Cerebellum
Get the balance right

Integrated Neuro + Rheumat 28-08-2025

Dr. Zainab Vora

1. What is not a feature of myasthenia gravis among the following?

A. Decremental response on RNS
B. Areflexia
C. Normal pupillary reflex
D. Improvement of Inj.Edrophonium

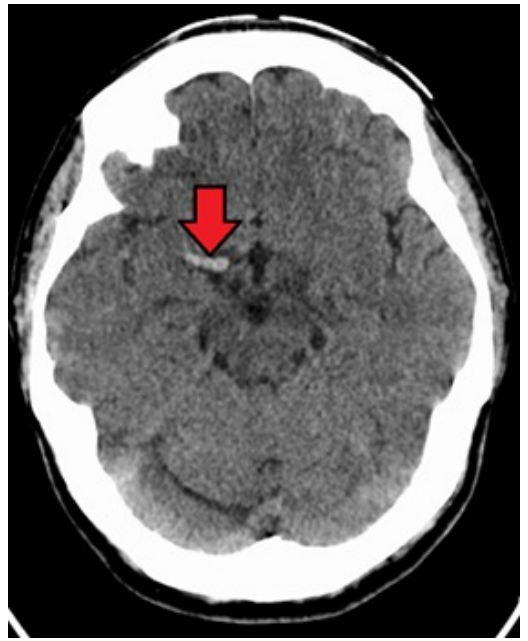
2. A patient presents with left-sided facial paralysis and weakness for the past 1 hour. Her blood pressure is 160/100 mmHg and CT is shown below. What would be your next step?

A. CT angiogram

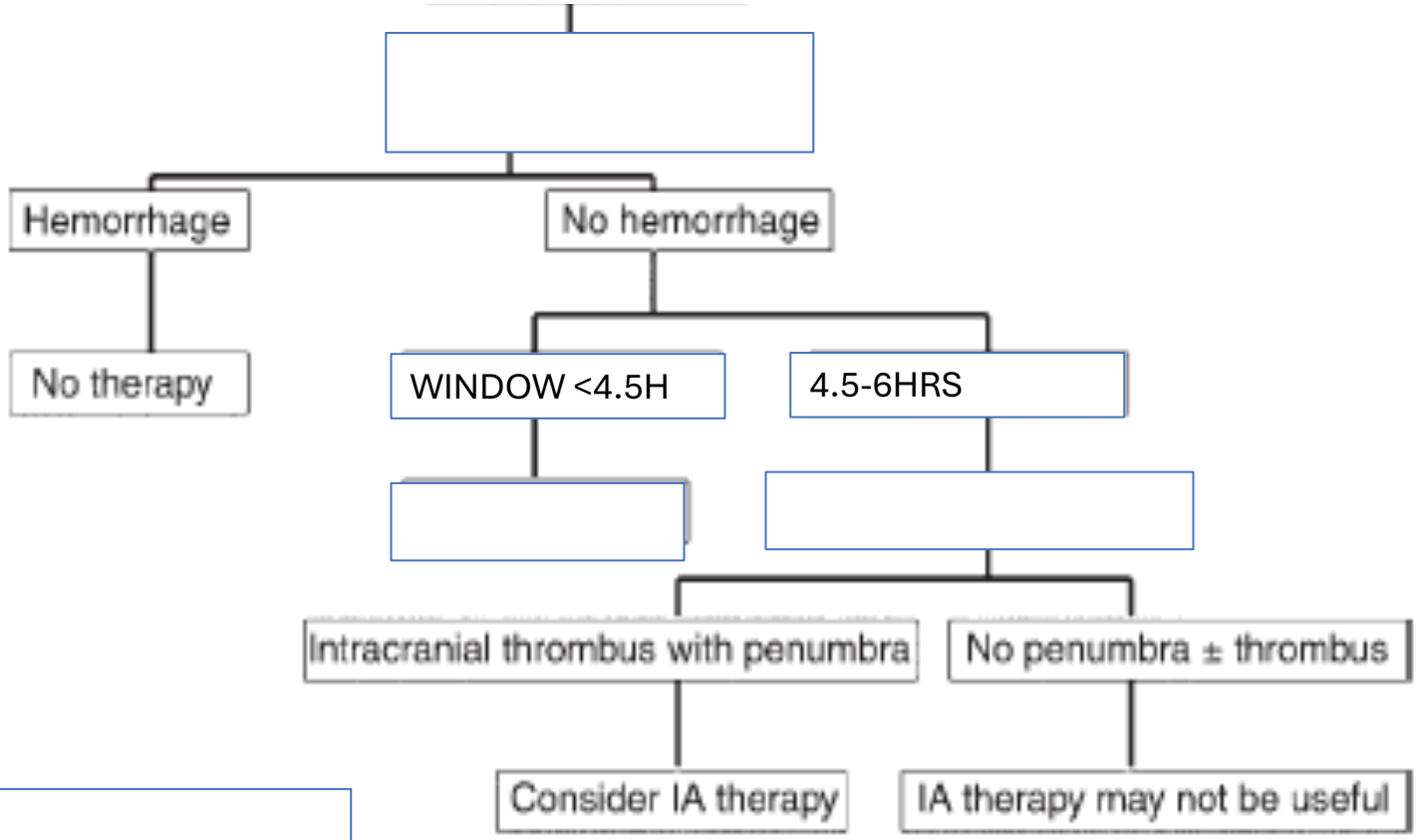
B. Start on aspirin + clopidogrel

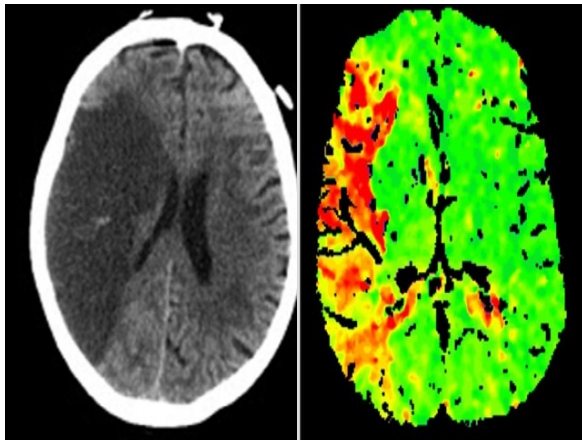
C. Intravenous thrombolysis

D. IV Labetalol



STROKE-APPROACH





BP > 185/110
Bleeding diathesis
Recent head injury or ICH
Major surgery in preceding 2 weeks
GI bleed in 3 weeks
Recent MI

3. All of the following are the core clinical features for the diagnosis of Lewy body dementia except:

A. Fluctuating cognition

B. Rigidity and pill-rolling tremors

C. Visual hallucinations

D. Autonomic dysfunction

Core Features of LBD
- Fluctuating cognition/alertness
- Recurrent, well-formed visual hallucinations
- REM sleep behavior disorder (RBD)
- Spontaneous Parkinsonism

Supportive and Associated Findings
- Autonomic dysfunction
- Depression, apathy, anxiety
- Dysphagia

4. Thrombolysis can be considered in all these conditions, except?

A. ASPECTS score >7
B. Blood pressure of more than 185/110mmHg
C. Ischemic stroke within 2 hours
D. Onset of symptoms <4 hours

5. A 19-year-old man is brought to the emergency department after being stabbed in the back. Neurological examination demonstrates the absence of motor activity in all muscle groups of the right lower extremity as well as decreased muscle tone. Left leg motor function is normal. Right patellar reflex, Achilles reflex, and Babinski sign are absent. There is loss of light touch and proprioception below the right costal margin. Pinprick sensation is absent below the level of umbilicus on the left side. Which of the following is the most likely location of this patient's injury?

A. Anterior spinal artery injury at T8

B. Right spinal transection at T10

C. Left spinal hemisection at T8

D. Right spinal hemisection at T8

6. A 27-year-old man presents with four days of progressive, bilateral, lower extremity weakness and dysesthesia. The patient denies any history of trauma, but states that he stayed home from work last week because of fever accompanied by diarrhea. Neurologic examination demonstrates the absence of reflexes in the lower extremities with no cranial nerve deficits. What is the best therapy for this patient's condition?

A. Plasmapheresis

B. Glucocorticoids

C. Acetaminophen

D. Radiation therapy

7. 34-year-old man is evaluated in the clinic due to difficulty walking over the past 2 weeks. His symptoms have resulted in several recent falls. The physician asks him to stand with his feet close together, arms to the sides, and eyes closed. This maneuver most likely tests for abnormalities in which of the following?

A. Cortical sensory integration

B. Gait

C. Motor coordination

D. Proprioception

8. A 29-year-old woman comes to the OPD for treatment of anxiety that has worsened over the past year. She says, "My anxiety just comes out of the blue; one way or another, I'm anxious all the time. An anxiety disorder is diagnosed, and fluoxetine is prescribed. The patient's anxiety begins to improve over the next 4-6 weeks. The physician explains that the medication inhibits the reuptake of a neurotransmitter released by a specific set of neurons. These neurons are likely part of which of the following structures?

A. Caudate nucleus

B. Locus ceruleus

C. Nucleus basalis of Meynert

D. Raphe nuclei

9. All of the factors would suggest a higher risk for a patient with TIA developing stroke in the future according to ABCD2 scoring except?

A. Age 65 years

B. Duration of symptoms 5 mins

C. BP 140/90mm Hg

D. Diabetes

$ABCD^2$ score	Points
Age > 60 years	1
BP = 140/90 mmHg at initial evaluation	1
Clinical features of the TIA	
Speech disturbance without weakness, or	1
Unilateral weakness	2
Duration of symptoms	
10–59 min, or	1
>60 min	2
Diabetes mellitus in patient's history	1

10. A patient presents with vertigo, diplopia, hoarseness, dysphagia and left Horner's syndrome associated with numbness of the left face and right-side limbs. Which artery is affected in this patient?

A. Posterior inferior cerebellar artery
B. Anterior inferior cerebellar artery
C. Superior cerebellar artery
D. Basilar artery

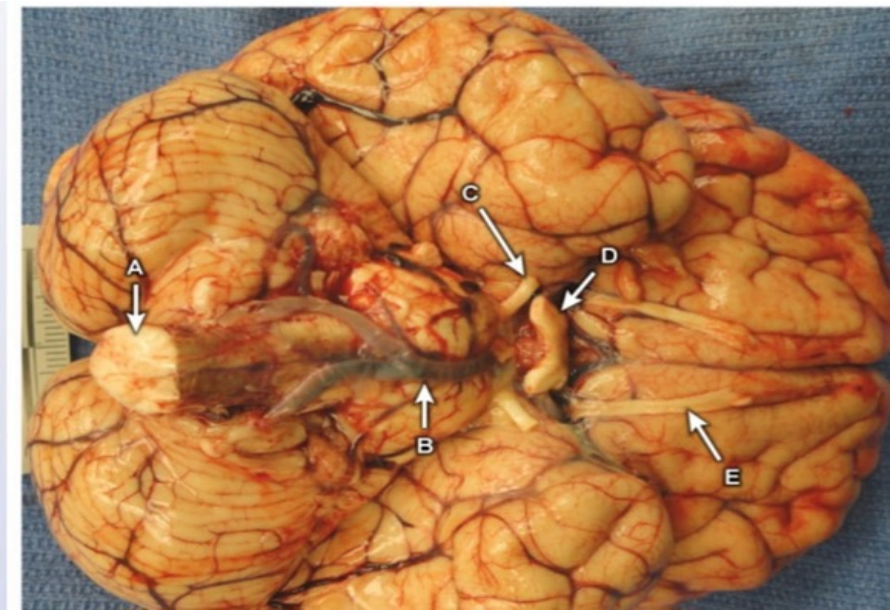
11. 24-year-old man is brought to the emergency department due to seizures. He has had 2 days of worsening fever, headache, and vomiting. Physical examination shows signs of meningeal irritation. The patient rapidly becomes comatose and dies 48 hours later despite aggressive medical care. Autopsy examination shows congested leptomeninges with fibrinopurulent exudate. Microscopy reveals numerous ameba in the exudate and brain tissue. Which of the following is the most likely portal of entry of this pathogen into the CNS?

A. A

B. B

C. C

D. E



12. A 62-year-old, right-handed man is evaluated for an episode of left leg weakness that spontaneously resolved within 30 minutes of onset. The patient also has had transient vision loss in the right eye. Medical history is significant for hypertension and diabetes mellitus. Evaluation reveals an atherosclerotic plaque in the extracranial portion of the supplying artery. During percutaneous stenting, the vascular catheter is inserted into the right common femoral artery and gradually advanced to the level of the aortic arch. Which of the following is the most likely path of the catheter before stenting of the culprit lesion can be performed?

A. Aorta - brachiocephalic artery - common carotid artery - external carotid artery
B. Aorta - brachiocephalic artery - common carotid artery - internal carotid artery
C. Aorta - common carotid artery - external carotid artery
D. Aorta - common carotid artery - internal carotid artery

13. Treatment of choice for an acute attack of cluster headache is:

A. Oral sumatriptan

B. Subcutaneous sumatriptan

C. 100% oxygen at 6 L/minute

D. Propranolol

14. A 38-year-old hospitalized woman is evaluated for new-onset confusion. The patient has a prolonged history of Crohn disease. Pupils are equal and reactive to light. Abduction of the right eye is limited and elicits bilateral horizontal nystagmus. Motor strength and deep tendon reflexes are normal throughout. Finger-to-nose and heel-to-shin testing are normal, but the gait is wide based. Which of the following is the most likely cause of this patient's neurologic symptoms?

A. Vitamin B12 deficiency

B. Thiamine deficiency

C. Folate deficiency

D. Cerebellar dysfunction

15. A 5-year-old boy is brought to the emergency department due to recurrent, generalized tonic-clonic seizures over the past 24 hours. He takes no medications and has no family history of epilepsy. The patient's temperature is 39.4 C (103 F), blood pressure is 110/70 mm Hg, pulse is 112/min, and respirations are 10/min. During the examination, the patient suddenly develops sustained, generalized tonic-clonic convulsions without fully regaining consciousness between episodes. Which of the following describes the mechanism of action of the most appropriate initial therapy for his seizures?

A. Blockade of presynaptic voltage-gated calcium channels

B. Blockade of presynaptic voltage-gated sodium channels

C. Enhanced postsynaptic chloride influx

D. Inhibition of vesicle fusion and neurotransmitter release

16. 74-year-old woman is brought to the emergency department by her son after he found her acting strangely. She was asking to open the window blinds, even though the blinds were already open and was bumping into objects when walking around her home. The patient insists that her vision is fine and came to the hospital upon her son's insistence. Bilateral direct and consensual pupillary reflexes are normal. On confrontation visual field testing, she reports the wrong number of fingers in all visual quadrants. The patient indicates the wrong direction when asked to point to the door and gives an incorrect visual description when asked to describe the physician. This patient most likely has an infarction involving the brain regions supplied by which of the following arteries?

A. Anterior cerebral artery

B. Basilar artery

C. Ophthalmic artery

D. Posterior cerebral artery

17. True about electroencephalogram (EEG) is all except:

A. 10% of the normal population can have epileptiform discharges.
B. Scalp EEG may be helpful in localizing frontal lobe epilepsy.
C. Doing EEG is not mandatory for the diagnosis of seizures.
D. Progressive multifocal leukoencephalopathy shows triphasic and slow waves.

18. 34-year-old woman with sleep problems comes to the OPD. Over the last year, she has had increasing difficulty falling asleep at night and is exhausted during the day. The patient does not use alcohol, tobacco, or illicit drugs. She has a family history of heart disease and depression. The patient has failed a number of nonpharmacological approaches, including cognitive-behavioral therapy for insomnia. She requests pharmacologic treatment and is prescribed a short course of zolpidem. Which of the following is the most likely mechanism of action of this medication?

A. Dopamine receptor antagonism

B. GABA receptor agonism

C. Histamine receptor antagonism

D. Melatonin receptor agonism

19. Which of the following does not help in the localization of lesions in the spinal cord?

A. Contralateral hemiplegia

B. Fasciculation at the level of lesion

C. Babinski positive

D. Bladder involvement

20. A patient presents with fever, neck rigidity and altered sensorium. The resident was instructed to perform a lumbar puncture on this patient. What is the correct order of managing this patient?

1. **Place IV cannula and give fluids at 40 mL/h**
2. **Start injection ceftriaxone**
3. **Fundoscopy**
4. **Perform guarded lumbar puncture**

A. 1, 2, 4, 3

B. 1, 4, 3, 2

C. 4, 3, 2, 1

D. 1, 3, 4, 2

21. A highly agitated 54-year-old man is brought to the emergency department by his family because he is unable to effectively communicate. He speaks clearly and with conviction but his sentences are incomprehensible. He does not appear to understand the doctor's questions, does not follow oral or written instructions, and cannot repeat simple phrases. Branch occlusion of which of the following arteries is most likely responsible for this patient's condition?

A. Right Middle cerebral artery-superior division

B. Right Middle cerebral artery-inferior division

C. Left Middle cerebral artery-superior division

D. Left Middle cerebral artery-inferior division

22. What would be seen if the central part of the cord was involved?

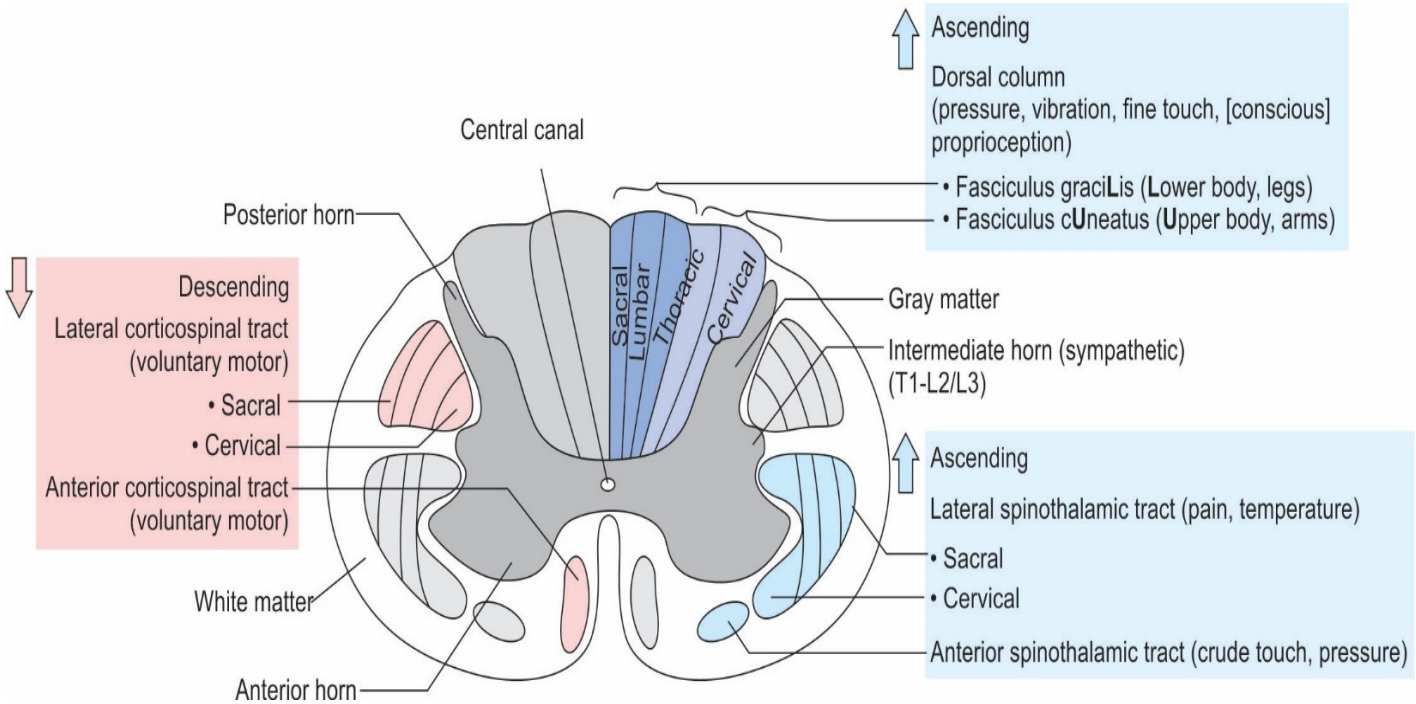
1. LMN lesion of trunk and UMN of lower limbs.
2. UMN lesion of trunk and LMN of lower limbs.
3. Bladder and bowel involvement.
4. Posterior tract involvement.

A. 1 and 4

B. 2 and 3

C. 2 and 4

D. 1 and 3


Ascending
Dorsal column
(pressure, vibration, fine touch, [conscious] proprioception)
• Fasciculus graciLis (Lower body, legs)
• Fasciculus cUneatus (Upper body, arms)
Central canal
Posterior horn
Sacral
Lumbar
Thoracic
Cervical
Gray matter
Intermediate horn (sympathetic)
(T1-L2/L3)
Descending
Lateral corticospinal tract
(voluntary motor)
• Sacral
• Cervical
Anterior corticospinal tract
(voluntary motor)
Ascending
Lateral spinothalamic tract (pain, temperature)
• Sacral
• Cervical
White matter
Anterior spinothalamic tract (crude touch, pressure)
Anterior horn

23. Which of the following types of headaches requires further evaluation?

1. **Duration > 4 hours**
2. **Thunderclap nature**
3. **Associated Low GCS**
4. **Associated Blurring of vision**

A. 2, 3

B. 2, 4

C. 2, 3, 4

D. 1, 2, 3, 4

1. **Systemic symptoms** (fever, weight loss)
2. **Systemic disease** (cancer, HIV, immunosuppression)
3. **Neurologic symptoms/signs** (focal deficits, altered GCS, papilledema)
4. **Onset sudden** (thunderclap)
5. **Onset after age 50**
6. **Pattern change** (new or progressive)
7. **Positional** headache (worse lying vs standing → CSF leak, ICP)
8. **Precipitated by Valsalva/exertion** (cough, sneeze, exercise → raised ICP, aneurysm)
9. **Papilledema**
10. **Pregnancy / postpartum** (risk of CVT, eclampsia, pituitary apoplexy)

24. A 44-year-old man comes to the OPD due to several weeks of difficulty walking and frequent falls. He also reports episodes of sharp, stabbing pain in his extremities. Deep-tendon reflexes are absent at the knee and ankle bilaterally. Proprioception and vibration sensation are reduced throughout the lower extremities. He has a wide-based gait and a positive Romberg sign. Which of the following diagnostic findings is most likely associated with this patient's current symptoms?

A. Cerebrospinal fluid (CSF) culture growing acid-fast bacilli

B. CSF PCR positive for herpes virus

C. Encapsulated yeasts on CSF India ink preparation

D. Reactive VDRL tests on CSF samples

25. 35-year-old woman with a history of migraines is evaluated due to a recent increase in headache frequency and severity. She has had no focal weakness, sensory loss, vision changes, or seizures. Neuroimaging reveals a small aneurysm arising from the segment of right internal carotid artery within the cavernous sinus. If this patient's aneurysm continues to expand, which of the following findings is most likely to be observed?

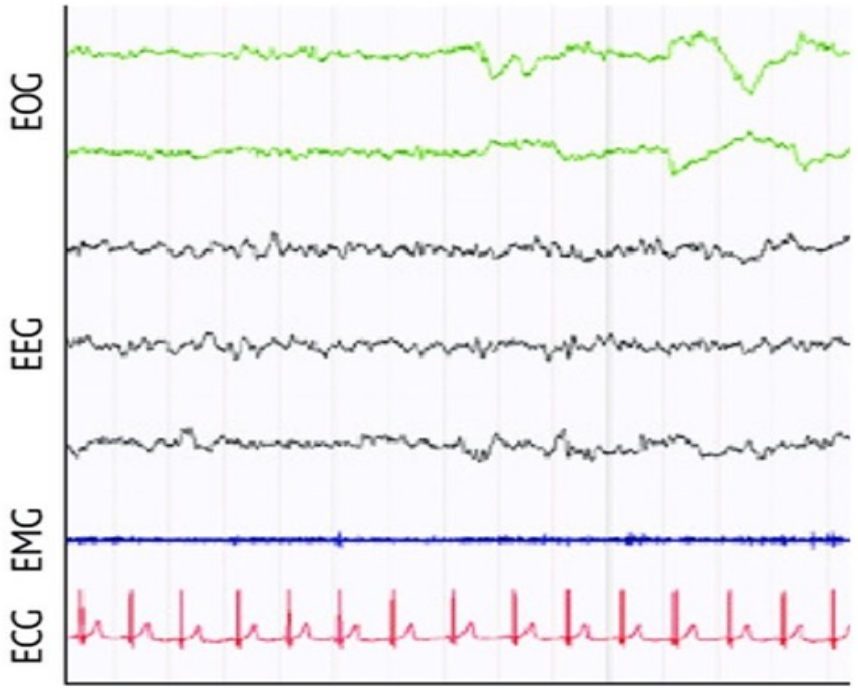
A. Deviation of the tongue to the right when protruded

B. Inability to contract the right orbicularis oculi muscle

C. Vision defect affecting the left half of the visual field

D. Weakness of the right lateral rectus muscle

26. Identify the stage of sleep based on the EEG shown below:



A. NREM1

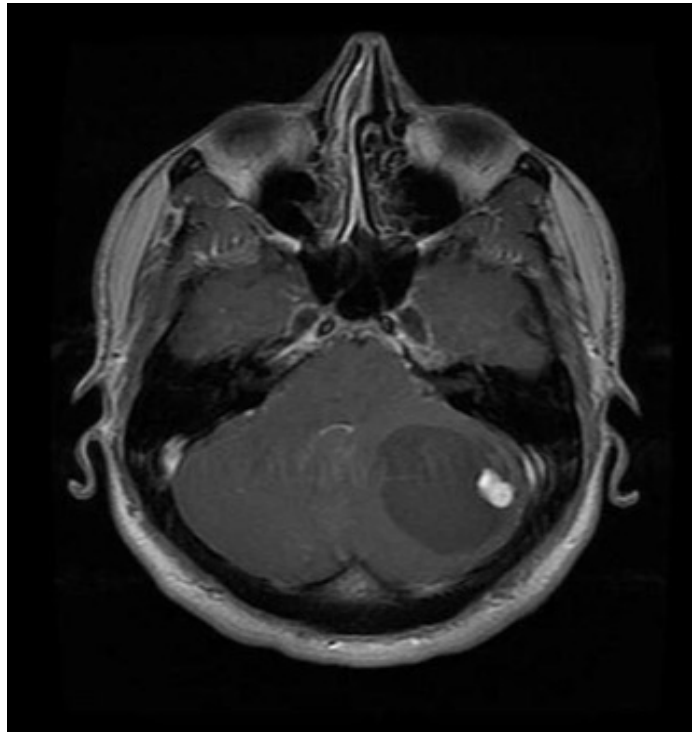
B. NREM2

C. NREM3

D. REM

27. Which of the following findings is most likely to be seen on physical examination of this patient?

A. Left dysdiadochokinesia
B. Left Horner syndrome
C. Right hemiparesis
D. Right hemisensory loss



28. 55-year-old woman is brought to the OPD by her husband for evaluation of strange behavior. She has been spending large amounts of money to buy expensive clothes and jewelry. She usually drinks 1 or 2 glasses of wine on weekends but lately has been drinking 2 or 3 glasses almost every day. This patient's condition is most likely due to abnormal accumulation of which of the following?

