammillary bodies and septal area.
- E. The fornix is the main efferent pathway of the hippocampus.

Answer: C

13. All of the following statements about the anterior horn of the lateral ventricle are correct EXCEPT:

- A. Anterior and roof are formed by the genu of the corpus callosum
- B. Floor is formed by the rostrum of the corpus callosum
- C. Medial wall is formed by the septum pellucidum
- D. Lateral wall is formed by the head of the caudate nucleus, separated from the lentiform nucleus by the internal capsule
- E. Body of caudate forms part of the anterior horn

Answer: E

14. The structure that lies superior to the pineal gland:

- A. Splenium of corpus callosum
- B. Superior colliculi
- C. Pulvinar of thalamus
- D. Posterior commissure
- E. Habenular commissure



Answer: A



15. One of the following statements regarding the posterior spinal arteries is FALSE:

- A. They are branches of the 4th part of the vertebral artery
- B. They descend through the foramen magnum
- C. They are located on each side
- D. They supply the posterior one-third of the spinal cord
- E. They are branches of the 3rd part of the vertebral artery

Answer: E

Embryology

16. All of the following statements about embryonic brain development are correct EXCEPT:

- A. Cyclopia is associated with a single lateral ventricle.
- B. Acanthencephaly involves failure of the vault of the skull to form properly.
- C. Folic acid deficiency may cause central nervous system defects.
- D. The third ventricle is derived from the diencephalon and gives rise to the thalamus.
- E. The lateral ventricles are derived from the metencephalon

Answer: E

Pharmacology

17. As per benzodiazepines, one of the following is correct:

- A. They cannot cross BBB nor placenta
- B. They have low plasma protein binding
- C. They are used less than barbiturates
- D. They do not form active metabolites
- E. They are well- absorbed orally

Answer: E



Pharmacology

18. As per anti-Parkinson drugs, all of the following are correct EXCEPT:

- A. Parkinson's disease is due to an imbalance between cholinergic and dopaminergic transmission
- B. Levodopa is given with carbidopa to reduce peripheral side effects
- C. Bromocriptine is a dopamine receptor agonist used mainly with levodopa
- D. Selegiline produces cheese–drug interaction due to tyramine accumulation
- E. Antimuscarinic drugs improve tremor and rigidity but not bradykinesia

Answer: D

19. As per anti-Parkinson drugs, all of the following are correct EXCEPT:

- A. Drug therapy for Parkinson's is palliative, not curative
- B. Amantadine increases dopamine release and decreases reuptake
- C. COMT inhibitors and MAO-B inhibitors are used as adjuncts to levodopa
- D. Chlorpromazine can be safely combined with bromocriptine in Parkinson's treatment
- E. Drug-induced parkinsonism (from phenothiazines) may be treated with antimuscarinic agents

Answer: D

20. The following anti-depressant used in smoking cessation:

- A. Amoxapine
- B. Mirtazapine
- C. Trazodone
- D. Venlafaxine
- E. Bupropion



Answer: E



Pharmacology

21. A 30-year-old patient is brought to the emergency department after an overdose of morphine. He is comatose, with pinpoint pupils and shallow, slow breathing. The first step should be:

- A. Administer naloxone immediately
- B. Give intravenous fluids
- C. Provide artificial respiration and oxygen supplementation
- D. Perform gastric lavage
- E. Start hemodialysis

Answer: C

22. A patient was started on Lamotrigine and develops skin rash and peeling. This serious side effect of this drug is called:

- A. Kidney stones
- B. Oligohidrosis
- C. Stevens-Johnson syndrome
- D. Dizziness
- E. Diplopia

Answer: C

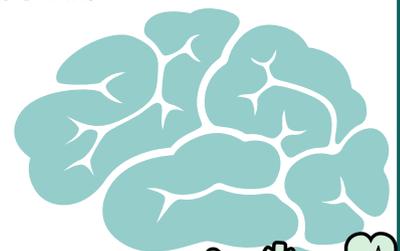
23. Regarding haloperidol, all of the following are false EXCEPT:

- A. Causes profound agranulocytosis
- B. Causes significant weight gain
- C. Has fewer motor side effects
- D. Can lead to noncompliance due to EPS
- E. Improves cognitive function