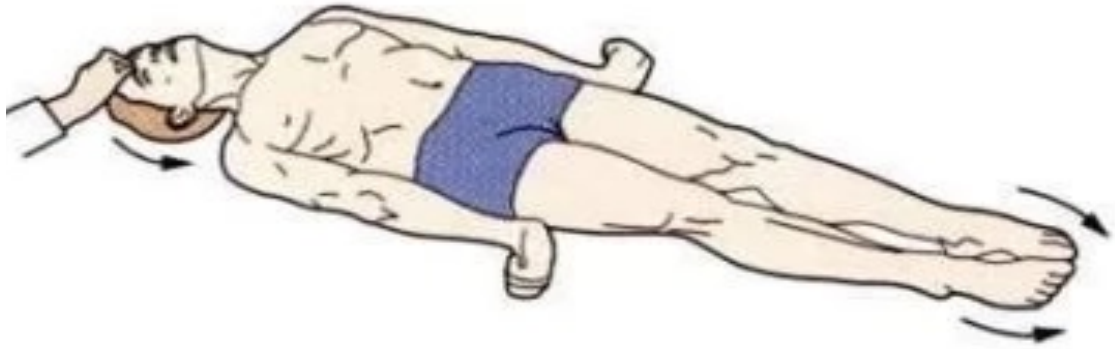
A. Ataxin

B. Beta-amyloid

C. Prions

D. Ubiquitinated TDP-43

29. The posture shown in image is seen in :



A. Upper pons hyperactivity
B. Upper midbrain hyperactivity
C. Upper pons damage
D. Upper midbrain damage

Posture	Level of Lesion	Tracts affected	Motor Manifestation
Decorticate	Above red nucleus (midbrain)	Corticospinal tract disrupted above red nucleus; rubrospinal active	Upper limbs flexed (rubrospinal facilitation), lower limbs extended
Decerebrate	At or below red nucleus	Corticospinal and rubrospinal tracts disrupted	Upper and lower limbs extended (vestibulospinal dominance)

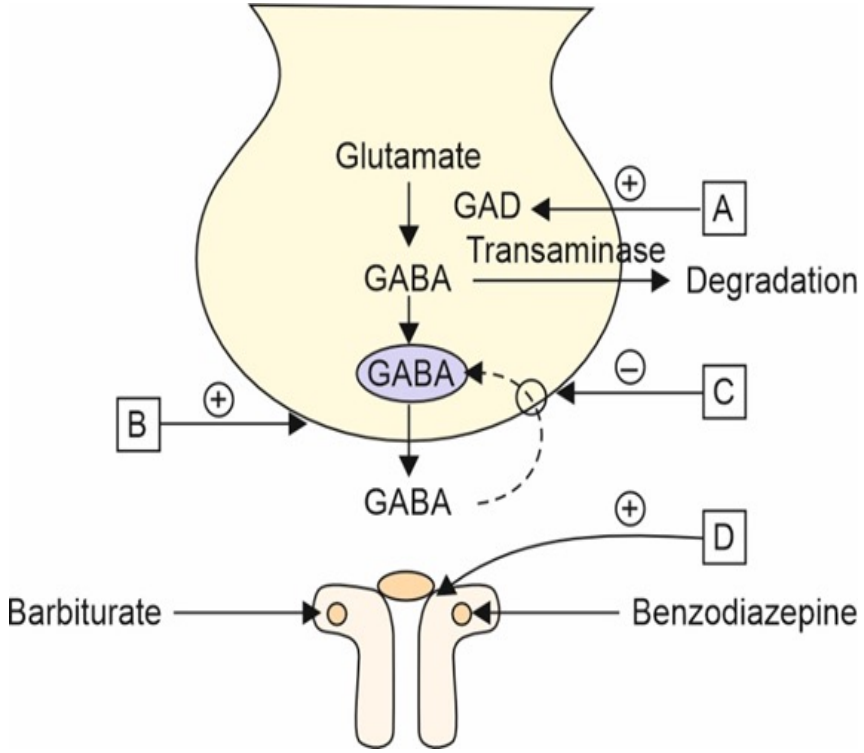
30. In the figure shown below, mechanism of action of valproate is best represented by:

A. A

B. B

C. C

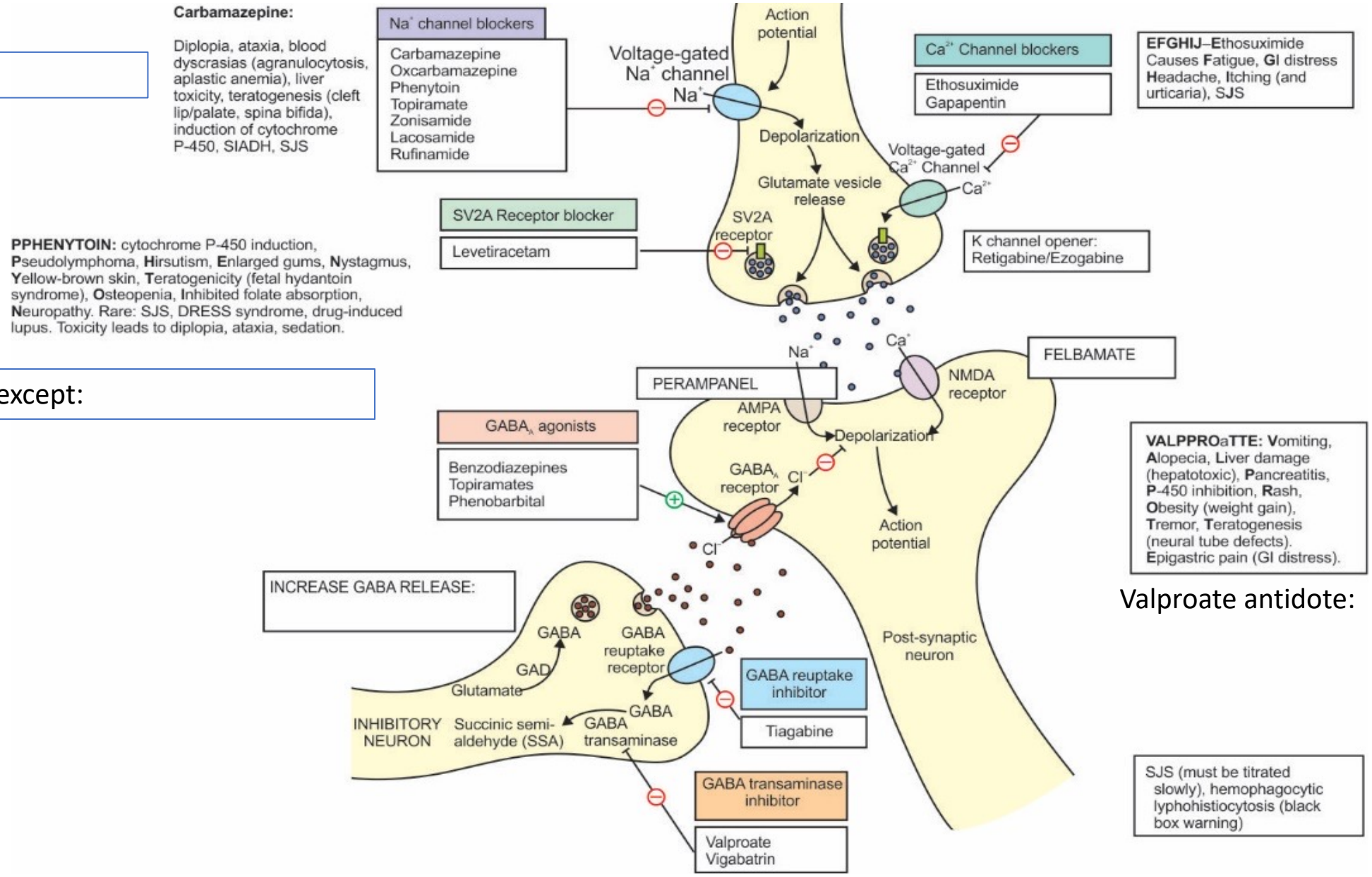
D. D



ANTI-EPILEPTIC DRUGS

S/e stones / ACG:

All CYP inducers except:



31. A 5 year old patient presents to the OPD with dysphagia, dysarthria, and dysphonia. On examination, brisk jaw jerk is seen. What is the possible localisation in this patient?

A. Corticospinal tracts

B. Corticobulbar tracts

C. Mesencephalic trigeminal nucleus

D. V3 nerve

	Pseudobulbar (UMN: 5,7,10,11,12)	Bulbar (LMN: 9,10,11,12)
Gag reflex		
Jaw jerk		
Tongue		
Speech	Laboured/spastic	Nasal twang Nasal regurgitation

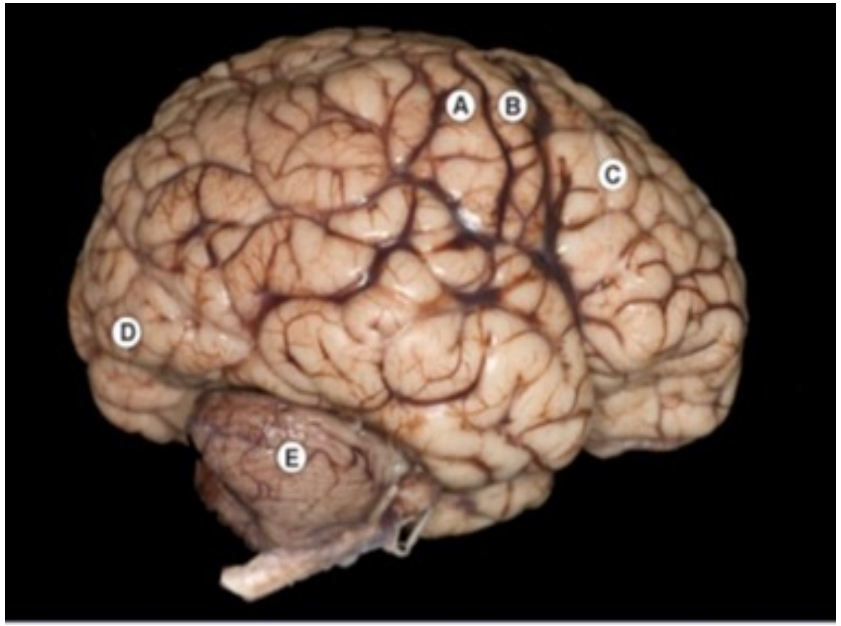
32. 65-year-old man with a history of atrial fibrillation comes to the office due to numbness of his left hand for the past 3 weeks. When the eyes are closed, he is unable to recognize the letters written on his left hand with a stylus. Muscle strength is normal in all extremities. Deep tendon reflexes are 2+. Gait is normal. This patient most likely has a lesion in which of the following locations of the brain?

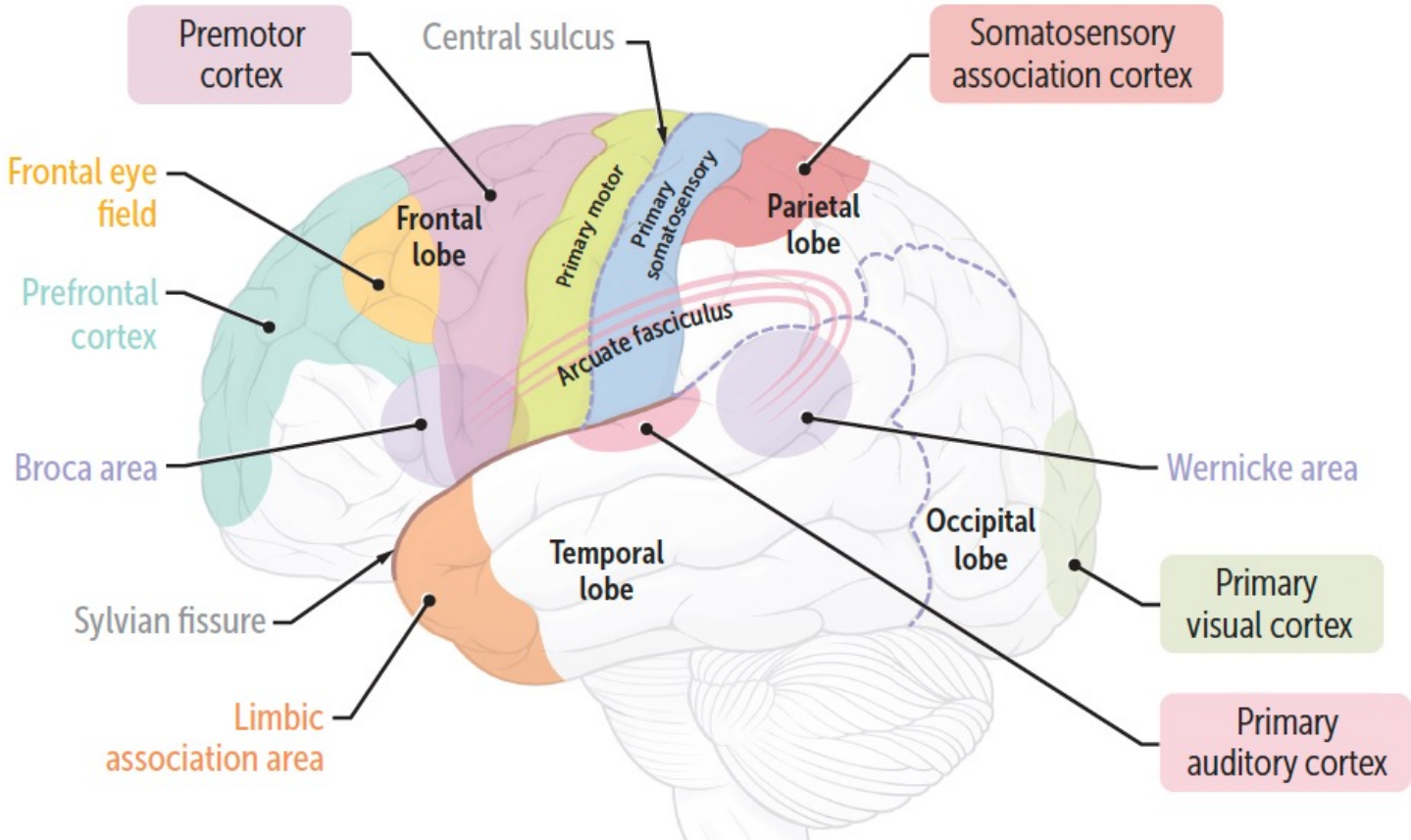
A. A

B. B

C. C

D. D




Premotor cortex
Central sulcus
Somatosensory association cortex
Frontal eye field
Frontal lobe
Primary motor
Primary somatosensory
Parietal lobe
Prefrontal cortex
Arcuate fasciculus
Broca area
Wernicke area
Occipital lobe
Temporal lobe
Primary visual cortex
Sylvian fissure
Limbic association area
Primary auditory cortex

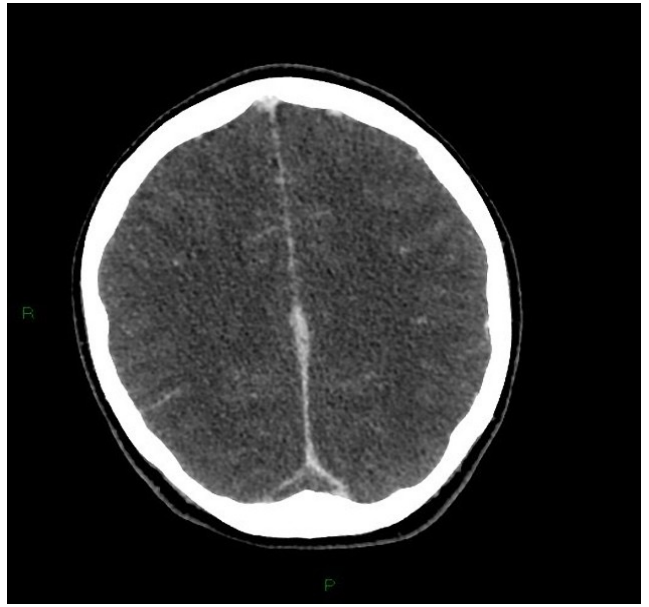
33. A 30-year-old lady who is 2 weeks postpartum presents with headache, and acute episode of generalized seizures. The contrast-enhanced CT of the head is shown below. What is the drug of choice for the acute management of her condition?

A. IV Labetalol

B. IV MgSo4

C. LMWH

D. Aspirin



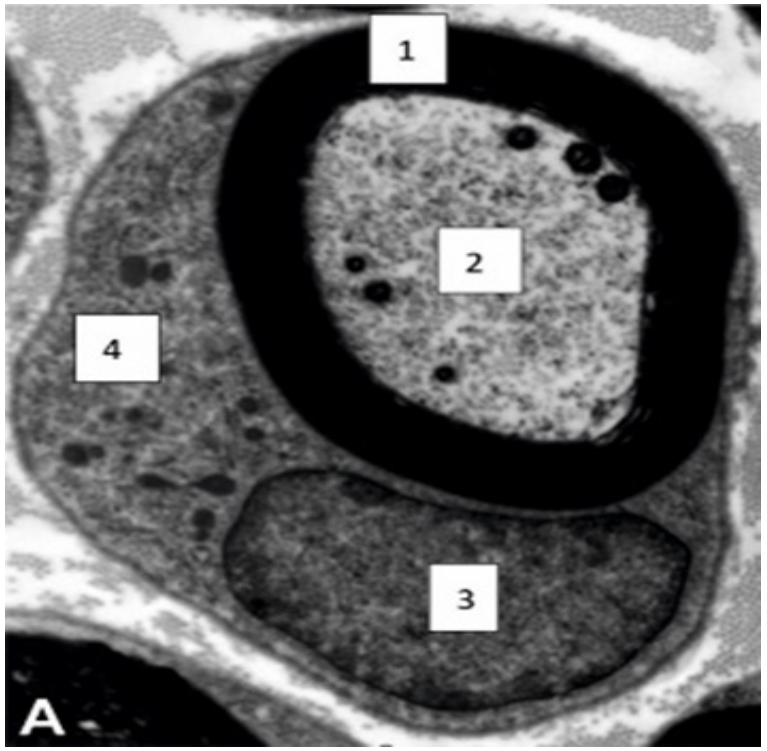
34. An electron microscopic picture of a cut section of a nerve fiber is given. What is the most commonly affected area in Guillain-Barre syndrome?

A. 1

B. 2

C. 3

D. 4



35. A 5-year-old boy has developed persistent food-seeking behavior over the past few months. His mother initially thought that the boy was undergoing a growth spurt, but despite how much she fed him he never seemed satisfied. The patient has also started complaining of a headache and nausea in the morning. His physical examination is significant for BMI of 32 kg/m2. This patient's food-seeking behavior could be explained by a lesion causing hyperactivity of which hypothalamic nucleus?

A. Anterior

B. Lateral

C. Supraoptic

D. Ventromedial

36. If you see the word "yellow," you'll likely recognize "banana" faster than "television" because yellow and banana are more closely linked in memory. Which of the following structures is this concept dependent on?

A. Amygdala

B. Hippocampus

C. Neocortex

D. Striatum

37. What would be the likely “classical” presentation of this patient?

A. Romberg sign with loss of DTR
B. UMN + LMN features
C. Cape like distribution
D. Only preserved dorsal column function

38. Which of the following features are typically associated with delirium?

1. **Impaired consciousness**
2. **Altered sleep-wake cycle**
3. **Normal EEG**
4. **Carphologia**
5. **Autonomic Dysfunction**

A. 1, 2, 3, 4, 5

B. 2, 3, 5

C. 1, 3, 5

D. 1, 2, 4, 5

39. A motorcyclist suffered a head injury 6 months back and presents with persistent memory deficits following injury. Choose the most appropriately matched option related to memory?

A. Hippocampus and implicit memory

B. Neocortex and associative learning

C. Medial temporal lobe- Declarative memory

D. Angular gyrus- procedural memory

Declarative / Explicit Memory:

- **Semantic (factual):**
  - Prefrontal cortex
  - Temporal cortex (lateral and anterior)
- **Episodic (events):**
  - Hippocampus
  - Medial temporal lobe
  - Neocortex

Nondeclarative / Implicit Memory:

- **Procedural (skills, habits):**
  - Striatum
  - Cerebellum
  - Motor cortex
- **Priming and perceptual:**
  - Neocortex
- **Associative learning (classical conditioning):**
  - Amygdala
  - Cerebellum

40. A 65 year old patient has normal fluency and repetition of speech but impaired naming and comprehension. What is the likely diagnosis?

A. Transcortical sensory aphasia

B. Transcortical motor aphasia

C. Conduction aphasia

D. Wernicke aphasia

41. A 22-year-old woman came to the hospital with complaints of excruciating paroxysmal pain on the right side of her lips, gums, and cheek. The episodes last for 2-3 min. Which of the following is incorrect regarding the primary drug used in the treatment of this condition?

A. It can cause agranulocytosis

B. It is a Chloride channel opener.

C. It also has anti-epileptic activity against focal seizures

D. It can lead to hyponatremia in the elderly

42. 72-year-old man with a history of Parkinson disease comes to the OPD for follow-up. The patient has been taking carbidopa-levodopa since being diagnosed 5 years ago and has required increasing doses to control his symptoms. He is now taking the maximum dose but reports worsening stiffness and difficulty moving between his scheduled doses; these symptoms improve after he takes the medication. Entacapone is added to his treatment regimen. This drug is most likely to improve this patient's symptoms through which of the following mechanisms?

A. Decreasing peripheral levodopa degradation

B. Directly stimulating dopamine receptors

C. Enhancing the effect of endogenous dopamine

D. Inhibiting central muscarinic receptors

43. Thalidomide should not be used in which of the following conditions?

A. HIV-assosiated peripheral neuropathy

B. HIV-assosiated aphthous ulcers

C. Behcet syndrome

D. Erythema nodosum leprosum

44. A 36-year-old woman presents with a unilateral throbbing headache associated with nausea and vomiting. She has had similar episodes in the past where the headache usually lasts for 1-2 days. Bright light increases her discomfort and she prefers sitting in a dark room. Which of the following are used to prevent further episodes of this condition?

1. **Sumatriptan**
2. **Propranolol**
3. **Naproxen**
4. **Topiramate**

A. 2 and 4

B. 1, 2 and 3

C. 1,2 and 4

D. 1, 2, 3 and 4

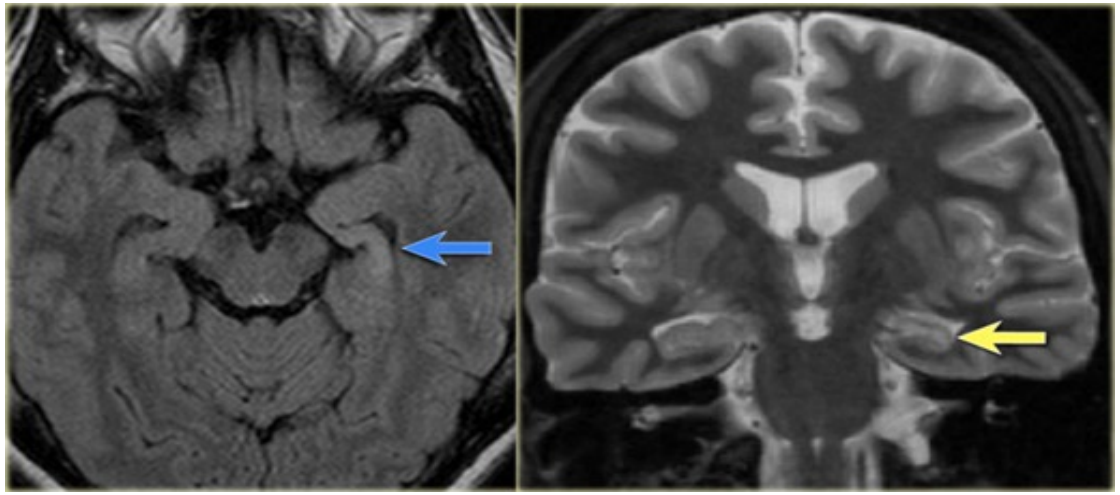
MIGRAINE
First line:
DOC: 5HT1B/1D+ :
5HT1F + : LASMIDITAN (acute)

Prophylaxis:
Propranolol
Topiramate
Valproate
New drugs:
CGRP-: RimeGEPANT, AtoGEPANT (oral-acute/prophylaxis)
ERENUMAB, GALANEZUMAB, FREMANEZUMAB (monthly sc injection),
EPTINEZUMAB (quarterly iv infusion)

CLUSTER HEADACHE
DOC:
Prophylaxis:

TENSION HEADACHE
DOC:
Prophylaxis:

45. Which of the following statements is false regarding the following pathology:



A. It results in focal seizures with dyscognitive features
B. The person experiences an aura before the seizure
C. It is associated with a family history of epilepsy
D. Seizures can be controlled with anticonvulsants such as carbamazepine

46. A middle-aged woman presents with progressive atrophy and weakness in her hands and forearms. On examination, she is found to have spasticity of the legs. Which of the following is the least likely feature to suggest ALS?

A. Babinski positive

B. Spontaneous fasciculations

C. Impaired bowel and bladder function

D. Preserved ocular mobility

47. A patient is presenting with a staggering gait and nystagmus (Rhomberg sign +ve) after a road traffic accident. Which lobe of cerebellum is affected?

A. Flocculonodular

B. Dentate

C. Anterior lobe

D. Vermis

Cerebellar Part	Connections & Function	Lesion Features
Flocculonodular lobe (vestibulocerebellum)	Linked with vestibular nuclei, maintains balance & eye movements	**Truncal ataxia, staggering gait, nystagmus, positive Romberg**
Anterior lobe (spinocerebellum)	Proprioceptive input from spinal cord, regulates posture & leg coordination	**Gait ataxia**, often in **alcoholics** (anterior lobe syndrome)
Vermis	Controls axial trunk muscles	**Truncal ataxia, broad-based gait**
Dentate nucleus (lateral hemisphere / cerebrocerebellum)	Coordinates planning & initiation of voluntary movement via corticopontocerebellar pathway	**Dysmetria, intention tremor, dysdiadochokinesia**

48. In the below question mechanical receptors are given with their functions. Choose the correctly matched pair.

A. Pacinian Corpuscle - Fast Vibration

B. Ruffini - Fine touch

C. Meissner – Stretch

D. Merkel - Slow Vibration

49. A 70-year-old right-handed man is brought to the emergency department due to sudden onset of right-sided weakness and urinary incontinence that began about 10 hours ago. On examination, there is 4/5 strength in the right upper extremity, 1/5 strength in the right lower extremity, and a Babinski sign on the right side. Sensation is decreased throughout the right foot and leg. Which of the following is the most likely diagnosis of this patient?

A. Left Anterior cerebral artery stroke.

B. Lacunar stroke

C. Left middle cerebral artery stroke.

D. Right ACA stroke

50. A 5-year-old boy is brought to the emergency department because of a 2-day history of lower leg weakness, swallowing difficulty, and drooling of saliva. He has not yet received any childhood vaccinations. Two days after admission, the patient develops shortness of breath. Pulse oximetry shows an oxygen saturation of 64%. Despite resuscitative efforts, the patient dies of respiratory failure. At autopsy, examination of the spinal cord shows destruction of the anterior horn cells. Neurological examination of this patient would have most likely shown which of the following findings?

A. Positive Babinski sign

B. Clasp knife spasticity

C. Hyporeflexia

D. Sensory loss

51. A 4-year-old boy presents with fever, headache, irritability, nuchal rigidity, and photophobia. CSF analysis shows:

- **Glucose: 60 mg/dL**
- **Protein: 80 mg/dL**
- **RBCs: 2/mm³**
- **WBCs: 85/mm³**

(10% neutrophils, 70% lymphocytes, 20% monocytes)
Which of the following pathogens is most likely responsible?

A. Cryptococcus neoformans

B. Group B coxsackievirus

C. Mycobacterium tuberculosis

D. Neisseria meningitidis

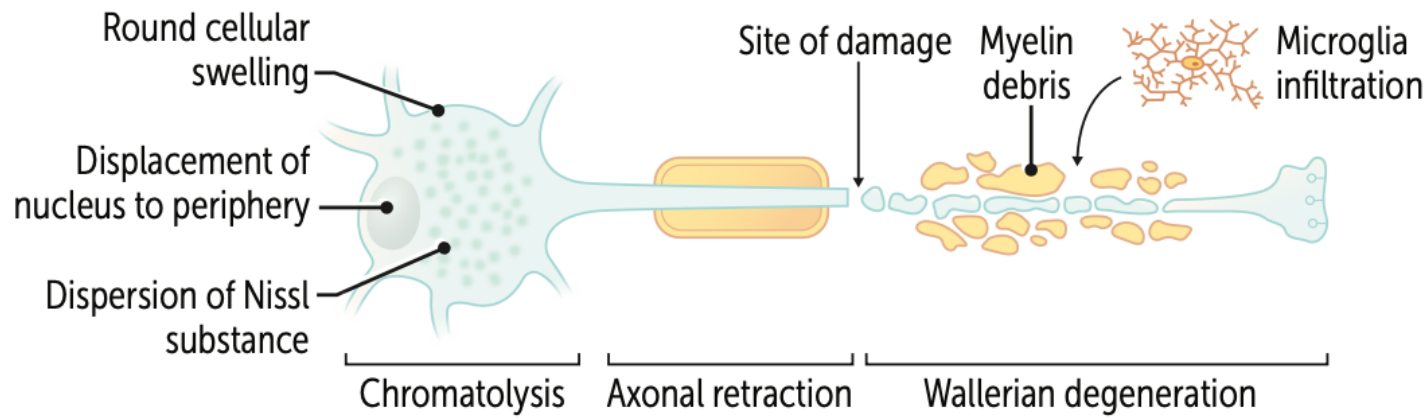
52. An investigator is studying cellular repair mechanisms in various tissues. One of the samples being reviewed is from the anterior horn of the spinal cord of a patient who was involved in a snowboard accident. Pathologic examination of the biopsy specimen shows dispersion of the Nissl bodies, swelling of the neuronal body, and a displacement of the nucleus to the periphery in numerous cells. Which of the following is the most likely explanation for the observed findings?

A. Neurodegenerative changes

B. Wallerian degeneration

C. Central chromatolysis

D. Reactive astrogliosis



Injured neuron

53. All of the following are tauopathies, except:

A. Pick's disease
B. Corticobasal degeneration
C. Progressive supranuclear palsy
D. REM behavioral disorder

Synucleinopathies:

- Parkinson’s disease
- Dementia with Lewy bodies
- Multiple system atrophy

Tauopathies:

- Alzheimer’s disease
- Progressive supranuclear palsy
- Corticobasal degeneration
- Pick’s disease
- Chronic traumatic encephalopathy
- Pantothenate kinase-associated degeneration
- Subacute sclerosing panencephalitis (SSPE)
- Down syndrome

54. A 26-year-old female patient presents with 6/60 visual acuity in one eye and 6/18 in the other eye. She has recurrent episodes of diminution of vision which recovers on treatment with steroids. MRI shows the following changes. What is the most probable diagnosis?

A. Hereditary spastic quadriplegia

B. Subacute combined degeneration

C. Neuromyelitis optica

D. Multiple sclerosis

55. A previously healthy 51-year-old man is brought to the emergency department because of confusion for 2 hours. His wife reports that he fell and hit his head while changing a ceiling light the previous evening. On arrival, he is unconscious. His temperature is 37.1°C (98.8°F), pulse is 54/min, respirations are 8/min and irregular, and blood pressure is 198/106 mm Hg. The right pupil is dilated and fixed; the left pupil is round and reactive to light. There is extension of the extremities to painful stimuli. He is intubated and mechanically ventilated. A mannitol infusion is begun. A noncontrast CT scan of the brain shows herniation of the right medial temporal lobe. Which of the following is the most likely additional finding in this patient?

A. Right-sided hemiplegia

B. Bilateral spasticity

C. Bilateral lower limb paralysis

D. Right eye esotropia and elevation

56. Disorders of autonomic function should be considered in patients with:

1. **Unexplained orthostatic hypotension**
2. **Dysuria**
3. **Hyperhidrosis**
4. **Urinary incontinence**
5. **Dementia**

A. 3 and 5

B. 1, 3 and 4

C. 2 and 4

D. 1, 2 and 5

System	Features
Cardiovascular	Orthostatic hypotension, tachycardia, exercise intolerance
Sudomotor	Hyperhidrosis or anhidrosis, heat intolerance
Gastrointestinal	Gastroparesis, constipation, diarrhea, swallowing difficulty
Genitourinary	Urinary incontinence/retention, erectile dysfunction, vaginal dryness
Pupillary	Abnormal pupil responses, difficulty with light adaptation
Other	Emotional lability, temperature dysregulation

57. In a patient with Guillain-Barre syndrome, chronic inflammatory demyelinating polyneuropathy is suspected when_____.

A. GBS deteriorates >8 weeks after onset or relapses at least two times

B. GBS deteriorates >5 weeks after onset or relapses at least three times

C. GBS deteriorates >9 weeks after onset or relapses at least three times

D. GBS deteriorates >5 weeks after onset or relapses at least two times

Feature	GBS (AIDP)	CIDP
Onset	Acute, monophasic	Insidious, chronic/progressive
Progression	≤ 4 weeks	≥ 8–9 weeks
Relapses	Rare, < 2	≥ 3 relapses
Treatment	IVIG / Plasmapheresis	Steroids, IVIG, plasmapheresis (long-term)

58. In patients with multiple sclerosis, which of the following is used to determine neurological impairment?

A. Modified Well's score

B. Hess and Hunt's scale

C. Kurtzke expanded disability status scale

D. Revised McDonald criteria

60. 42-year-old woman comes to the office due to worsening double vision and gait unsteadiness. She states she had cramping abdominal pain and diarrhoea 2 weeks ago after an outdoor picnic which spontaneously resolved after 3 days. The double vision began 4 days ago and is persistent and progressive. She has had no fever, headache, neck pain, photophobia, or bowel or bladder dysfunction. On physical examination, she is fully alert and oriented with normal memory, speech, and language comprehension. There is mild ptosis of the right eye with weakness of the medial and upward gaze. Left eye movements are normal. Bilateral lower-extremity weakness with loss of deep tendon reflexes is present. Bilateral upper-extremity muscle strength, reflexes, and coordination are normal. Sensation to touch and pinprick is normal throughout. Which of the following is the most likely cause of this patient's current condition?

A. Botulinum toxin ingestion

B. Dietary thiamine deficiency

C. Immune-mediated nerve injury

D. Neuroinvasive virus infection

63. 61-year-old male patient comes to the office complaining of involuntary shaking of his hands. It started on the right side but now his left handshakes as well. The shaking disappears with purposeful activity and worsens with emotional stress. He does not have a family history of tremors. Physical examination reveals a resting hand tremor with a frequency of 4-5 cycles/sec. There is some muscle rigidity of both arms. His gait and posture are normal. His mini mental status exam yields a score of 30/30. Which of the following is the most appropriate treatment for this patient?

A. Clozapine

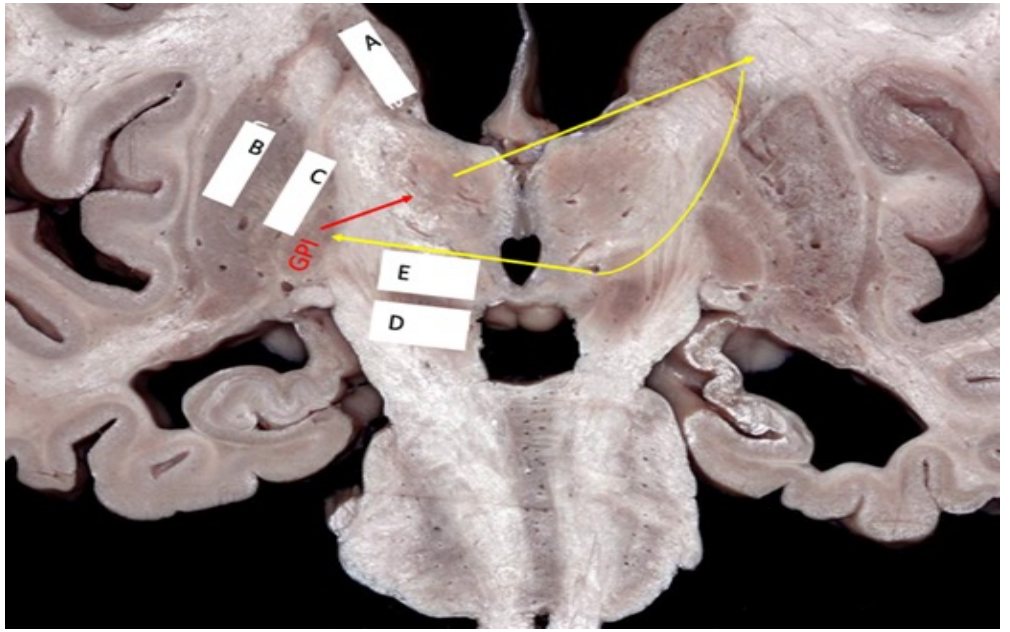
B. Lorazepam

C. Propranolol

D. Trihexyphenidyl

64. Match the following:

1. Preferred site for DBS for tremor reduction
2. Hemiballismus results from a lesion at this site
3. Chorea results from a lesion at this site
4. Athetosis is a result of a lesion at this site
5. Parkinsonism occurs due to defect here



A. 1-A, 2-D, 3-A, 4-B, 5-E

B. 1-E, 2-E, 3-A, 4-C, 5-D

C. 1-D, 2-E, 3-A, 4-C, 5-D

D. 1-D 2-A, 3-C, 4-B, 5-E

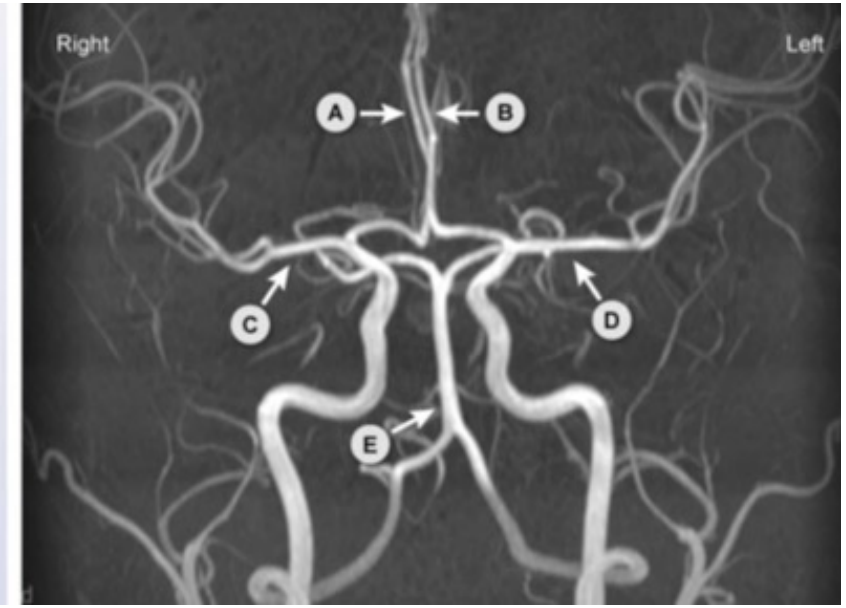
65. 54-year-old man is brought to the emergency department by his wife after he develops dificulty speaking. When asked about the onset of his symptoms, the patient slowly responds with "weak... morning..." and becomes very frustrated. On examination, he is able to state his first name but with difficulty, and correctly points to different body parts on command. This patient's speech difficulties are most likely caused by a lesion affecting which of the following vessels?

A. A

B. E

C. C

D. D



66. Ischemia occurs in the brain when the cerebral blood flow falls below _____.

A. 20 mL/100 g/min

B. 50 mL/100 g/min

C. 40 mL/100 g/min

D. 30 mL/100 g/min

CBF (mL/100 g/min)	Brain Status
> 50	Normal perfusion
20–40	Functional impairment onset
< 20	Ischemia and irreversible damage starts

67. A 90-year-old female suffers an ischemic stroke in the context of diffuse atherosclerotic disease and dies four days later despite appropriate treatment. The predominant cell type seen on postmortem brain biopsy functions most similarly to which of the following?

A. Neutrophil

B. Eosinophil

C. T-lymphocyte

D. Monocyte

TIME SINCE ISCHEMIC EVENT	12–24 HOURS	24–72 HOURS	3–5 DAYS	1–2 WEEKS	> 2 WEEKS
Histologic features	Eosinophilic cytoplasm + pyknotic nuclei (red neurons)	Necrosis + neutrophils	Macrophages (microglia)	Reactive gliosis (astrocytes) + vascular proliferation	Glial scar

68. A 50-year-old gravida 2, para 2 female presents with urinary incontinence. She reports daily episodes of a sudden need to void and has started to wear adult diapers. She also has intermittent motor and sensory loss, decreased visual acuity with painful eye movements, and worsening symptoms in summer. Further workup is most likely to reveal which of the following?

A. Positive leukocyte esterase and nitrites on urinalysis

B. Elevated IgG and myelin basic protein on CSF analysis

C. Elevated post-void residual volume on bladder ultrasound

D. Albumino-cytological dissociation

69. A 48-year-old female presents with visual changes, diplopia, and weakness worsening throughout the day. Ice pack test improves eyelid drooping. Chest X-ray shows an anterior mediastinal mass. Which of the following shares an embryonic origin with the cells of this mass?

A. Eustachian tube

B. Parathyroid glands

C. Greater horn of hyoid

D. Thyroid gland

90. A 50-year-old female presents with burning sensations and an irresistible urge to move her legs at night, relieved by movement. Which is the first-line drug that can be prescribed?

A. Clonazepam

B. Gabapentin

C. Riluzole

D. Benztropine

91. Which of the following drugs act on sodium channels and potentiate slow sodium inactivation?

A. Topiramate

B. Lacosamide

C. Phenytoin

D. Lamotrigine

92. A young woman, who is blind, presents with nighttime insomnia. What is the drug of choice for her condition?

A. Zolpidem

B. Ramelteon

C. Agomelatine

D. Tasimelteon

96. Which of the following drugs can be used in diabetic neuropathy, post herpetic neuralgia and spinal cord injury?

A. Pregabalin

B. Carbamazepine

C. Amitriptyline

D. Phenytoin

97. Which is the drug used for refractory intractable rheumatic chorea?

A. Haloperidol

B. Sodium valproate

C. Diazepam

D. Probenecid

98. A 72-year-old right-handed male is brought to the emergency department by his daughter. According to her, he had only shaved the right half of his face this morning. The patient displays poor insight into this behavior, although there are no obvious deficits in comprehension, speech, and repetition. His past medical history includes hypertension, which is well controlled with labetalol. Physical exam suggests intact comprehension, speech, and repetition. Sensation is grossly intact bilaterally, with no focal motor deficits appreciated. However, when asked to draw a clock face, he omits the numbers 8, 9, 10, and 11. Which of the following vessels is most likely affected in this patient?

A. Left anterior cerebral artery

B. Left middle cerebral artery

C. Left posterior cerebral artery

D. Right middle cerebral artery

99. A 40-year-old female is brought to the emergency department due to progressive dyspnea and fatigue for the past two days. One week prior, she was diagnosed with a urinary tract infection and subsequently treated with ciprofloxacin. She also reports a one-month history of intermittent fatigability that often worsens throughout the day and improves with rest. She denies fevers, weight loss, diarrhea, or sick contacts. Vital signs include a temperature of 36.9°C (98.5°F), blood pressure of 140/88 mmHg, heart rate of 94 beats/min, and shallow respirations of 22 breaths/min. Oxygen saturation is 91% on room air. Lungs are clear to auscultation bilaterally with accessory muscle use, and paradoxical abdominal wall motion is noted on inspiration. Achilles and patellar reflexes are 2+ bilaterally with decreased muscle strength in the upper and lower extremities. Arterial blood gas sampling is performed with the following results:
pH: 7.24
pCOz: 60 mmHg
pOz: 90 mmHg
Bicarbonate: 26 mEq/L
Based on this patient's presentation, which of the following is the most likely diagnosis?

A. Guillain-Barré syndrome

B. Myasthenic crisis

C. Polymyositis

D. Tetanus

100. A team of genetics researchers is working to develop a new gene therapy targeting the downstream effects of Alzheimer disease. They sought out and identified multiple candidate genes through genome-wide association studies. A complete meta-analysis of studies involving autosomal dominant inheritance patterns using linkage-based methodology was reviewed to isolate relatively large culprit regions on chromosomes. Over twenty-nine variants were found to provide a statistically significant effect for increasing the odds of removal of dysfunctional beta-amyloid plaques. Of these, the research team discovered one candidate gene variant, which provided a greater conferred risk for lifetime development of sporadic Alzheimer disease than all other candidate genes. Which of the following confers the most significant risk for the development of Alzheimer disease?

A. Multiple trinucleotide repeats of CAG
B. Mutation of the LDLR gene on chromosome 19
C. One copy of the APOE E4 gene on chromosome 19
D. Two copies of the APOE E2 gene on chromosome 19

59. What is the most common cause of death in patients with rheumatoid arthritis?

A. Atlantoaxial subluxation

B. Interstitial lung disease

C. Coronary artery disease

D. Gastrointestinal bleeding

Feature of RA	**Most common**
Involved joints	
Spine involvement	
Extra-articular manifestation	
Cardiac manifestation	
Valvular abnormality	
Pulmonary manifestation	
Hematological manifestation	
Ocular manifestation	
Lymphoma	
Cause of death	

61. An elderly man presents with clinical findings are shown in the image. What is the most likely diagnosis?

A. Septic arthritis
B. Osteoarthritis
C. Psoriatic arthritis
D. Rheumatoid arthritis

62. Which of the following conditions predominantly involve the upper lobe of the lung?

A. Scleroderma

B. Ankylosing spondylitis

C. Asbestosis

D. Rheumatoid arthritis

70. Which of the following is not a first-line drug for the management of a patient with rheumatoid arthritis?

A. Sulfasalazine

B. Hydroxychloroquine

C. Methotrexate

D. Azathioprine

71. A 32-year-old woman comes to the OPD due to a 3-month history of painful, swollen wrists and knees. She also has joint stiffness, which is worse upon wakening and limits her daily activities. The patient's only other medical condition is hypothyroidism for which she takes levothyroxine. Plain radiographs of the joints show joint space narrowing and marginal erosions. Which of the following cytokines are primarily involved in the pathogenesis of this patient's joint destruction?

A. IL-1 and tumor necrosis factor-alpha

B. IL-2 and interferon gamma

C. IL-4 and IL-5

D. IL-10 and transforming growth factor-beta

72. A 44-year-old man comes to the emergency department due to worsening abdominal pain and vomiting. Urgent laparotomy reveals bilateral renal infarcts and multiple segments of necrosis and perforation in the small bowel. Microscopic examination of the vessel walls shows diffuse inflammation of the adventitia and marked thickening of the inner layers due to proliferation of loose connective tissue; the arterial lumen is significantly narrowed. Which of the following is the most likely diagnosis?

A. Bacterial endocarditis

B. Granulomatosis with polyangitis

C. Polyarteritis nodosa

D. Microscopic polyangitis

73. A 34-year-old man comes to the physician due to painful urination. Physical examination shows a watery penile discharge. Urethral swabs obtained from the patient are negative for gonococcal infection. He is treated appropriately and his symptoms resolve. Two weeks later, he develops acute conjunctivitis, right knee pain, and vesicular rash on his palms and soles. This patient's condition is most likely associated with which of the following?

A. Esophageal dysmotility

B. Polymyositis

C. Sacroilitis

D. Tabes dorsalis

74. A 7-year-old boy is brought to the emergency department by his parents for arthralgias. Physical examination is shown. The knees are tender but do not appear warm or swollen. Urinalysis results are as follows:

- **Protein: 2+**
- **Blood: moderate**
- **Leukocyte esterase: trace**
- **White blood cells: 1-2/hpf**
- **Red blood cells (RBCs): many/hpf**
- **Casts: RBC casts**

Which of the following mechanisms is the most likely underlying cause of this patient's renal findings?