Answer: D

24. The primary mechanism of action of Phenytoin:

- A. Blocking of Na^+ channels
- B. Blocking of Cl^- channels
- C. Enhancing GABA metabolism
- D. Inhibiting glutamate synthesis
- E. Blocking Ca^{2+} channels



Answer: A



Histology

25. The name of lamina V of the superior colliculus:

- A. Stratum zonale
- B. Stratum griseum superficiale
- C. Stratum opticum
- D. Stratum album intermedium
- E. Stratum griseum profundum

Answer: D

26. All of the following statements about the gracile and cuneate fasciculi are correct EXCEPT:

- A. They transmit crude touch
- B. They transmit vibration sense
- C. They transmit fine touch
- D. They transmit pressure
- E. They transmit conscious proprioception

Answer: A

Biochemistry

27. A 35-year-old man presents to the emergency department with fever, headache, and neck stiffness for the past 12 hours. He also reports nausea and photophobia. Lumbar puncture is performed, and cerebrospinal fluid (CSF) analysis shows:

- WBC count: 1,200 cells/ μ L
- Neutrophils: 90%
- Lymphocytes: 10%
- Glucose: low
- Protein: elevated

This type of meningitis is most likely:

- A. Bacterial meningitis
- B. Viral (aseptic) meningitis
- C. Tubercular meningitis
- D. Fungal meningitis
- E. Parasitic meningitis



Answer: A



Biochemistry

28. One neurotransmitter is mainly affected by monoamine oxidase inhibitors (MAOIs):

- A. Dopamine
- B. Acetylcholine (ACh)
- C. Serotonin
- D. Glutamate
- E. GABA

Answer: C

29. All of the following are true about the fate of excess 4.4 mmol of glucose, EXCEPT:

- A. Component of BBB.
- B. Utilized in the synthesis of brain neurotransmitters.
- C. Formation of glycolipids and glycoproteins in neural cells.
- D. Formation of glycogen in astrocytes.
- E. Formation of lactate.

Answer: B

30. One of the following does not happen in the brain:

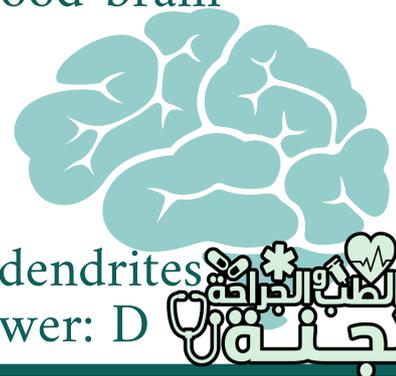
- A. Pyruvate convert to lactate
- B. Pyruvate convert to acetyl-COA
- C. Lactate convert to pyruvate
- D. Glucose phosphorylation to G6P
- E. G6P dephosphorylation to glucose

Answer: E

31. One of the following GLUT isoform- cell type pairings is INCORRECT:

- A. 55-kDa GLUT1 – Endothelial cells of the blood-brain barrier
- B. 45-kDa GLUT1 – Astrocytes
- C. GLUT3 – Neurons
- D. GLUT5 – Neurons
- E. GLUT4 – Neuronal cell body and proximal dendrites

Answer: D



Physiology

32. All of the following are functions of the cerebellum EXCEPT:

- A. Equilibrium
- B. Balance
- C. Coordination of voluntary movements
- D. Pain and temperature perception
- E. Muscle tone regulation

Answer: D

33. All of the following statements about alpha waves are true EXCEPT:

- A. Dominant waves in awake adults at rest with eyes closed
- B. Voltage around $50 \mu\text{V}$
- C. Frequency 8–13 Hz
- D. Most marked in occipital regions
- E. Mostly found in children

Answer: E

34. A patient undergoes a bilateral lesion of the amygdala. Which of the following is the most likely consequence?

- A. Loss of voluntary movement
- B. Loss of fear and impaired emotional responses
- C. Loss of vision
- D. Loss of speech comprehension
- E. Loss of coordination

Answer: B

35. Electrical stimulation of the posterior and lateral nuclei of the hypothalamus primarily causes:

- A. Activation of the reward center
- B. Stimulation of feeding behavior
- C. Initiation of defensive behaviors
- D. Promotion of sleep
- E. Induction of sexual behavior



Answer: C



Miscellaneous

- Lowest density > Internal pyramidal
- Micro one correct ? Ambe > skin lesion
- Posterior cerebral art all of the following except 3 ولا كان ال 3
4 الغلط ؟