A. Autoantibodies against podocyte antigens

B. Autoantibodies to host cell basement membranes

C. Immune complex deposition in glomerular mesangium

D. Thrombosis of glomerular capillaries

75. A woman, 35 years old, arrives with symptoms of skin thickening, weakened muscles, and paleness in the extremities when exposed to cold temperatures. Elevated levels of creatinine kinase are observed, and a muscle biopsy reveals perifascicular infiltration. Which antibody is linked to these findings?

A. Anti-U3 RNP

B. Anti-centromere antibody

C. Anti-PM-Scl antibody

D. Anti-Jo-1 antibody

76. All of the following can be given to a pregnant woman with SLE except?

A. Hydroxychloroquine

B. Azathioprine

C. Mycophenolate mofetil

D. Sulfasalazine

77. Which of the following anti rheumatoid drug increases extracellular adenosine?

A. Methotrexate
B. Lefunamide
C. Sulphasalazine
D. Hydroxychloroquine

78. A 57-year-old man comes to the physician because of sudden-onset fever, malaise, pain and swelling of his wrists and ankles that began a week ago. One month ago, he was started on hydralazine for adjunctive treatment of hypertension. His temperature is 37.8°C (100°F). Examination shows swelling, tenderness, warmth, and erythema of both wrists and ankles; range of motion is limited. Further evaluation is most likely to show an increased level of which of the following autoantibodies?

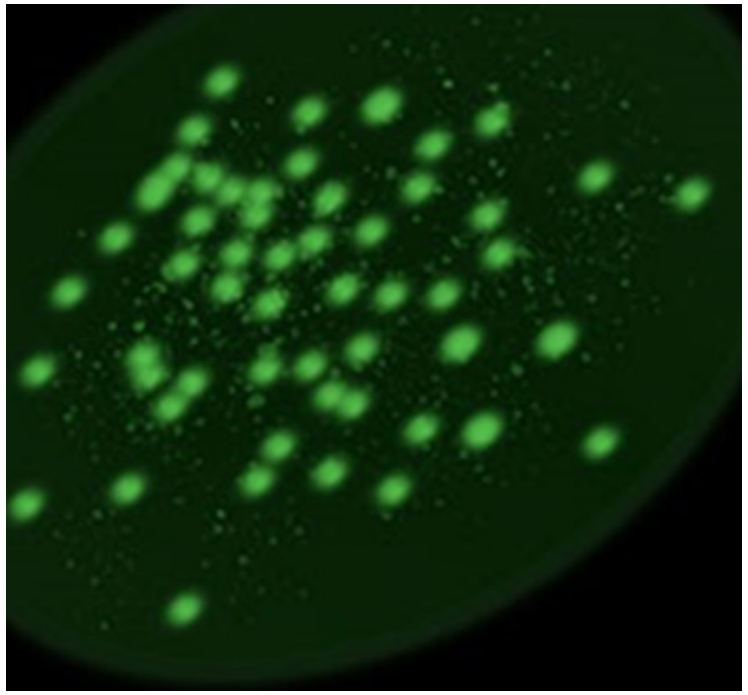
A. Anti-dsDNA

B. Anti-Smith

C. Anti-ß2-glycoprotein

D. Anti-histone

79. 52-year-old woman presents with a history of cold-induced color changes in her fingers, tight and shiny skin on her face and fingers, and small dilated blood vessels visible on her face. She also mentions difficulty in making certain facial expressions due to skin tightness. ANA staining pattern of the patient is shown in the image below.

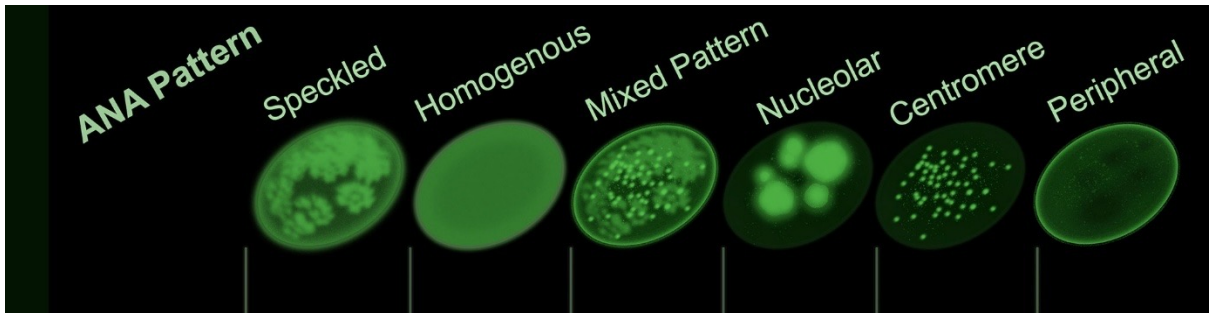


A. Centromeric

B. Homogenous

C. Nucleolar

D. Speckled


ANA Pattern
Speckled
Homogenous
Mixed Pattern
Nucleolar
Centromere
Peripheral

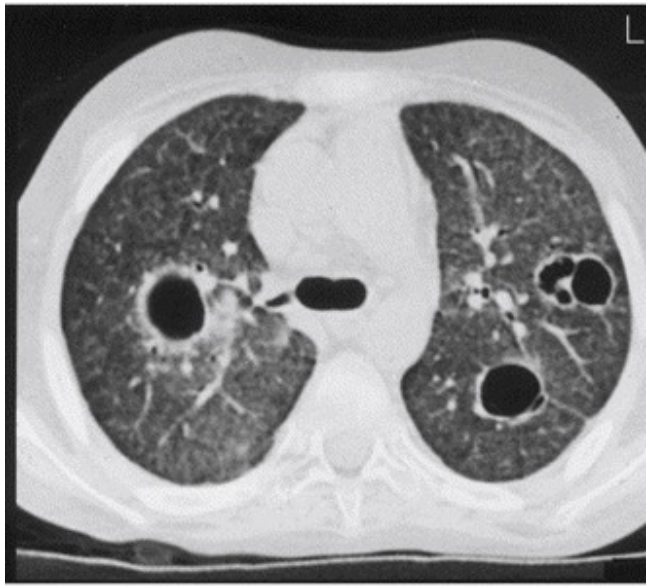
80. An elderly patient presents with cutaneous vasculitis and hemoptysis. HRCT is shown below. Which investigation should be performed next to help you diagnose the condition?

A. C-ANCA

B. Anti-GBM

C. HbsAg

D. P-ANCA



81. A 51-year-old woman comes to the emergency department because of a 1-day history of severe pain in her left knee. To lose weight, she recently started jogging for 30 minutes a few times per week. She has type 2 diabetes mellitus and hypertension treated with metformin and chlorothiazide. On examination, her temperature is 38.5°C (101.3°F), pulse is 88/min, and blood pressure is 138/87 mm Hg. The left knee is swollen and tender to palpation with a significantly impaired range of motion. A 1.5 cm. painless ulcer is seen on the plantar surface of the left foot. Which of the following is most likely to help establish the diagnosis?

A. Perform arthrocentesis

B. Measure HLA-B27

C. Measure rheumatoid factor

D. Perform serum uric acid

82. A 30-year-old multiparous woman presents with chronic lower back pain. The pain is non-radiating, worse with activity, and improves with rest. There are no neurological deficits. X-ray pelvis shows bilateral symmetric sclerosis of the iliac side of the sacroiliac joints, with joint spaces preserved. What is the most likely diagnosis?

A. Ankylosing spondylitis

B. Osteitis condensans ilii

C. Sacroiliitis

D. Metastatic bone disease

83. A 55-year-old woman comes for evaluation of persistent morning stiffness. She was diagnosed with rheumatoid arthritis 4 months ago and was prescribed methotrexate. The patient currently takes the maximum tolerated dose, along with folic acid and as-needed naproxen. On examination, swelling, tenderness, and pain on range of motion are found at the metacarpophalangeal and proximal interphalangeal joints and wrists bilaterally. Treatment with etanercept is considered. Which of the following tests should be performed before beginning treatment with this agent?

A. HRCT chest

B. Echocardiogram

C. Fecal occult blood test

D. Interferon gamma release assay

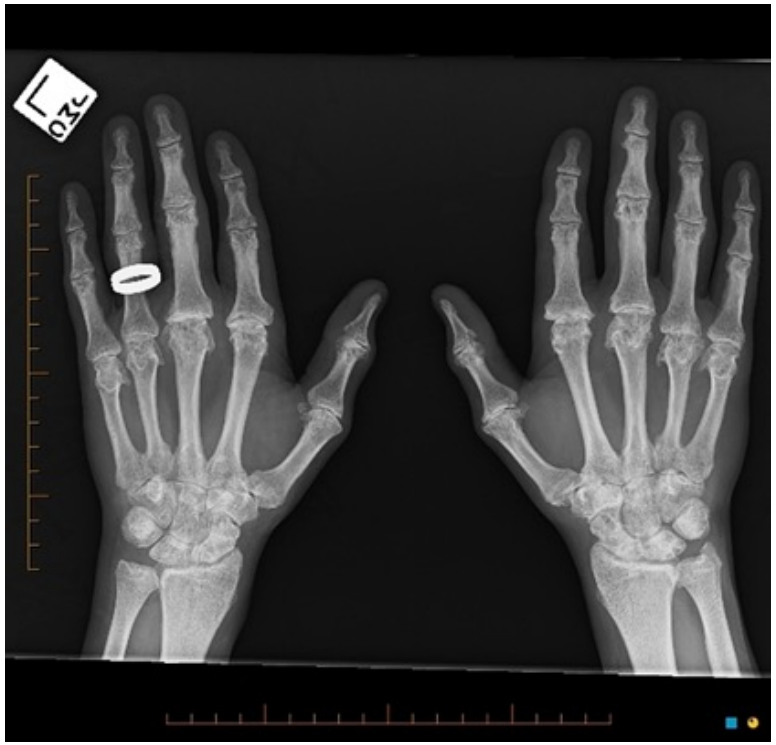
84. 43-year-old man comes to the OPD due to joint pain and stiffness in both hands for the past 6 months. He sometimes awakens with hand pain at night. Hand radiographs reveal bilateral erosions and joint deformities involving the second and third metacarpophalangeal joints. Which of the following is the most likely diagnosis?

A. Rheumatoid arthritis

B. Hereditary hemochromatosis

C. Multiple myeloma

D. Reactive arthritis



85. All of the following characteristics are found in the pleural effusion fluid of a rheumatoid arthritis patient except:

A. RA factor

B. Cholesterol crystals

C. High glucose

D. High LDH

86. A triad of skin lesions, asymmetric mononeuritis multiplex and eosinophilia is seen in which of the following conditions?

A. Cryoglobulinemic vasculitis

B. Polyarteritis nodosa

C. EGPA

D. Giant cell arteritis

87. All the following conditions are manifestations of IgG4RD EXCEPT:

A. Autoimmune pancreatitis

B. Crescentic glomerulonephritis

C. Lymphoplasmacytic aortitis

D. Orbital pseudotumor

88. 35-year-old woman presents with fever and pain in knees and ankles. On the exam, she has B/L parotid swelling, and she has lesion shown in the picture below. Laboratory studies are normal except for a slightly increased calcium level. What is the most appropriate Rx?

A. Allopurinol

B. Corticosteroids

C. Methotrexate

D. Plasma Exchange

89. A 65-year-old female with severe headaches and sudden monocular vision loss has ESR of 67 mm/hr. Which of the following is the best next step in management?

A. Administration of oral corticosteroids

B. Temporal artery biopsy

C. Retinal imaging with optical coherence tomography (OCT)

D. Brain magnetic resonance imaging (MRI)

93. A patient having persistent allergic rhinitis is on treatment with intranasal steroids. You wish to add an antihistamine to his treatment regimen. He requests an intranasal preparation. Which of the following will you prescribe?

A. Ebastine

B. Mizolastine

C. Azelastine

D. Fexofenadine

94. Which is the monoclonal antibody approved for the treatment of rheumatoid arthritis?

A. Nivolumab

B. Durvalumab

C. Sarilumab

D. Pembrolizumab

95. Which of the following is true about the WHO analgesic ladder for chronic pain in adults?

A. Intravenous route is preferred

B. Step 3 includes use of Morphine

C. Adjuvants are indicated only for mild pain

D. Analgesics are given "on demand"

WHO analgesic ladder is a **three-step approach** for managing chronic pain:

Step 1: Non-opioids (e.g., paracetamol, NSAIDs) for mild pain.

Step 2: Weak opioids (e.g., codeine, tramadol) ± non-opioids for moderate pain.

Step 3: Strong opioids (e.g., morphine, fentanyl) ± non-opioids for severe pain.

Thank You

Cerebellum
Get the balance right

Integrated Neuro + Rheumat 28-08-2025

Dr. Zainab Vora

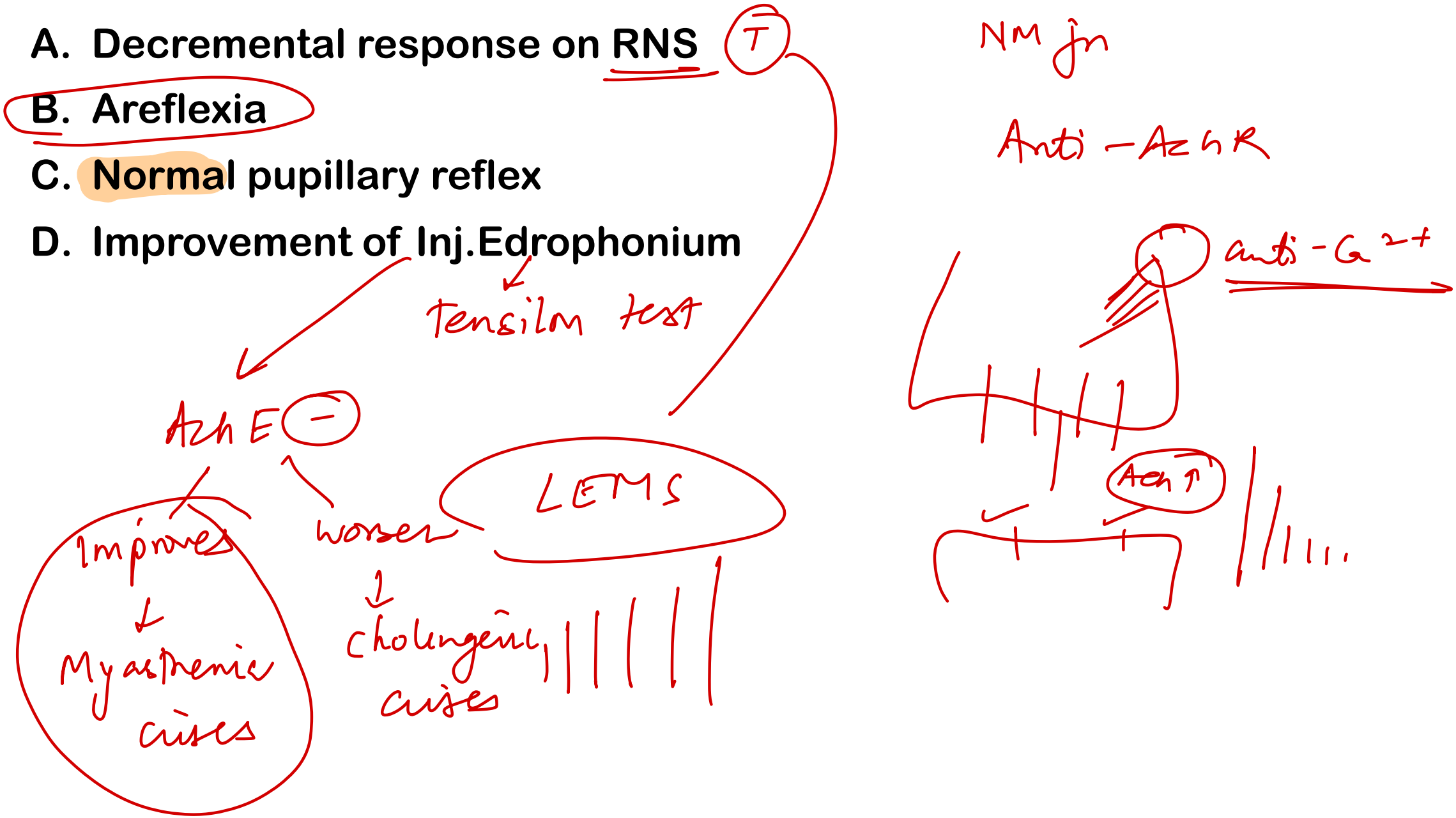
1. What is not a feature of myasthenia gravis among the following?

A. Decremental response on RNS

B. Areflexia

C. Normal pupillary reflex

D. Improvement of Inj.Edrophonium



2. A patient presents with left-sided facial paralysis and weakness for the past 1 hour. Her blood pressure is 160/100 mmHg and CT is shown below. What would be your next step?

A. CT angiogram

B. Start on aspirin + clopidogrel

C. Intravenous thrombolysis

D. IV Labetalol

Hyperdense MCA
↓
Thrombus

Ischemic stroke

BP : 160/110

XX

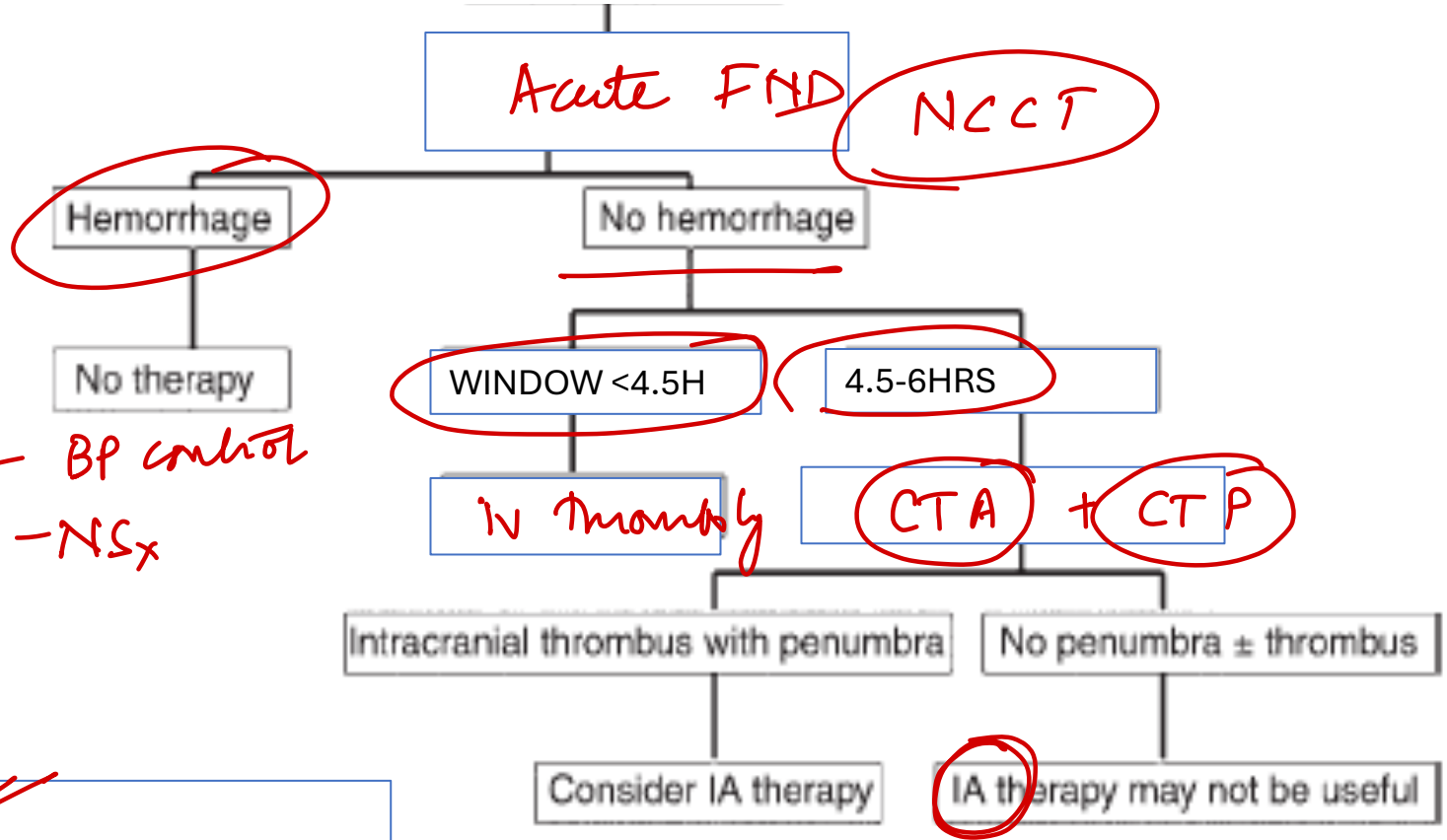
XX

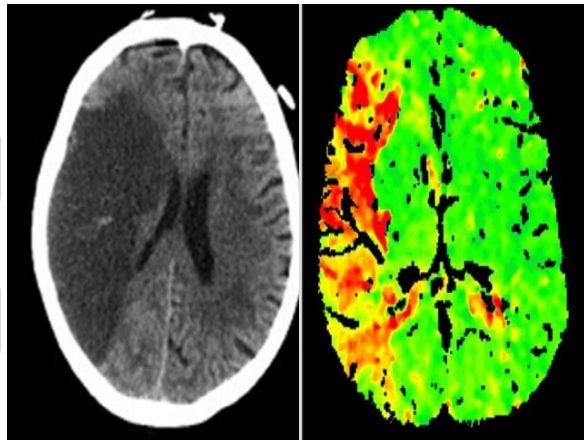
NCCT
↓
Hge

window period
↓
< 4.5hrs

CI?
↓
185/110

STROKE-APPROACH





BP > 185/110
Bleeding diathesis
Recent head injury or ICH
Major surgery in preceding 2 weeks
GI bleed in 3 weeks
Recent MI

3. All of the following are the core clinical features for the diagnosis of Lewy body dementia except:

A. Fluctuating cognition

B. Rigidity and pill-rolling tremors

C. Visual hallucinations

D. Autonomic dysfunction

RBD

PD

Core Features of LBD

- Fluctuating cognition/alertness
- Recurrent, well-formed visual hallucinations
- REM sleep behavior disorder (RBD)
- Spontaneous Parkinsonism

Supportive and Associated Findings

- Autonomic dysfunction
- Depression, apathy, anxiety
- Dysphagia

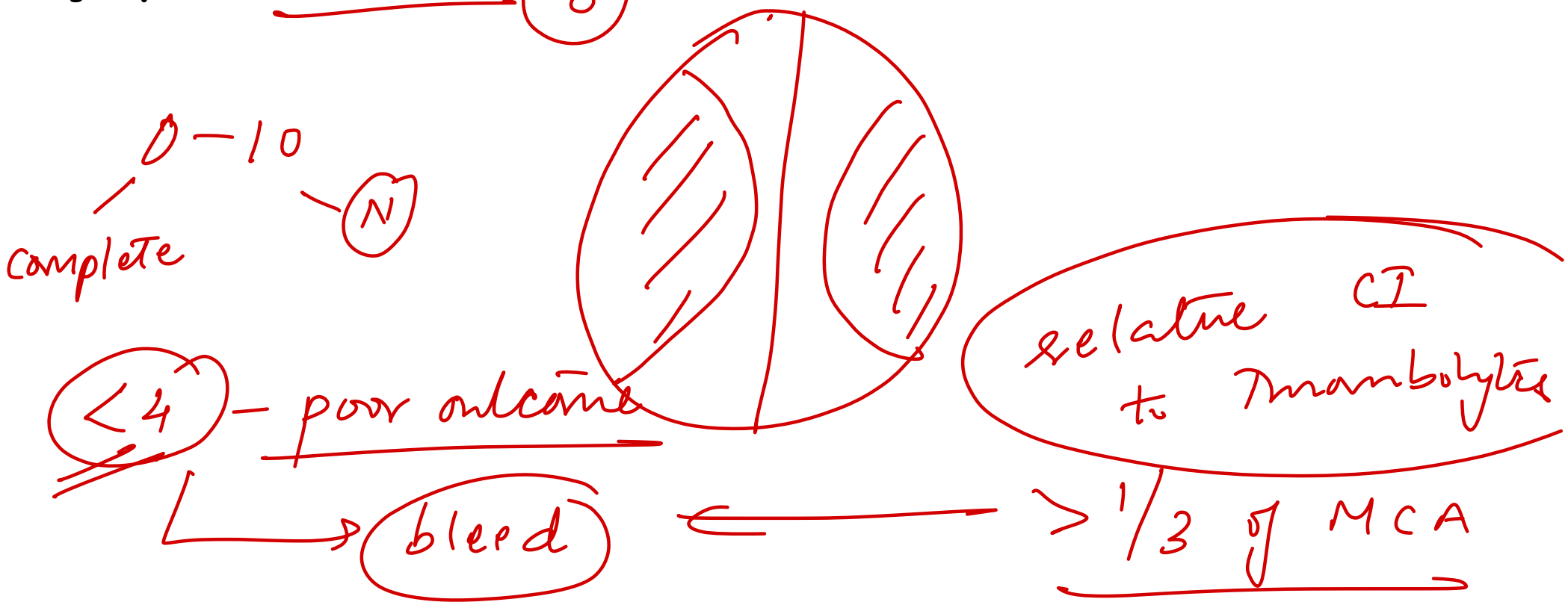
4. Thrombolysis can be considered in all these conditions, except?

A. ASPECTS score >7

B. Blood pressure of more than 185/110mmHg

C. Ischemic stroke within 2 hours

D. Onset of symptoms <4 hours



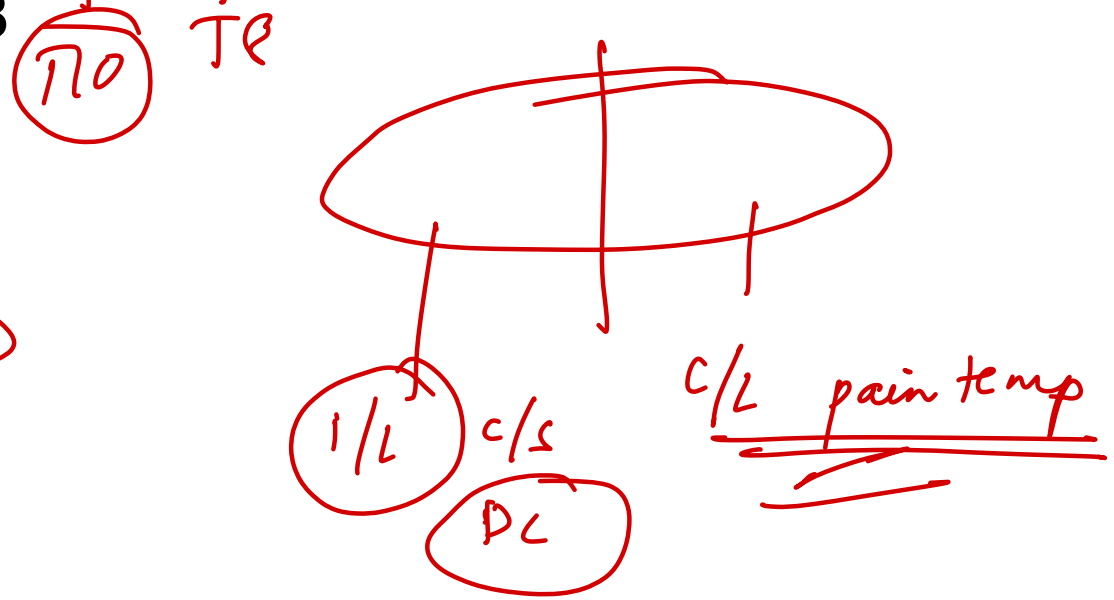
5. A 19-year-old man is brought to the emergency department after being stabbed in the back. Neurological examination demonstrates the absence of motor activity in all muscle groups of the right lower extremity as well as decreased muscle tone. Left leg motor function is normal. Right patellar reflex, Achilles reflex, and Babinski sign are absent. There is loss of light touch and proprioception below the right costal margin. Pinprick sensation is absent below the level of umbilicus on the left side. Which of the following is the most likely location of this patient's injury?

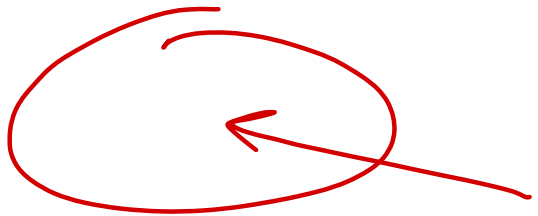
A. Anterior spinal artery injury at T8

B. Right spinal transection at T10

C. Left spinal hemisection at T8

D. Right spinal hemisection at T8





6. A 27-year-old man presents with four days of progressive, bilateral, lower extremity weakness and dysesthesia. The patient denies any history of trauma, but states that he stayed home from work last week because of fever accompanied by diarrhea. Neurologic examination demonstrates the absence of reflexes in the lower extremities with no cranial nerve deficits. What is the best therapy for this patient's condition?

A. Plasmapheresis
B. Glucocorticoids
C. Acetaminophen
D. Radiation therapy

IVIG

XX

GI → LMN ↑ ascending ↓

GBS

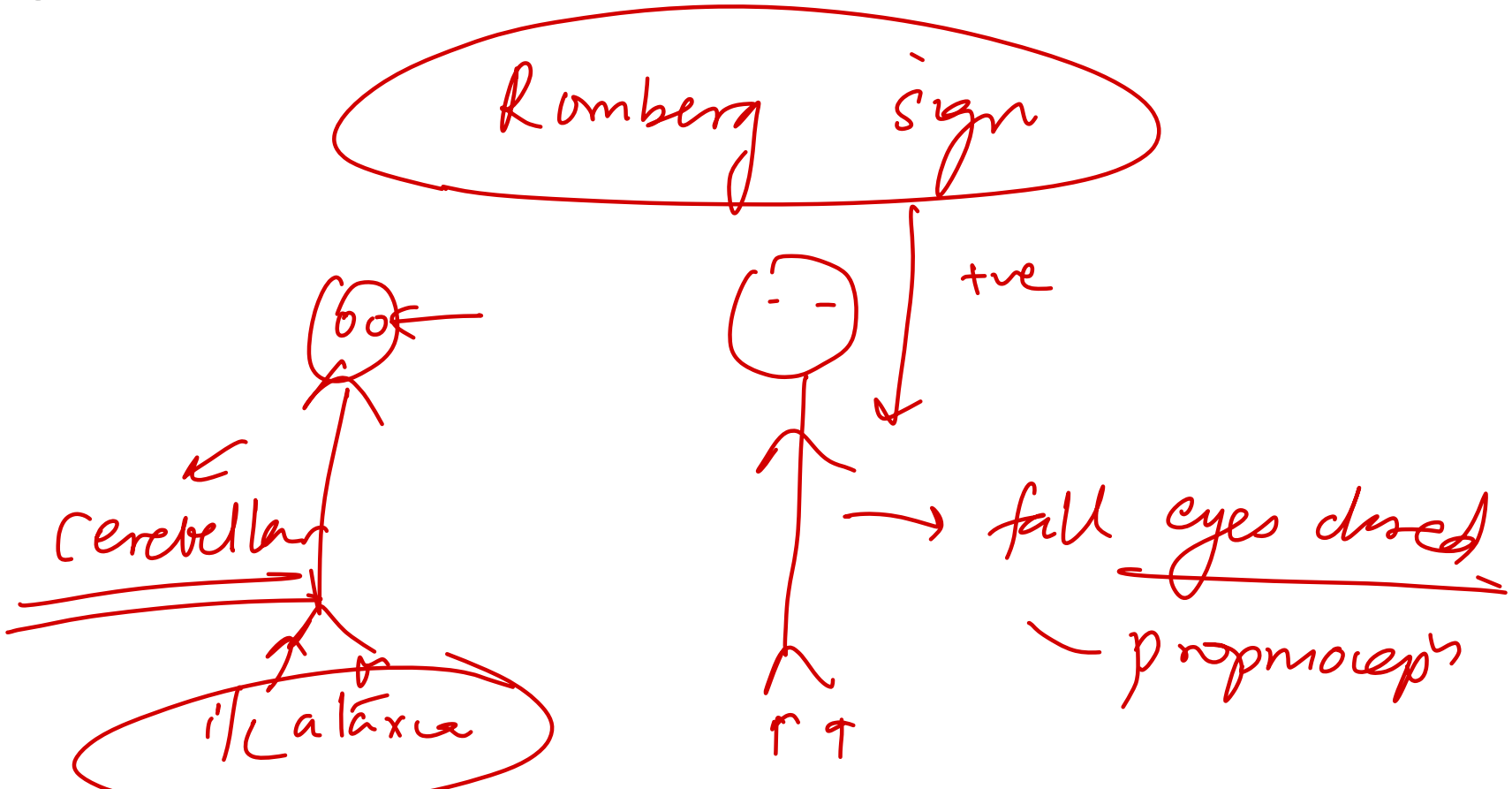
7. 34-year-old man is evaluated in the clinic due to difficulty walking over the past 2 weeks. His symptoms have resulted in several recent falls. The physician asks him to stand with his feet close together, arms to the sides, and eyes closed. This maneuver most likely tests for abnormalities in which of the following?

A. Cortical sensory integration → Parietal

B. Gait

C. Motor coordination

D. Proprioception



8. A 29-year-old woman comes to the OPD for treatment of anxiety that has worsened over the past year. She says, "My anxiety just comes out of the blue; one way or another, I'm anxious all the time. An anxiety disorder is diagnosed, and fluoxetine is prescribed. The patient's anxiety begins to improve over the next 4-6 weeks. The physician explains that the medication inhibits the reuptake of a neurotransmitter released by a specific set of neurons. These neurons are likely part of which of the following structures?

A. Caudate nucleus → Ach / GABA (CAG)

B. Locus ceruleus → NE

C. Nucleus basalis of Meynert → Ach

D. Raphe nuclei

SSRI

9. All of the factors would suggest a higher risk for a patient with TIA developing stroke in the future according to ABCD2 scoring except?

A. Age 65 years

B. Duration of symptoms 5 mins

C. BP 140/90mm Hg

D. Diabetes

$ABCD^2$ score	Points
Age > 60 years	1
BP = 140/90 mmHg at initial evaluation	1
Clinical features of the TIA	
Speech disturbance without weakness, or	1
Unilateral weakness	2
Duration of symptoms	
10–59 min, or	1
>60 min	2
Diabetes mellitus in patient's history	1

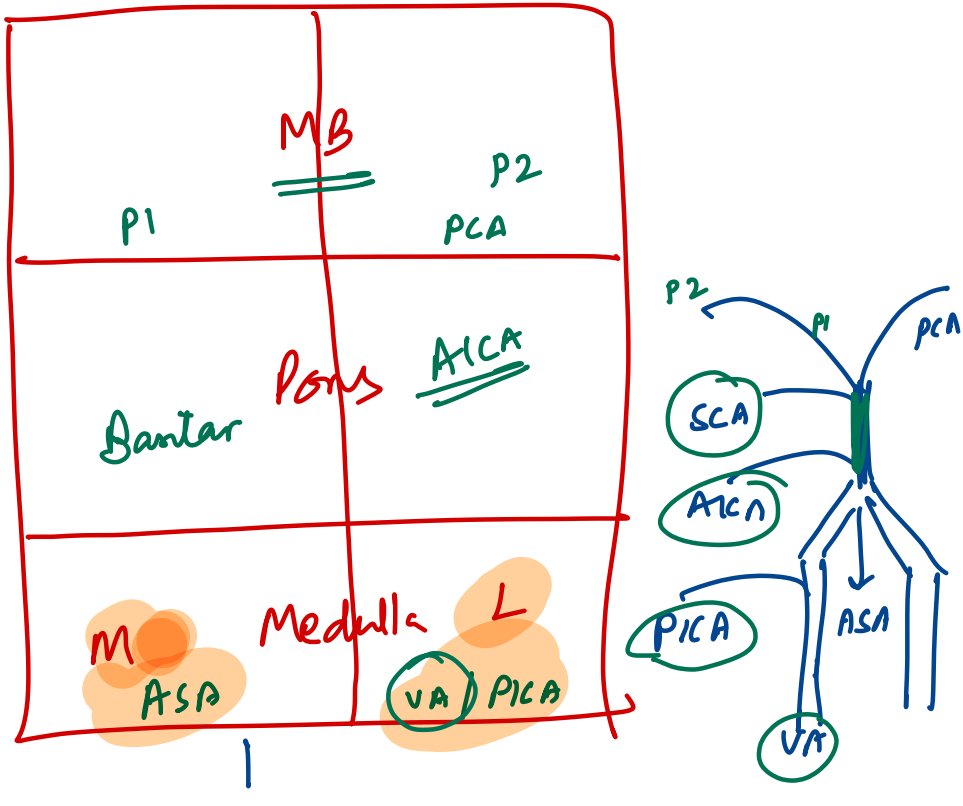
10. A patient presents with vertigo, diplopia, hoarseness, dysphagia and left Horner's syndrome associated with numbness of the left face and right-side limbs. Which artery is affected in this patient?

A. Posterior inferior cerebellar artery
B. Anterior inferior cerebellar artery
C. Superior cerebellar artery
D. Basilar artery

Lat medullary

Wallenberg

VA/PICA


MB
P2
P1
PCA
Pons
AICA
Bantar
Medulla
M
L
ASA
VA
PICA
P2
P1
PCA
SCA
AICA
PICA
ASA
VA

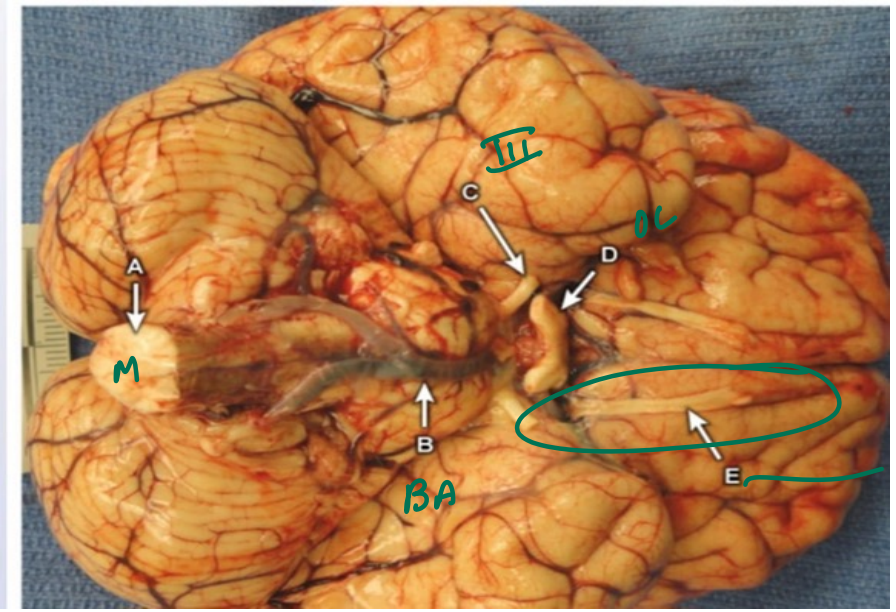
11. 24-year-old man is brought to the emergency department due to seizures. He has had 2 days of worsening fever, headache, and vomiting. Physical examination shows signs of meningeal irritation. The patient rapidly becomes comatose and dies 48 hours later despite aggressive medical care. Autopsy examination shows congested leptomeninges with fibrinopurulent exudate. Microscopy reveals numerous ameba in the exudate and brain tissue. Which of the following is the most likely portal of entry of this pathogen into the CNS?

A. A

B. B

C. C

D. E



Naegleria

Olf bulb

12. A 62-year-old, right-handed man is evaluated for an episode of left leg weakness that spontaneously resolved within 30 minutes of onset. The patient also has had transient vision loss in the right eye. Medical history is significant for hypertension and diabetes mellitus. Evaluation reveals an atherosclerotic plaque in the extracranial portion of the supplying artery. During percutaneous stenting, the vascular catheter is inserted into the right common femoral artery and gradually advanced to the level of the aortic arch. Which of the following is the most likely path of the catheter before stenting of the culprit lesion can be performed?

Amaurosis fugax

A. Aorta - brachiocephalic artery - common carotid artery - external carotid artery

B. Aorta - brachiocephalic artery - common carotid artery - internal carotid artery

C. Aorta - common carotid artery - external carotid artery

D. Aorta - common carotid artery - internal carotid artery

AION

CRA

13. Treatment of choice for an acute attack of cluster headache is:

A. Oral sumatriptan

B. Subcutaneous sumatriptan

C. 100% oxygen at 6 L/minute

D. Propranolol

10-12 L/min

100% O_2 + Sumatriptan

14. A 38-year-old hospitalized woman is evaluated for new-onset confusion. The patient has a prolonged history of Crohn disease. Pupils are equal and reactive to light. Abduction of the right eye is limited and elicits bilateral horizontal nystagmus. Motor strength and deep tendon reflexes are normal throughout. Finger-to-nose and heel-to-shin testing are normal, but the gait is wide based. Which of the following is the most likely cause of this patient's neurologic symptoms?

A. Vitamin B12 deficiency

B. Thiamine deficiency

C. Folate deficiency

D. Cerebellar dysfunction

15. A 5-year-old boy is brought to the emergency department due to recurrent, generalized tonic-clonic seizures over the past 24 hours. He takes no medications and has no family history of epilepsy. The patient's temperature is 39.4 C (103 F), blood pressure is 110/70 mm Hg, pulse is 112/min, and respirations are 10/min. During the examination, the patient suddenly develops sustained, generalized tonic-clonic convulsions without fully regaining consciousness between episodes. Which of the following describes the mechanism of action of the most appropriate initial therapy for his seizures?

A. Blockade of presynaptic voltage-gated calcium channels

B. Blockade of presynaptic voltage-gated sodium channels

C. Enhanced postsynaptic chloride influx

D. Inhibition of vesicle fusion and neurotransmitter release

SE

B2D

Lorazepam

GABA +

16. 74-year-old woman is brought to the emergency department by her son after he found her acting strangely. She was asking to open the window blinds, even though the blinds were already open and was bumping into objects when walking around her home. The patient insists that her vision is fine and came to the hospital upon her son's insistence. Bilateral direct and consensual pupillary reflexes are normal. On confrontation visual field testing, she reports the wrong number of fingers in all visual quadrants. The patient indicates the wrong direction when asked to point to the door and gives an incorrect visual description when asked to describe the physician. This patient most likely has an infarction involving the brain regions supplied by which of the following arteries?

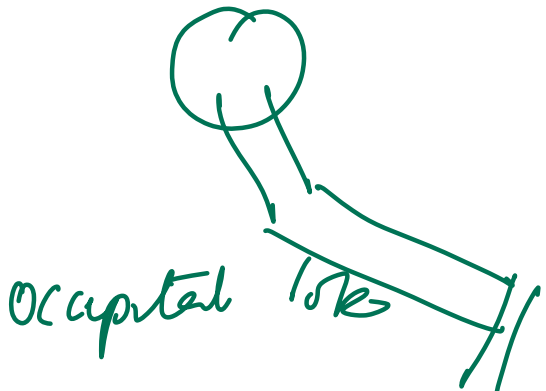
ANON Sx

A. Anterior cerebral artery

B. Basilar artery

C. Ophthalmic artery

D. Posterior cerebral artery



17. True about electroencephalogram (EEG) is all except:

A. 10% of the normal population can have epileptiform discharges.

B. Scalp EEG may be helpful in localizing frontal lobe epilepsy.

C. Doing EEG is not mandatory for the diagnosis of seizures.

D. Progressive multifocal leukoencephalopathy shows triphasic and slow waves.

18. 34-year-old woman with sleep problems comes to the OPD. Over the last year, she has had increasing difficulty falling asleep at night and is exhausted during the day. The patient does not use alcohol, tobacco, or illicit drugs. She has a family history of heart disease and depression. The patient has failed a number of nonpharmacological approaches, including cognitive-behavioral therapy for insomnia. She requests pharmacologic treatment and is prescribed a short course of zolpidem. Which of the following is the most likely mechanism of action of this medication?

A. Dopamine receptor antagonism

B. GABA receptor agonism

C. Histamine receptor antagonism

D. Melatonin receptor agonism

BZD - like

Against GABA - A

(x) tolerance

(x) dependence

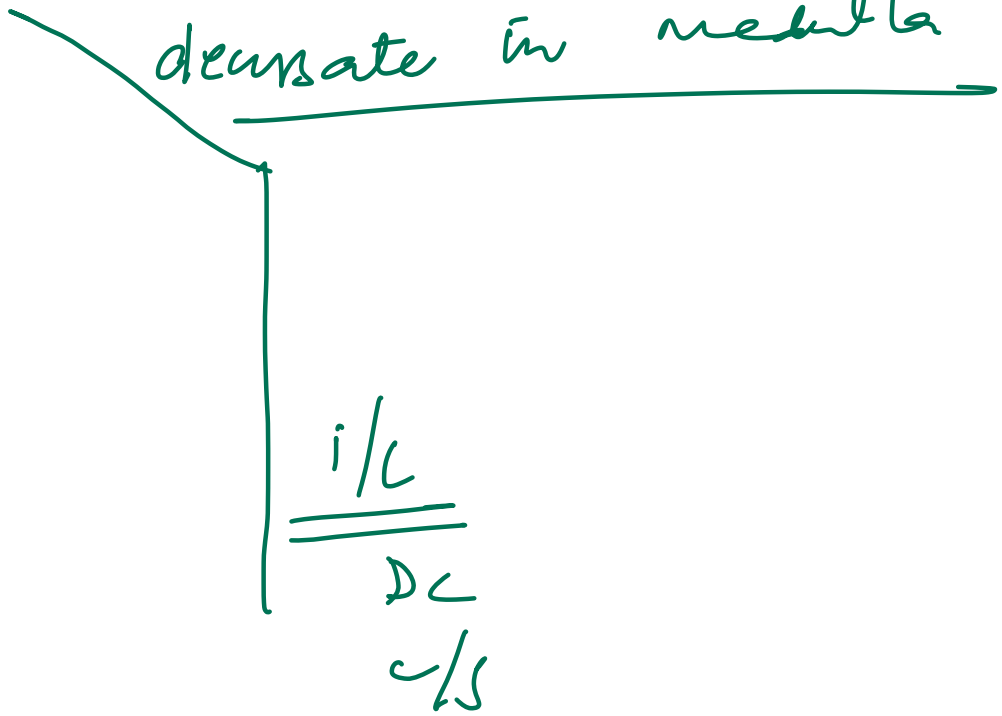
19. Which of the following does not help in the localization of lesions in the spinal cord?

A. Contralateral hemiplegia (above med pyramids) PYR

B. Fasciculation at the level of lesion

C. Babinski positive UMN

D. Bladder involvement



20. A patient presents with fever, neck rigidity and altered sensorium. The resident was instructed to perform a lumbar puncture on this patient. What is the correct order of managing this patient?

1. **Place IV cannula and give fluids at 40 mL/h**
2. **Start injection ceftriaxone**
3. **Fundoscopy**
4. **Perform guarded lumbar puncture**

A. 1, 2, 4, 3

B. 1, 4, 3, 2

C. 4, 3, 2, 1

D. 1, 3, 4, 2

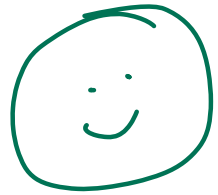
21. A highly agitated 54-year-old man is brought to the emergency department by his family because he is unable to effectively communicate. He speaks clearly and with conviction but his sentences are incomprehensible. He does not appear to understand the doctor's questions, does not follow oral or written instructions, and cannot repeat simple phrases. Branch occlusion of which of the following arteries is most likely responsible for this patient's condition?

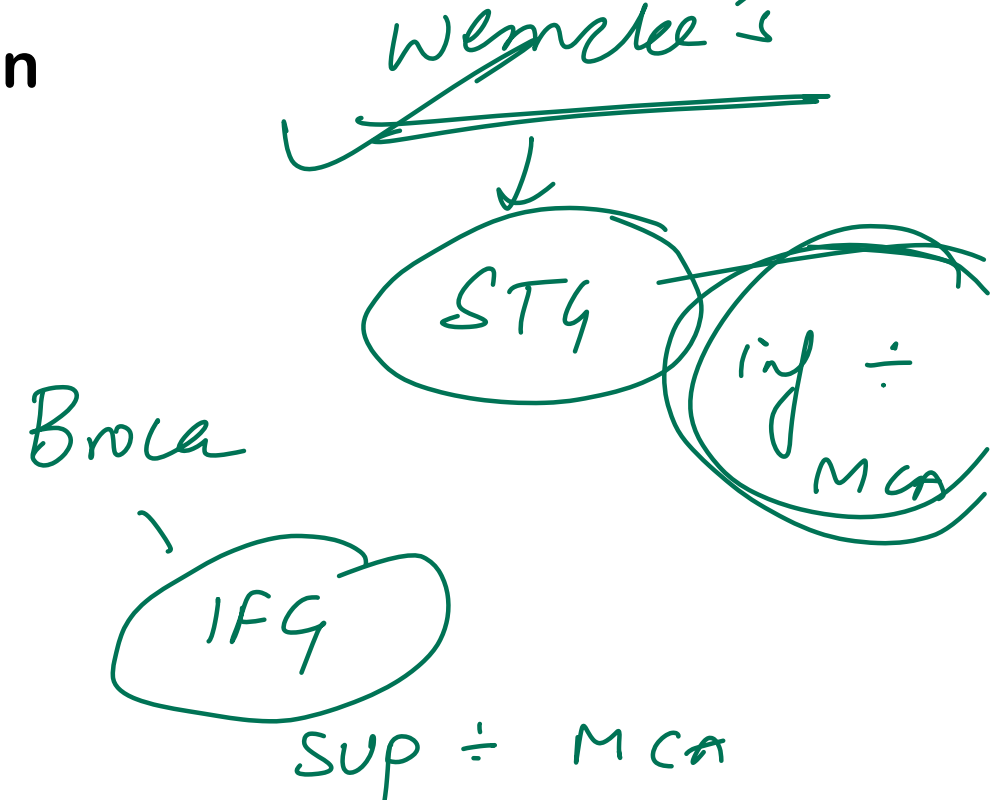
A. Right Middle cerebral artery-superior division

B. Right Middle cerebral artery-inferior division

C. Left Middle cerebral artery-superior division

D. Left Middle cerebral artery-inferior division

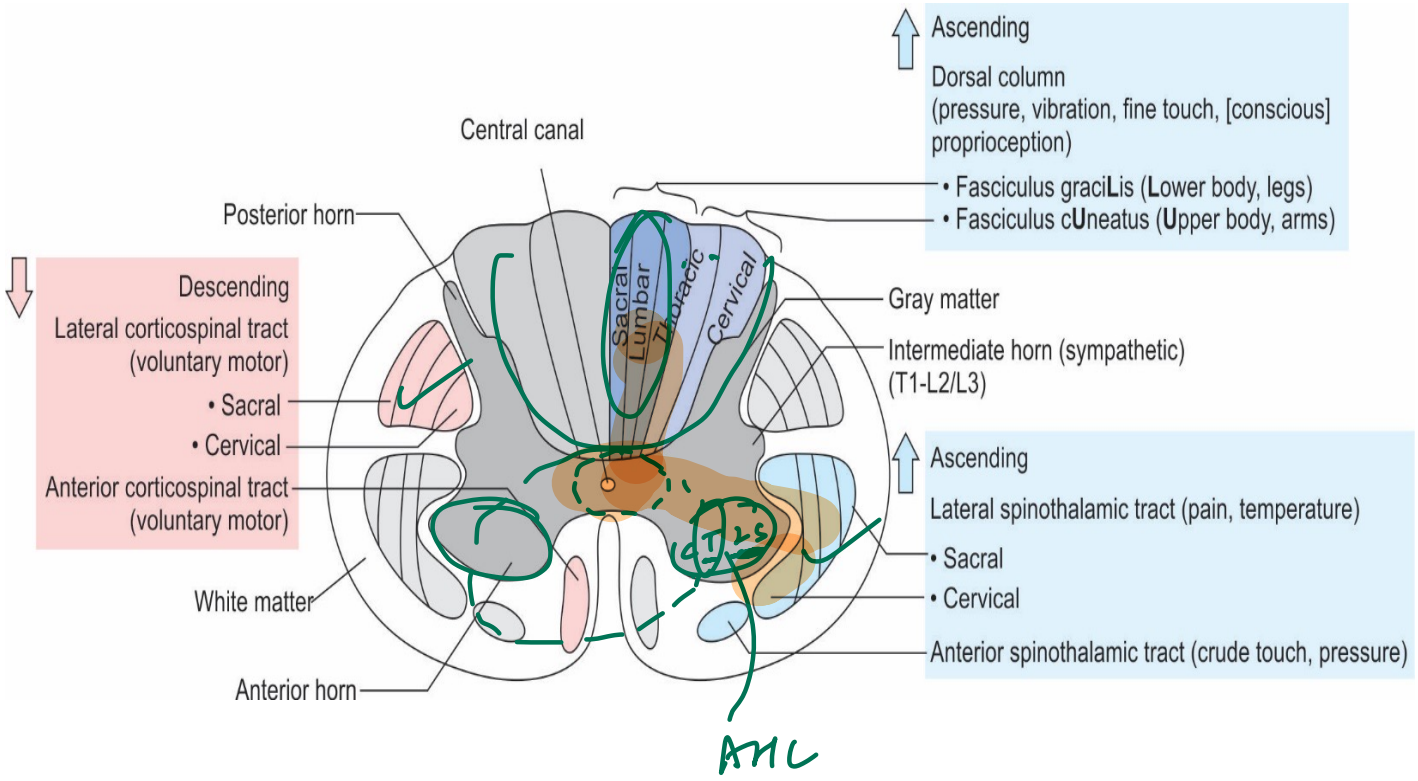




22. What would be seen if the central part of the cord was involved?

1. LMN lesion of trunk and UMN of lower limbs.
2. UMN lesion of trunk and LMN of lower limbs.
3. Bladder and bowel involvement.
4. Posterior tract involvement.

A. 1 and 4
B. 2 and 3
C. 2 and 4
D. 1 and 3


Ascending
Dorsal column
(pressure, vibration, fine touch, [conscious] proprioception)
• Fasciculus graciLis (Lower body, legs)
• Fasciculus cUneatus (Upper body, arms)
Central canal
Posterior horn
Descending
Lateral corticospinal tract
(voluntary motor)
• Sacral
• Cervical
Anterior corticospinal tract
(voluntary motor)
White matter
Anterior horn
Sacral
Lumbar
Thoracic
Cervical
Gray matter
Intermediate horn (sympathetic)
(T1-L2/L3)
Ascending
Lateral spinothalamic tract (pain, temperature)
• Sacral
• Cervical
Anterior spinothalamic tract (crude touch, pressure)
T
L2
AMC

LMN - Arms > LL

23. Which of the following types of headaches requires further evaluation?

1. **Duration ≥ 4 hours**
2. **Thunderclap nature**
3. **Associated Low GCS**
4. **Associated Blurring of vision**

A. 2, 3

B. 2, 4

C. 2, 3, 4

D. 1, 2, 3, 4

SNOP10 Red flags

1. **Systemic symptoms** (fever, weight loss)
2. **Systemic disease** (cancer, HIV, immunosuppression)
3. **Neurologic symptoms/signs** (focal deficits, altered GCS, papilledema)
4. **Onset sudden** (thunderclap)
5. **Onset after age 50**
6. **Pattern change** (new or progressive)
7. **Positional** headache (worse lying vs standing → CSF leak, ICP)
8. **Precipitated by Valsalva/exertion** (cough, sneeze, exercise → raised ICP, aneurysm)
9. **Papilledema**
10. **Pregnancy / postpartum** (risk of CVT, eclampsia, pituitary apoplexy)

24. A 44-year-old man comes to the OPD due to several weeks of difficulty walking and frequent falls. He also reports episodes of sharp, stabbing pain in his extremities. Deep-tendon reflexes are absent at the knee and ankle bilaterally. Proprioception and vibration sensation are reduced throughout the lower extremities. He has a wide-based gait and a positive Romberg sign. Which of the following diagnostic findings is most likely associated with this patient's current symptoms?

A. Cerebrospinal fluid (CSF) culture growing acid-fast bacilli

B. CSF PCR positive for herpes virus

C. Encapsulated yeasts on CSF India ink preparation

D. Reactive VDRL tests on CSF samples

TB

DC

areflexia + neuropathy

tabes dorsalis

ARP +

25. 35-year-old woman with a history of migraines is evaluated due to a recent increase in headache frequency and severity. She has had no focal weakness, sensory loss, vision changes, or seizures. Neuroimaging reveals a small aneurysm arising from the segment of right internal carotid artery within the cavernous sinus. If this patient's aneurysm continues to expand, which of the following findings is most likely to be observed?

A. Deviation of the tongue to the right when protruded

B. Inability to contract the right orbicularis oculi muscle

C. Vision defect affecting the left half of the visual field

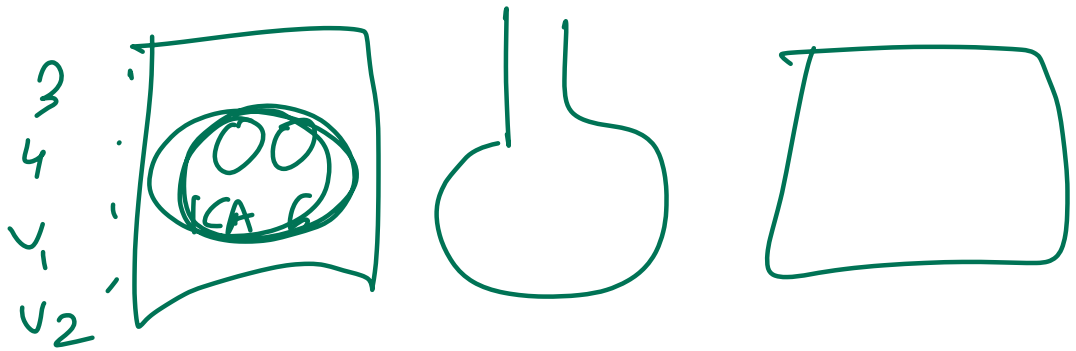
D. Weakness of the right lateral rectus muscle

12th

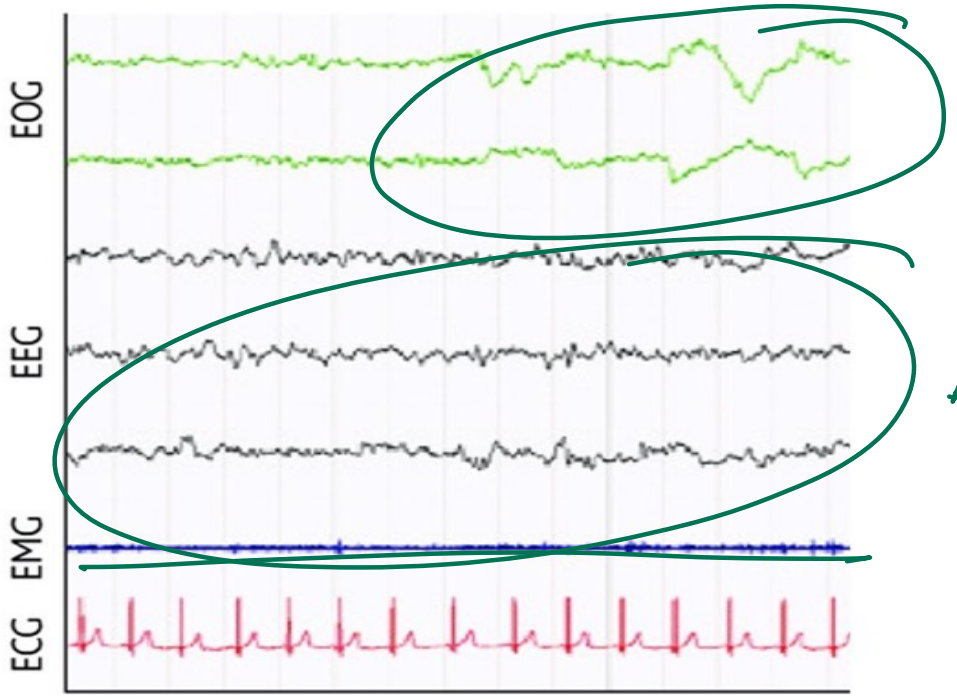
7th.

LR 6

II



26. Identify the stage of sleep based on the EEG shown below:



REM / awake

B " "

" 

A. NREM1

B. NREM2

C. NREM3

D. REM

27. Which of the following findings is most likely to be seen on physical examination of this patient?

A. Left dysdiadochokinesia
B. Left Horner syndrome
C. Right hemiparesis
D. Right hemisensory loss

Pilocytic astrocytoma child

adult Hemangioblastoma

Cyst + mural nodule

1/2 cerebellum

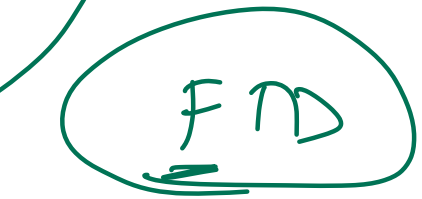
28. 55-year-old woman is brought to the OPD by her husband for evaluation of strange behavior. She has been spending large amounts of money to buy expensive clothes and jewelry. She usually drinks 1 or 2 glasses of wine on weekends but lately has been drinking 2 or 3 glasses almost every day. This patient's condition is most likely due to abnormal accumulation of which of the following?

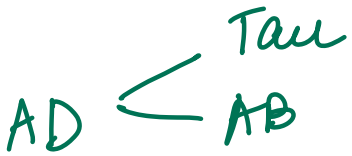
A. Ataxin ATM

B. Beta-amyloid AD

C. Prions

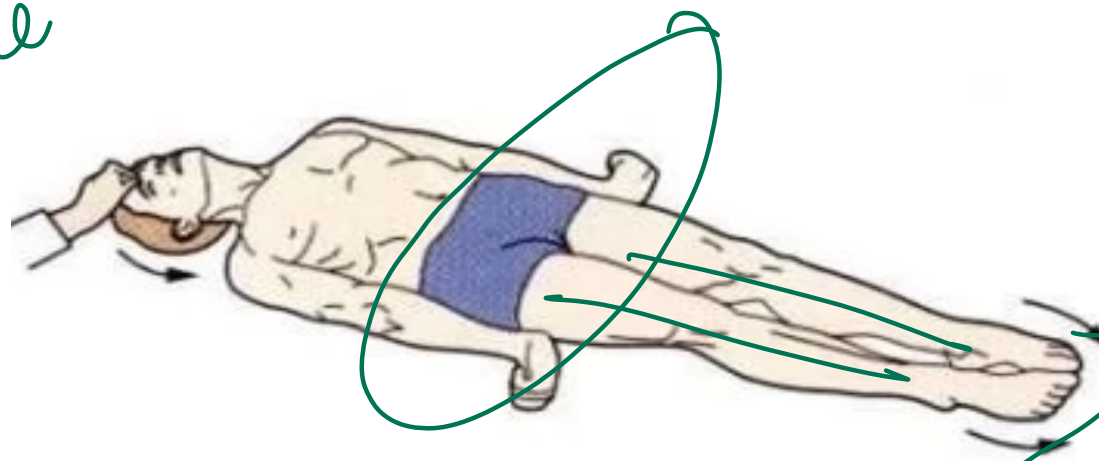
D. Ubiquitinated TDP-43





FTD – Tau

29. The posture shown in image is seen in :



A. Upper pons hyperactivity

B. Upper midbrain hyperactivity

C. Upper pons damage

D. Upper midbrain damage

Posture	Level of Lesion	Tracts affected	Motor Manifestation
Decorticate	Above red nucleus (midbrain)	Corticospinal tract disrupted above red nucleus; rubrospinal active	Upper limbs flexed (rubrospinal facilitation), lower limbs extended
Decerebrate	At or below red nucleus	Corticospinal and rubrospinal tracts disrupted	Upper and lower limbs extended (vestibulospinal dominance)

30. In the figure shown below, mechanism of action of valproate is best represented by:

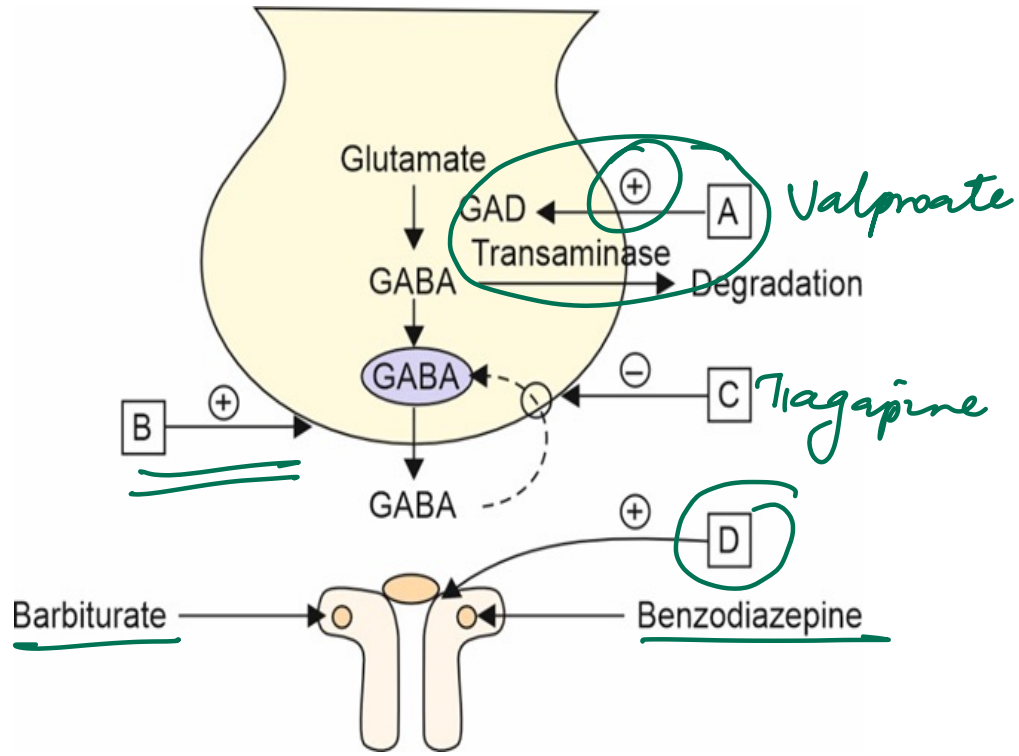
PYQ.

A. A

B. B

C. C

D. D



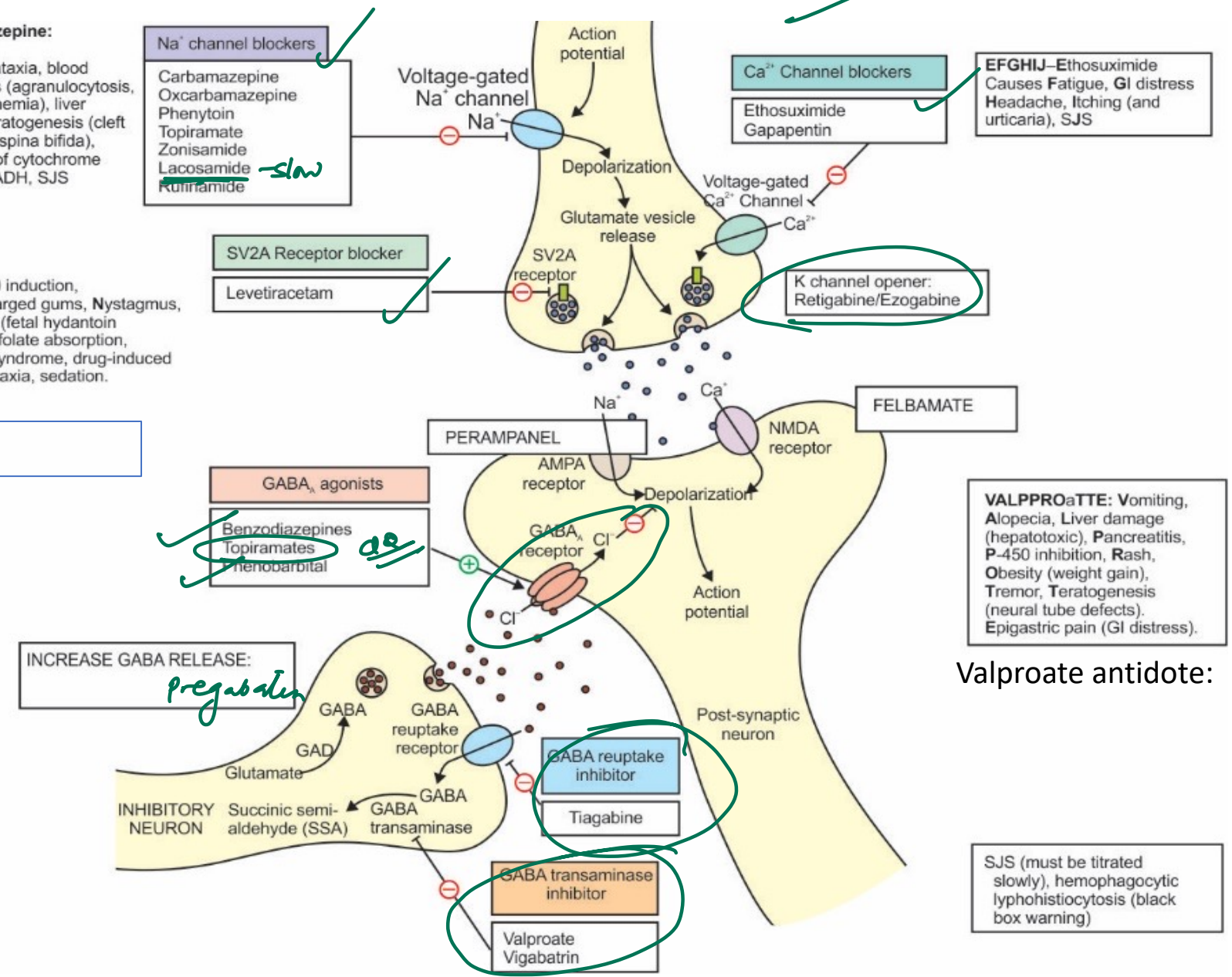
Valproate / Vigabatrin

Tiagapine

ANTI-EPILEPTIC DRUGS

S/e stones / ACG:

All CYP inducers except:



31. A 5 year old patient presents to the OPD with dysphagia, dysarthria, and dysphonia. On examination, brisk jaw jerk is seen. What is the possible localisation in this patient?

A. Corticospinal tracts

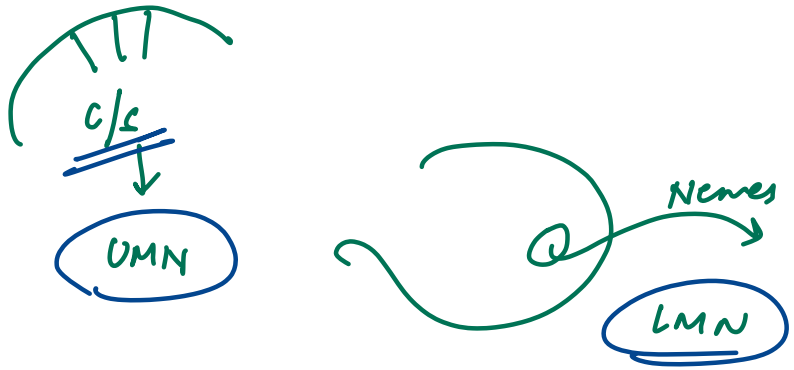
B. Corticobulbar tracts

C. Mesencephalic trigeminal nucleus

D. V3 nerve

Pseudobulbar

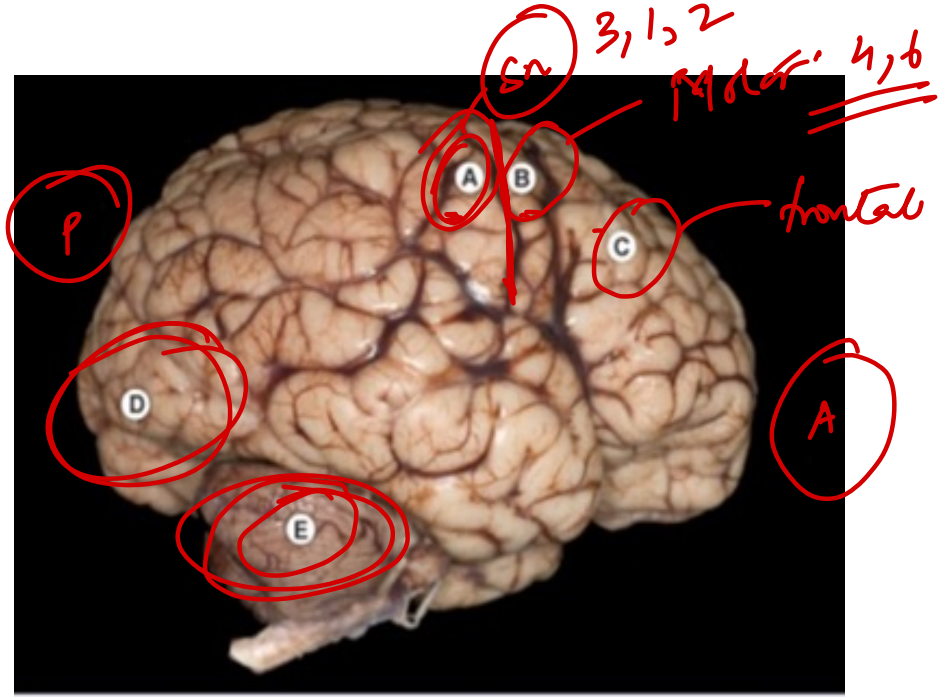
	Pseudobulbar (UMN: 5,7,10,11,12)	Bulbar (LMN: 9,10,11,12)
Gag reflex	++ exaggerate	absent
Jaw jerk	++ exaggeret	N
Tongue	Spastic	fasciculations
Speech	Laboured/spastic	Nasal twang Nasal regurgitation



C/B tract

C Nucleus
CN

32. 65-year-old man with a history of atrial fibrillation comes to the office due to numbness of his left hand for the past 3 weeks. When the eyes are closed, he is unable to recognize the letters written on his left hand with a stylus. Muscle strength is normal in all extremities. Deep tendon reflexes are 2+. Gait is normal. This patient most likely has a lesion in which of the following locations of the brain?

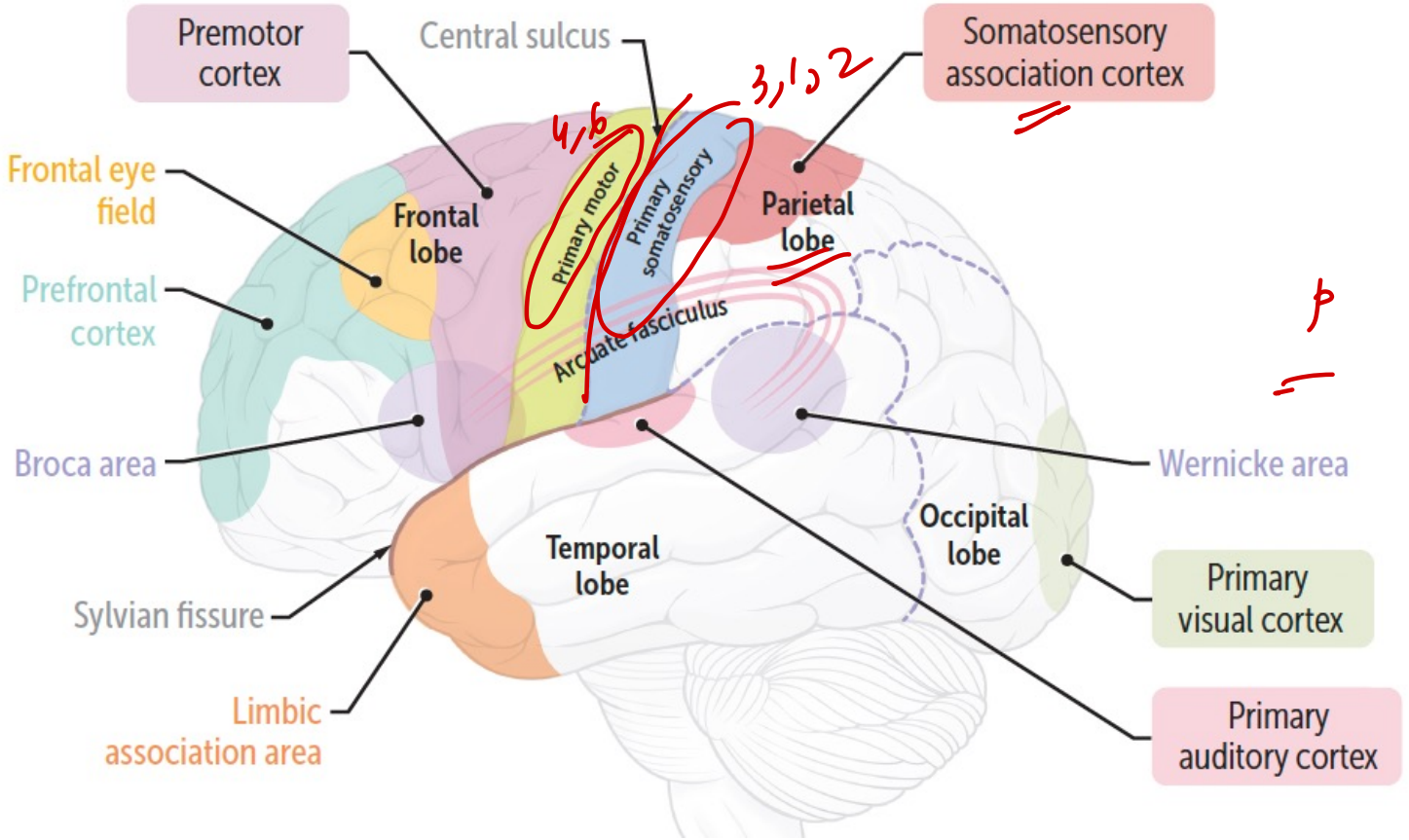


A. A

B. B

C. C

D. D


Premotor cortex
Central sulcus
Somatosensory association cortex
Frontal eye field
Prefrontal cortex
Broca area
Sylvian fissure
Limbic association area
Frontal lobe
Primary motor
Primary somatosensory
Parietal lobe
Arcuate fasciculus
Temporal lobe
Occipital lobe
Wernicke area
Primary visual cortex
Primary auditory cortex

33. A 30-year-old lady who is 2 weeks postpartum presents with headache, and acute episode of generalized seizures. The contrast-enhanced CT of the head is shown below. What is the drug of choice for the acute management of her condition?

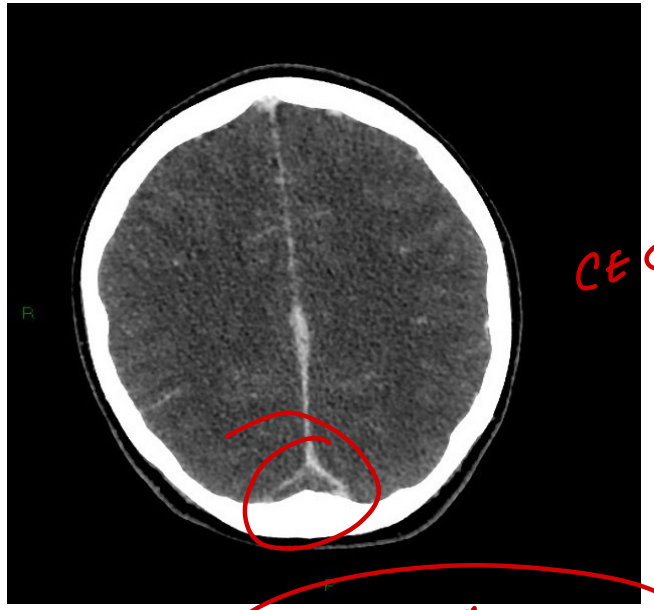
A. IV Labetalol

B. IV MgSo4 XX

C. LMWH

D. Aspirin

↓ f11 | f13



CECT

SSS Thrombosis

empty delta sign

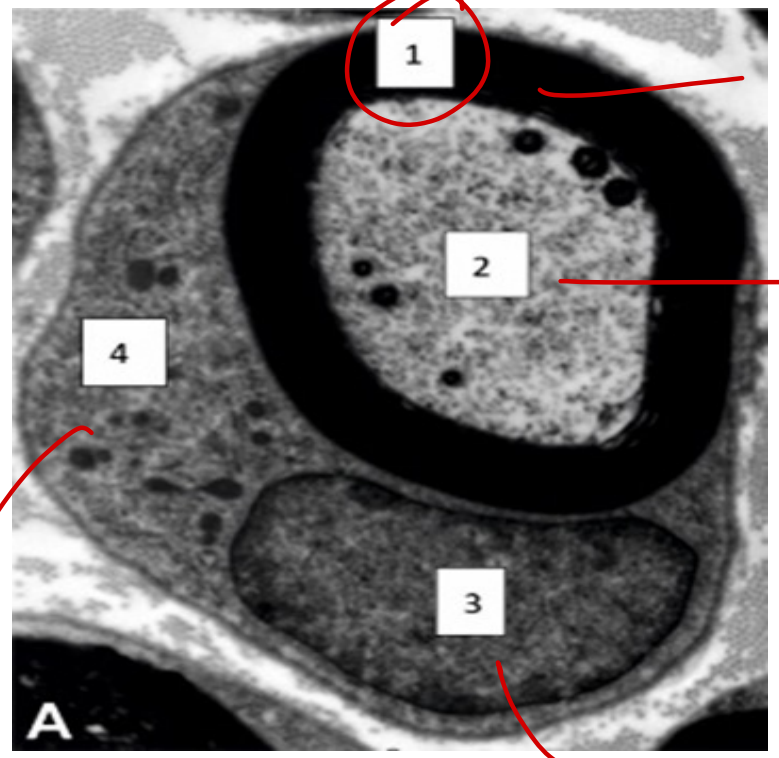
34. An electron microscopic picture of a cut section of a nerve fiber is given. What is the most commonly affected area in Guillain-Barre syndrome?

~~A.~~ 1

B. 2

C. 3

D. 4



35. A 5-year-old boy has developed persistent food-seeking behavior over the past few months. His mother initially thought that the boy was undergoing a growth spurt, but despite how much she fed him he never seemed satisfied. The patient has also started complaining of a headache and nausea in the morning. His physical examination is significant for BMI of 32 kg/m2. This patient's food-seeking behavior could be explained by a lesion causing hyperactivity of which hypothalamic nucleus?

A. Anterior

B. Lateral

C. Supraoptic

D. Ventromedial

lesion → inactivity

Lat → ↓

VM

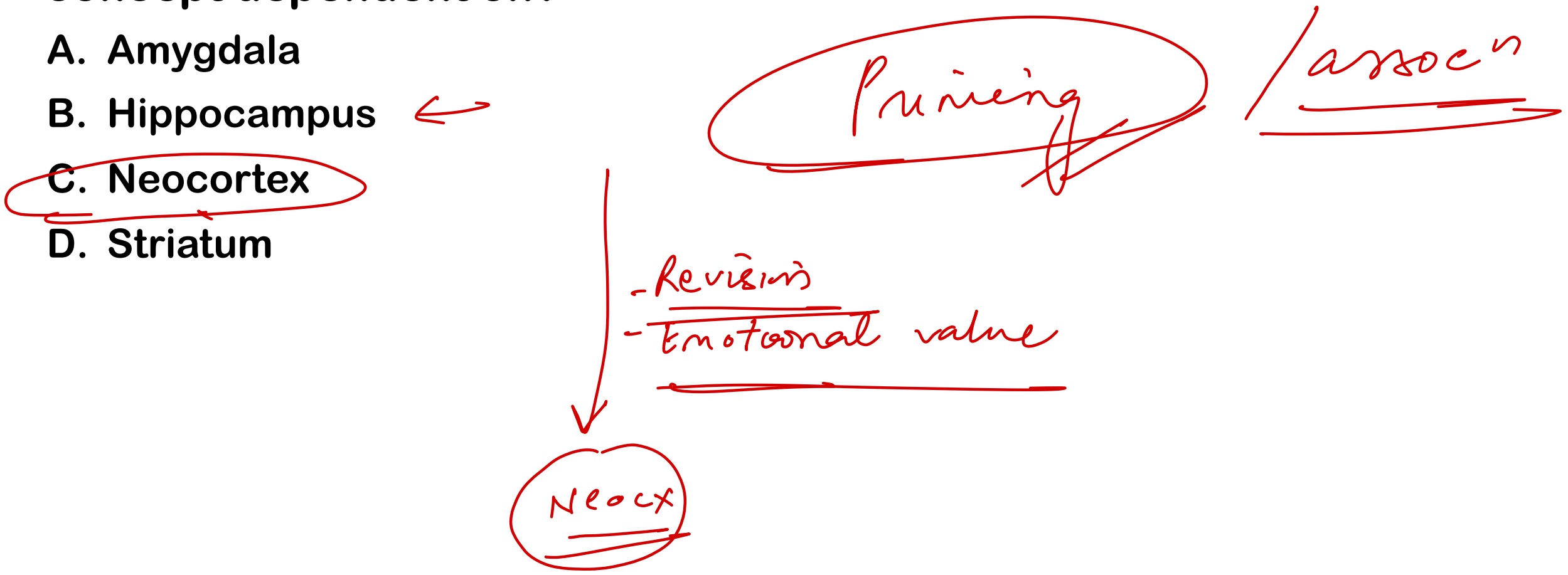
36. If you see the word "yellow," you'll likely recognize "banana" faster than "television" because yellow and banana are more closely linked in memory. Which of the following structures is this concept dependent on?

A. Amygdala

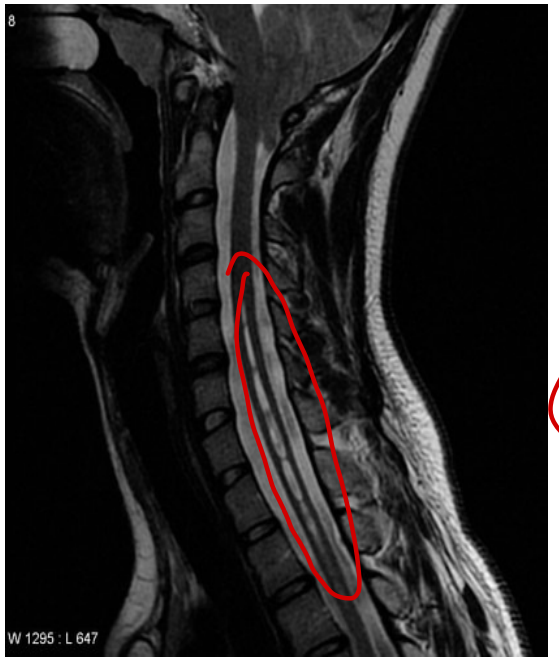
B. Hippocampus

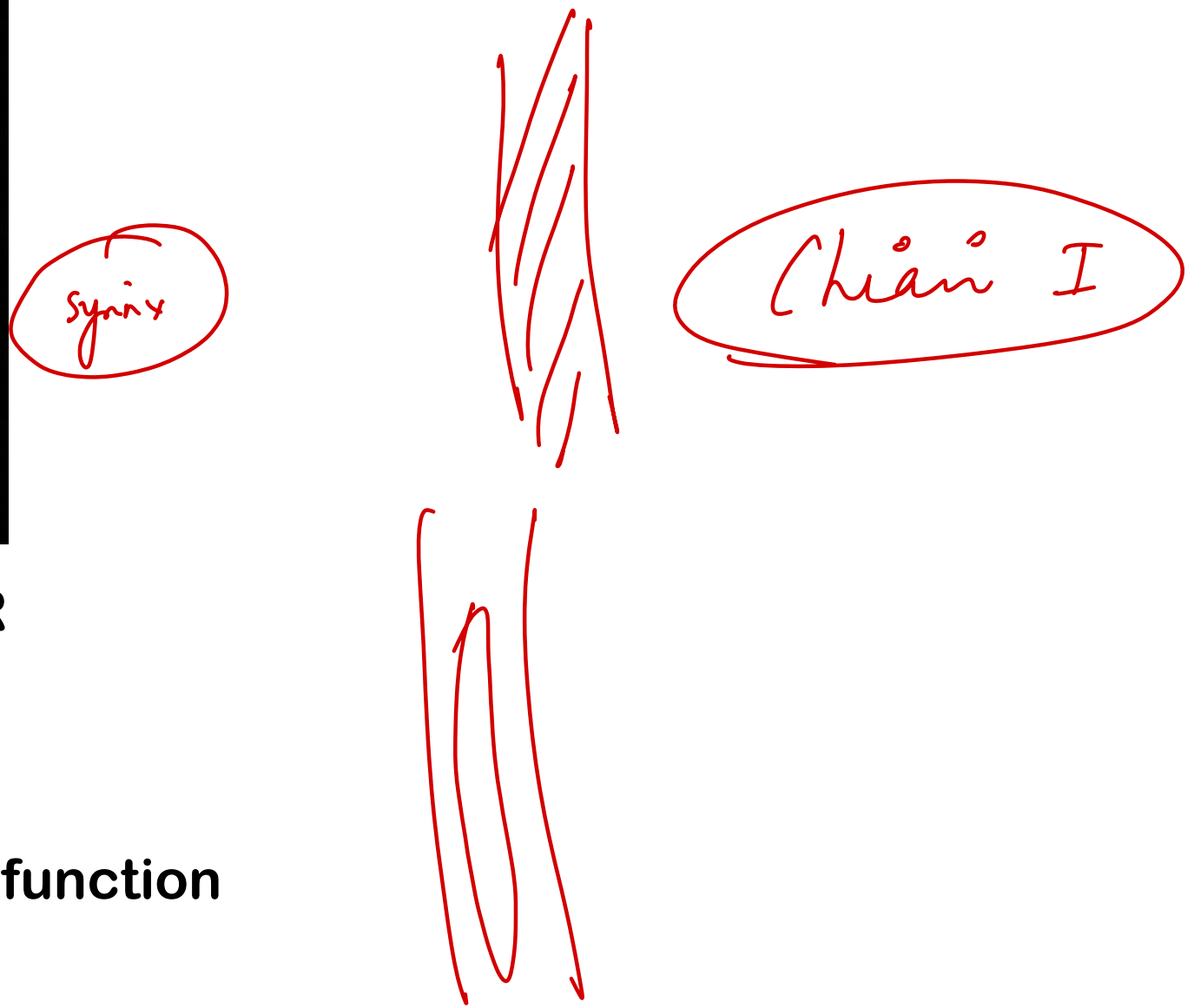
C. Neocortex

D. Striatum



37. What would be the likely "classical" presentation of this patient?





A. Romberg sign with loss of DTR

B. UMN + LMN features

C. Cape like distribution

D. Only preserved dorsal column function

38. Which of the following features are typically associated with delirium?

1. **Impaired consciousness**
2. **Altered sleep-wake cycle**
3. **Normal EEG**
4. **Carphologia**
5. **Autonomic Dysfunction**

PYQ .

abN — δ waves .

A. 1, 2, 3, 4, 5

B. 2, 3, 5

C. 1, 3, 5

D. 1, 2, 4, 5

39. A motorcyclist suffered a head injury 6 months back and presents with persistent memory deficits following injury. Choose the most appropriately matched option related to memory?

A. Hippocampus and implicit memory

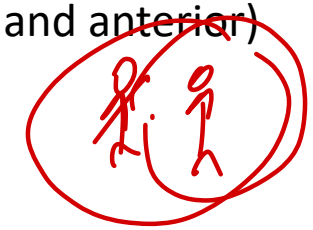
B. Neocortex and associative learning

C. Medial temporal lobe- Declarative memory

D. Angular gyrus- procedural memory

Declarative / Explicit Memory:

- **Semantic (factual):**
  - Prefrontal cortex
  - Temporal cortex (lateral and anterior)
- **Episodic (events):**
  - Hippocampus
  - Medial temporal lobe
  - Neocortex



Nondeclarative / Implicit Memory:

- **Procedural (skills, habits):**
  - Striatum
  - Cerebellum
  - Motor cortex
- **Priming and perceptual:**
  - Neocortex
- **Associative learning (classical conditioning):**
  - Amygdala
  - Cerebellum

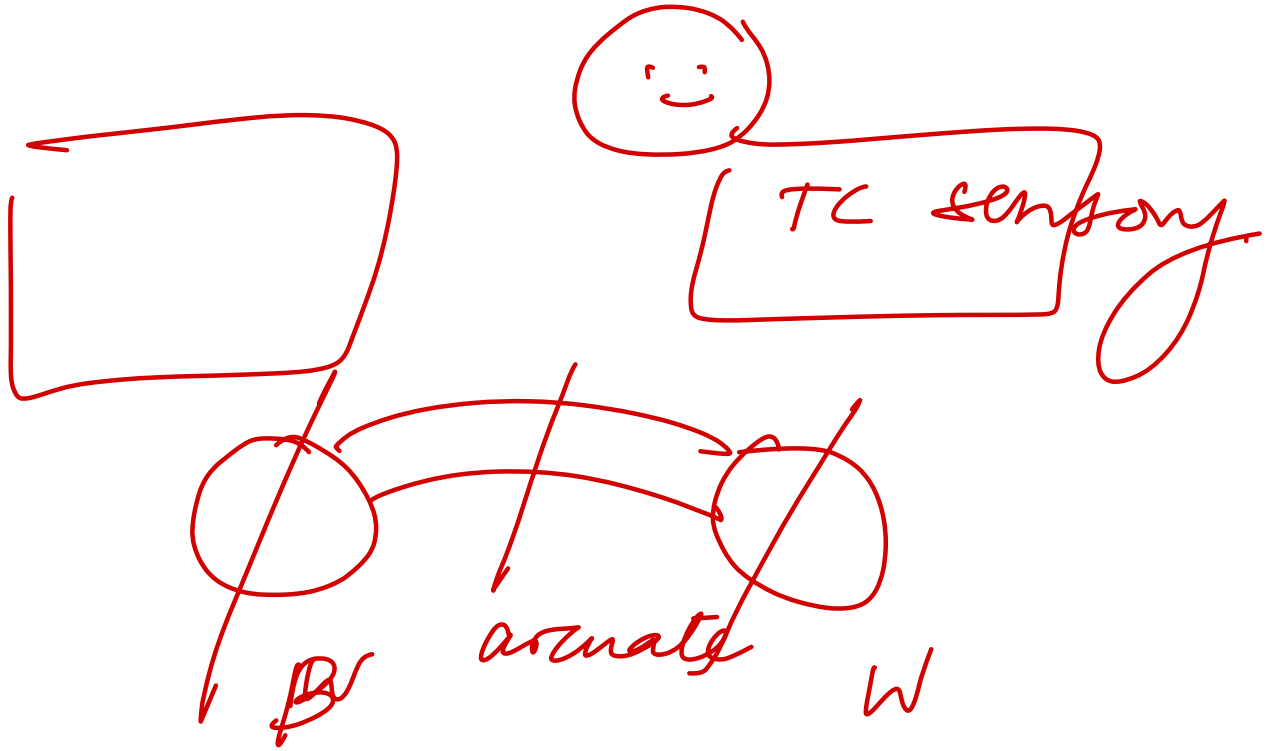
40. A 65 year old patient has normal fluency and repetition of speech but impaired naming and comprehension. What is the likely diagnosis?

A. Transcortical sensory aphasia

B. Transcortical motor aphasia

C. Conduction aphasia

D. Wernicke aphasia



41. A 22-year-old woman came to the hospital with complaints of excruciating paroxysmal pain on the right side of her lips, gums, and cheek. The episodes last for 2-3 min. Which of the following is incorrect regarding the primary drug used in the treatment of this condition?

A. It can cause agranulocytosis

B. It is a Chloride channel opener.

C. It also has anti-epileptic activity against focal seizures

D. It can lead to hyponatremia in the elderly

TN

Carbamazepine

SIADH

↓

Na⁻

42. 72-year-old man with a history of Parkinson disease comes to the OPD for follow-up. The patient has been taking carbidopa-levodopa since being diagnosed 5 years ago and has required increasing doses to control his symptoms. He is now taking the maximum dose but reports worsening stiffness and difficulty moving between his scheduled doses; these symptoms improve after he takes the medication. Entacapone is added to his treatment regimen. This drug is most likely to improve this patient's symptoms through which of the following mechanisms?

A. Decreasing peripheral levodopa degradation

B. Directly stimulating dopamine receptors

C. Enhancing the effect of endogenous dopamine

D. Inhibiting central muscarinic receptors

Dop +

COMT −

MAO

43. Thalidomide should not be used in which of the following conditions?

A. HIV-assosiated peripheral neuropathy

B. HIV-assosiated aphthous ulcers

C. Behcet syndrome

D. Erythema nodosum leprosum

S/e

Immunomodulator

44. A 36-year-old woman presents with a unilateral throbbing headache associated with nausea and vomiting. She has had similar episodes in the past where the headache usually lasts for 1-2 days. Bright light increases her discomfort and she prefers sitting in a dark room. Which of the following are used to prevent further episodes of this condition?

1. **Sumatriptan** acute.
2. **Propranolol**
3. **Naproxen** acute
4. **Topiramate**

A. 2 and 4

B. 1, 2 and 3

C. 1,2 and 4

D. 1, 2, 3 and 4

MIGRAINE (Acute)

First line: NSAID -oral

DOC: 5HT1B/1D+ : TRIPTANS → sc / oral

5HT1F + : LASMIDITAN (acute)

Prophylaxis:

Propranolol DOC

Topiramate

Valproate

New drugs:

CGRP-: RimeGEPANT, AtoGEPANT (oral-acute/prophylaxis)

ERENUMAB, GALANEZUMAB, FREMANEZUMAB (monthly sc injection),

EPTINEZUMAB (quarterly iv infusion)

CLUSTER HEADACHE

DOC: 100% O_2 12L/min + Triptans

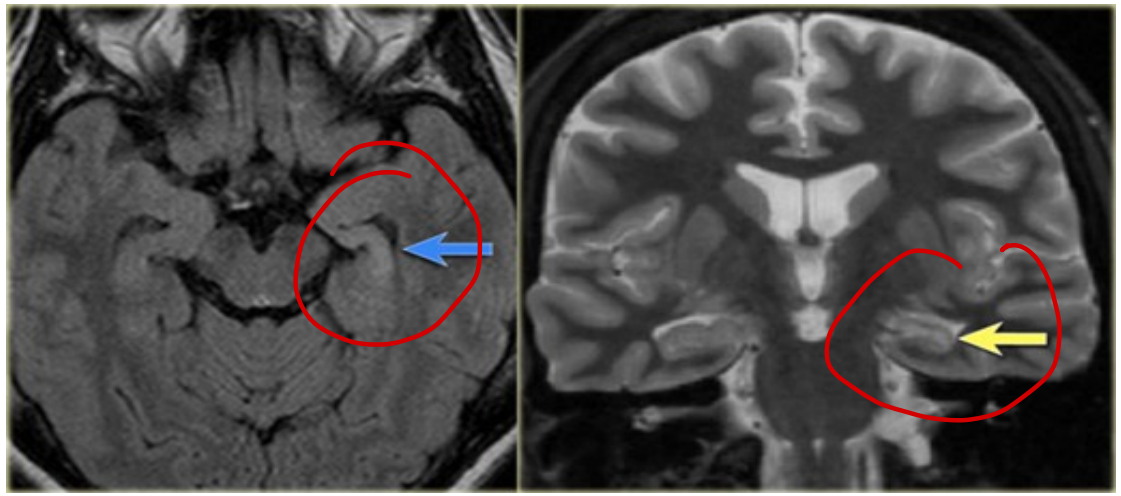
Prophylaxis: → CCB

TENSION HEADACHE

DOC: NSAIDs

Prophylaxis: >15/month – TCA

45. Which of the following statements is false regarding the following pathology:



MTS
i/L atrophy ↑

A. It results in focal seizures with dyscognitive features
B. The person experiences an aura before the seizure
C. It is associated with a family history of epilepsy
D. Seizures can be controlled with anticonvulsants such as carbamazepine

refractory

46. A middle-aged woman presents with progressive atrophy and weakness in her hands and forearms. On examination, she is found to have spasticity of the legs. Which of the following is the least likely feature to suggest ALS?

UMN + LMN

A. Babinski positive

B. Spontaneous fasciculations

C. Impaired bowel and bladder function — preserved.

D. Preserved ocular mobility

X Su loss.

47. A patient is presenting with a staggering gait and nystagmus (Rhomberg sign +ve) after a road traffic accident. Which lobe of cerebellum is affected?

A. Flocculonodular

B. Dentate

C. Anterior lobe

D. Vermis

PYQ

Cerebellar Part	Connections & Function	Lesion Features
Flocculonodular lobe (vestibulocerebellum)	Linked with vestibular nuclei, maintains balance & eye movements	**Truncal ataxia, staggering gait, nystagmus, positive Romberg**
Anterior lobe (spinocerebellum)	Proprioceptive input from spinal cord, regulates posture & leg coordination	**Gait ataxia**, often in **alcoholics** (anterior lobe syndrome)
Vermis	Controls axial trunk muscles	**Truncal ataxia, broad-based gait**
Dentate nucleus (lateral hemisphere / cerebrocerebellum)	Coordinates planning & initiation of voluntary movement via corticopontocerebellar pathway	**Dysmetria, intention tremor, dysdiadochokinesia**

48. In the below question mechanical receptors are given with their functions. Choose the correctly matched pair.

A. Pacinian Corpuscle - Fast Vibration

B. Ruffini - Fine touch

C. Meissner – Stretch

D. Merkel - Slow Vibration

49. A 70-year-old right-handed man is brought to the emergency department due to sudden onset of right-sided weakness and urinary incontinence that began about 10 hours ago. On examination, there is 4/5 strength in the right upper extremity, 1/5 strength in the right lower extremity, and a Babinski sign on the right side. Sensation is decreased throughout the right foot and leg. Which of the following is the most likely diagnosis of this patient?

A. Left Anterior cerebral artery stroke.

B. Lacunar stroke

C. Left middle cerebral artery stroke.

D. Right ACA stroke

50. A 5-year-old boy is brought to the emergency department because of a 2-day history of lower leg weakness, swallowing difficulty, and drooling of saliva. He has not yet received any childhood vaccinations. Two days after admission, the patient develops shortness of breath. Pulse oximetry shows an oxygen saturation of 64%. Despite resuscitative efforts, the patient dies of respiratory failure. At autopsy, examination of the spinal cord shows destruction of the anterior horn cells. Neurological examination of this patient would have most likely shown which of the following findings?

A. Positive Babinski sign UMN

B. Clasp knife spasticity UMN

C. Hyporeflexia

D. Sensory loss X

Polio

LMN

51. A 4-year-old boy presents with fever, headache, irritability, nuchal rigidity, and photophobia. CSF analysis shows:

- **Glucose: 60 mg/dL**
- **Protein: 80 mg/dL**
- **RBCs: 2/mm³**
- **WBCs: 85/mm³**

(10% neutrophils, 70% lymphocytes, 20% monocytes)

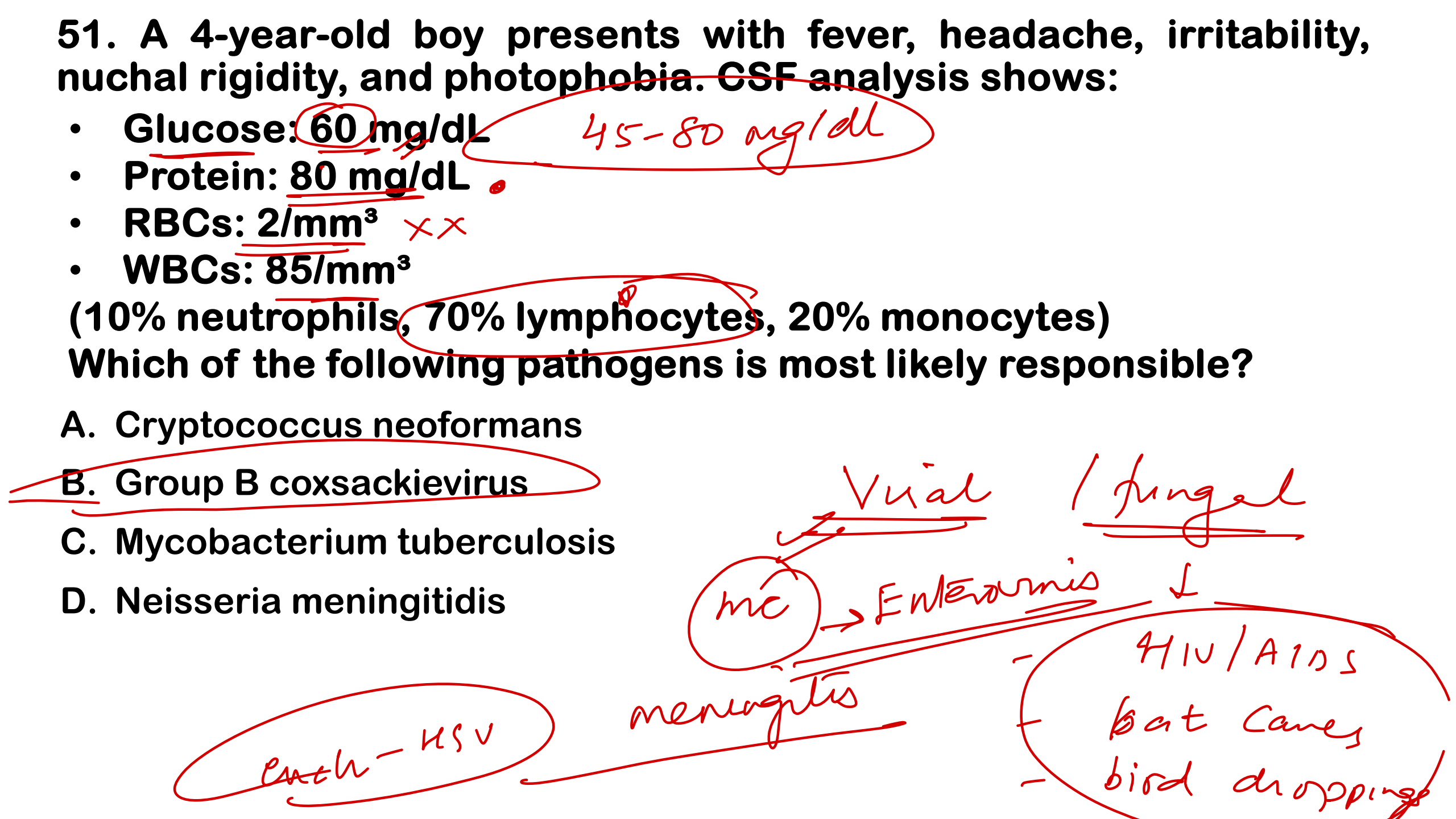
Which of the following pathogens is most likely responsible?

A. Cryptococcus neoformans

B. Group B coxsackievirus

C. Mycobacterium tuberculosis

D. Neisseria meningitidis



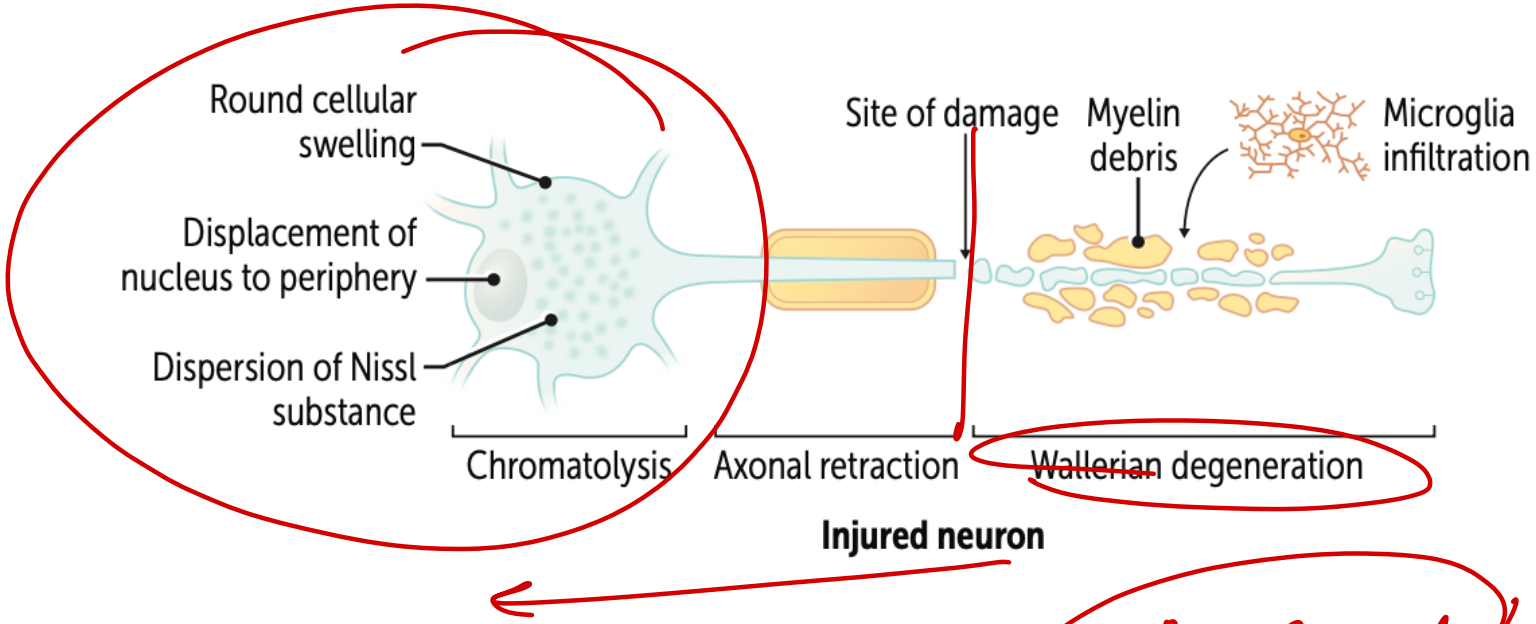
52. An investigator is studying cellular repair mechanisms in various tissues. One of the samples being reviewed is from the anterior horn of the spinal cord of a patient who was involved in a snowboard accident. Pathologic examination of the biopsy specimen shows dispersion of the Nissl bodies, swelling of the neuronal body, and a displacement of the nucleus to the periphery in numerous cells. Which of the following is the most likely explanation for the observed findings?

A. Neurodegenerative changes

B. Wallerian degeneration

C. Central chromatolysis

D. Reactive astrogliosis



peripheral

Central : gliosis
Scar

53. All of the following are tauopathies, except:

A. Pick's disease
B. Corticobasal degeneration
C. Progressive supranuclear palsy
D. REM behavioral disorder

LBD

Synucleinopathies:

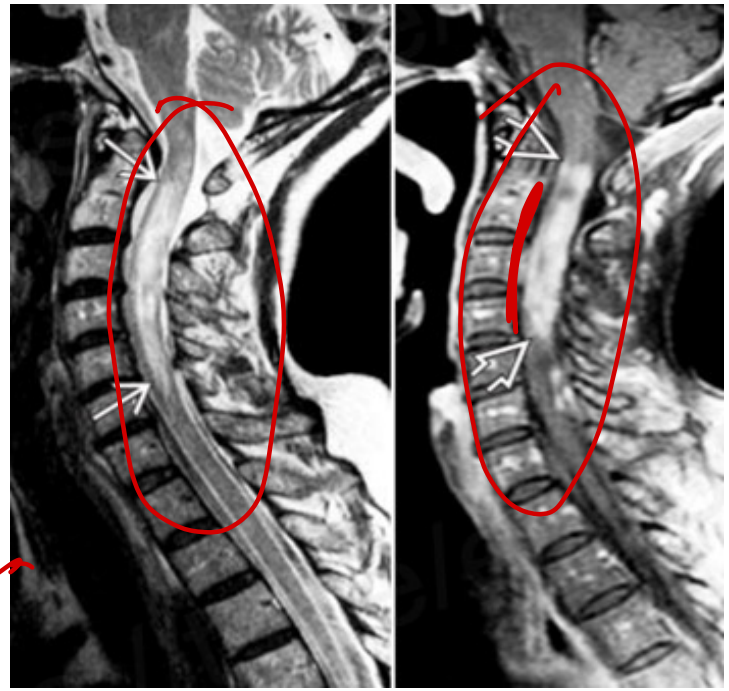
- Parkinson's disease
- Dementia with Lewy bodies
- Multiple system atrophy

Tauopathies:

- Alzheimer's disease
- Progressive supranuclear palsy
- Corticobasal degeneration
- Pick's disease
- Chronic traumatic encephalopathy
- Pantothenate kinase-associated degeneration
- Subacute sclerosing panencephalitis (SSPE)
- Down syndrome

54. A 26-year-old female patient presents with 6/60 visual acuity in one eye and 6/18 in the other eye. She has recurrent episodes of diminution of vision which recovers on treatment with steroids. MRI shows the following changes. What is the most probable diagnosis?

A. Hereditary spastic quadriplegia
B. Subacute combined degeneration
C. Neuromyelitis optica
D. Multiple sclerosis



LETM
NMO
>3
vert seg

short segm
ON - U/L asymm

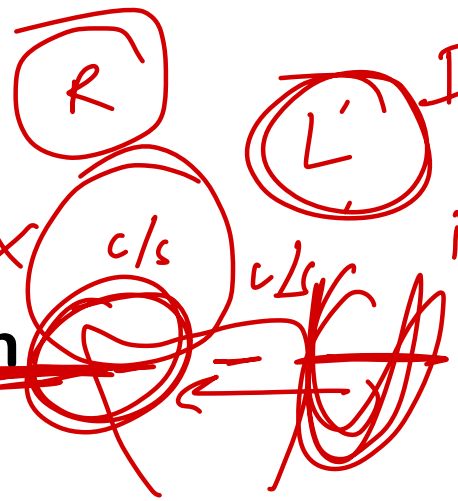
55. A previously healthy 51-year-old man is brought to the emergency department because of confusion for 2 hours. His wife reports that he fell and hit his head while changing a ceiling light the previous evening. On arrival, he is unconscious. His temperature is 37.1°C (98.8°F), pulse is 54/min, respirations are 8/min and irregular, and blood pressure is 198/106 mm Hg. The right pupil is dilated and fixed; the left pupil is round and reactive to light. There is extension of the extremities to painful stimuli. He is intubated and mechanically ventilated. A mannitol infusion is begun. A noncontrast CT scan of the brain shows herniation of the right medial temporal lobe. Which of the following is the most likely additional finding in this patient?

A. Right-sided hemiplegia

B. Bilateral spasticity

C. Bilateral lower limb paralysis

D. Right eye esotropia and elevation



IIIrd - Hutchinson's

hemiplegia

Kesnohan notes

56. Disorders of autonomic function should be considered in patients with:

1. **Unexplained orthostatic hypotension**
2. **Dysuria**
3. **Hyperhidrosis**
4. **Urinary incontinence**
5. **Dementia**

A. 3 and 5

B. 1, 3 and 4

C. 2 and 4

D. 1, 2 and 5

Autonomic dysfn PD

System	Features
Cardiovascular	Orthostatic hypotension, tachycardia, exercise intolerance
Sudomotor	Hyperhidrosis or anhidrosis, heat intolerance
Gastrointestinal	Gastroparesis, constipation, diarrhea, swallowing difficulty
Genitourinary	Urinary incontinence/retention, erectile dysfunction, vaginal dryness
Pupillary	Abnormal pupil responses, difficulty with light adaptation
Other	Emotional lability, temperature dysregulation

57. In a patient with Guillain-Barre syndrome, chronic inflammatory demyelinating polyneuropathy is suspected when_____.

A. GBS deteriorates >8 weeks after onset or relapses at least two times

B. GBS deteriorates >5 weeks after onset or relapses at least three times

C. GBS deteriorates >9 weeks after onset or relapses at least three times

D. GBS deteriorates >5 weeks after onset or relapses at least two times

Feature	GBS (AIDP)	CIDP
Onset	Acute, monophasic	Insidious, chronic/progressive
Progression	≤ 4 weeks	≥ 8–9 weeks
Relapses	Rare, < 2	≥ 3 relapses
Treatment	IVIG / Plasmapheresis	Steroids, IVIG, plasmapheresis (long-term)

58. In patients with multiple sclerosis, which of the following is used to determine neurological impairment?

A. Modified Well's score → DVT

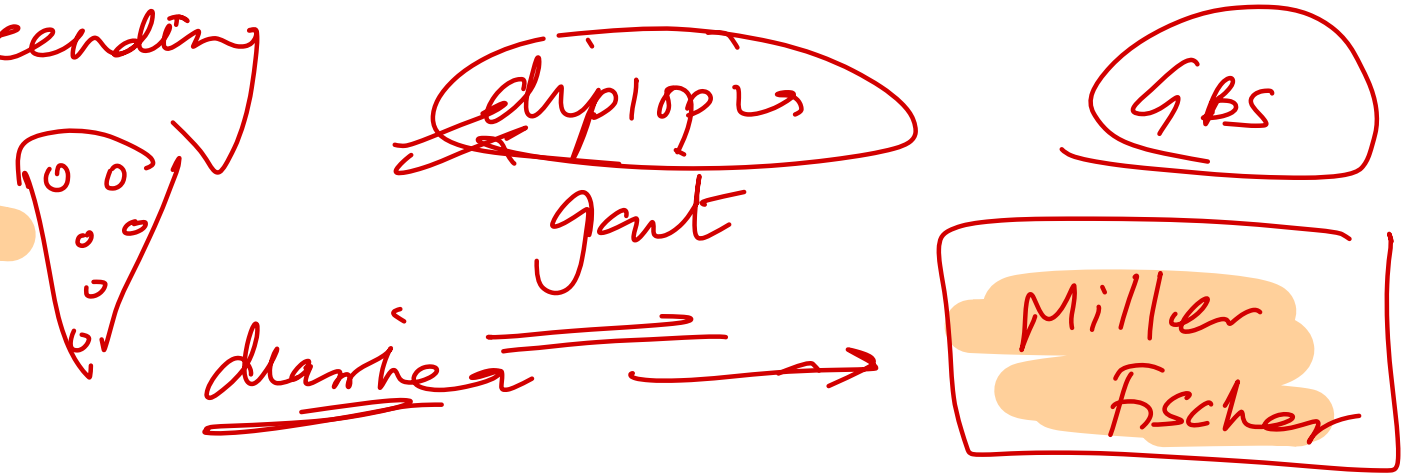
B. Hess and Hunt's scale → SAH

C. Kurtzke expanded disability status scale → EDSS

D. Revised McDonald criteria → dx

60. 42-year-old woman comes to the office due to worsening double vision and gait unsteadiness. She states she had cramping abdominal pain and diarrhoea 2 weeks ago after an outdoor picnic which spontaneously resolved after 3 days. The double vision began 4 days ago and is persistent and progressive. She has had no fever, headache, neck pain, photophobia, or bowel or bladder dysfunction. On physical examination, she is fully alert and oriented with normal memory, speech, and language comprehension. There is mild ptosis of the right eye with weakness of the medial and upward gaze. Left eye movements are normal. Bilateral lower-extremity weakness with loss of deep tendon reflexes is present. Bilateral upper-extremity muscle strength, reflexes, and coordination are normal. Sensation to touch and pinprick is normal throughout. Which of the following is the most likely cause of this patient's current condition?

A. Botulinum toxin ingestion
B. Dietary thiamine deficiency
C. Immune-mediated nerve injury
D. Neuroinvasive virus infection



63. 61-year-old male patient comes to the office complaining of involuntary shaking of his hands. It started on the right side but now his left handshakes as well. The shaking disappears with purposeful activity and worsens with emotional stress. He does not have a family history of tremors. Physical examination reveals a resting hand tremor with a frequency of 4-5 cycles/sec. There is some muscle rigidity of both arms. His gait and posture are normal. His mini mental status exam yields a score of 30/30. Which of the following is the most appropriate treatment for this patient?

A. Clozapine
B. Lorazepam
C. Propranolol
D. Trihexyphenidyl

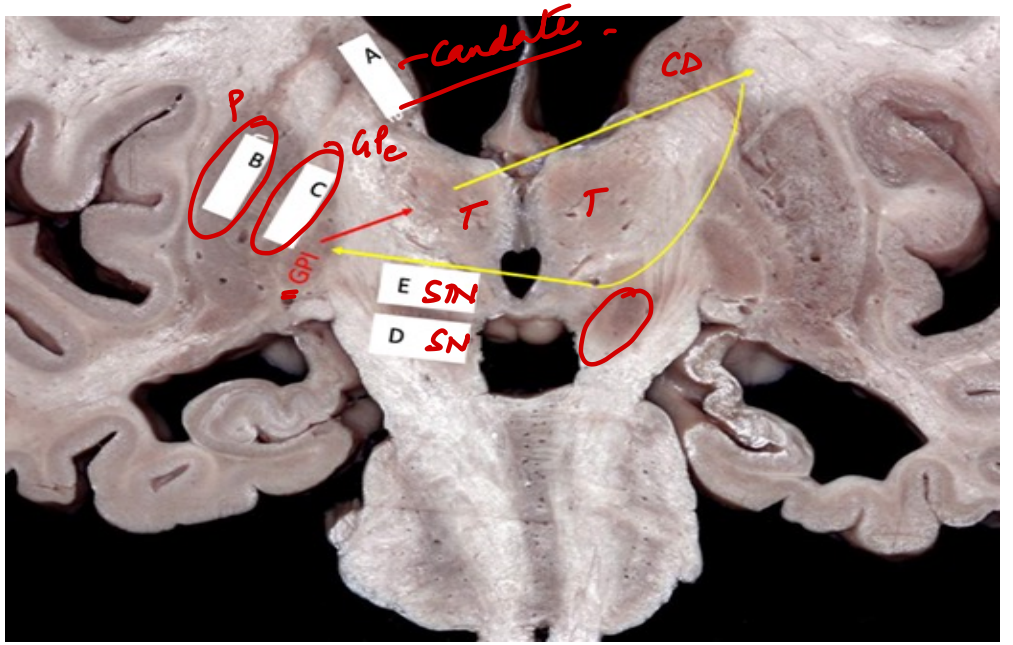
PD

anticholinergic

tremor

64. Match the following:

1. Preferred site for DBS for tremor reduction
2. Hemiballismus results from a lesion at this site
3. Chorea results from a lesion at this site
4. Athetosis is a result of a lesion at this site
5. Parkinsonism occurs due to defect here



A. 1-A, 2-D, 3-A, 4-B, 5-E

B. 1-E, 2-E, 3-A, 4-C, 5-D

C. 1-D, 2-E, 3-A, 4-C, 5-D

D. 1-D 2-A, 3-C, 4-B, 5-E

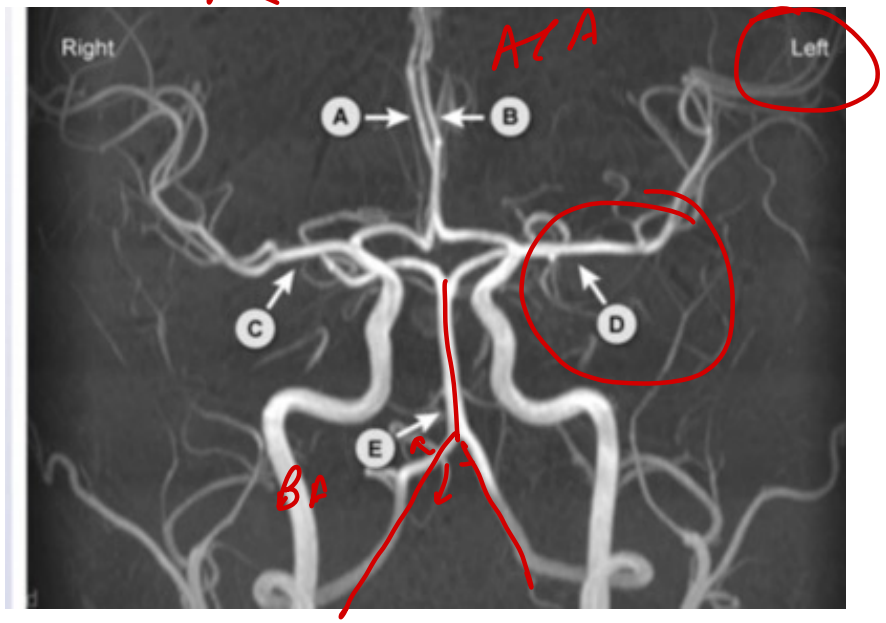
65. 54-year-old man is brought to the emergency department by his wife after he develops dificulty speaking. When asked about the onset of his symptoms, the patient slowly responds with "weak... morning..." and becomes very frustrated. On examination, he is able to state his first name but with difficulty, and correctly points to different body parts on command. This patient's speech difficulties are most likely caused by a lesion affecting which of the following vessels?

A. A

B. E

C. C

D. D



BROCA'S

MCA

66. Ischemia occurs in the brain when the cerebral blood flow falls below _____.

A. 20 mL/100 g/min

B. 50 mL/100 g/min

C. 40 mL/100 g/min

D. 30 mL/100 g/min

CBF (mL/100 g/min)	Brain Status
> 50	Normal perfusion
20–40	Functional impairment onset
< 20	Ischemia and irreversible damage starts

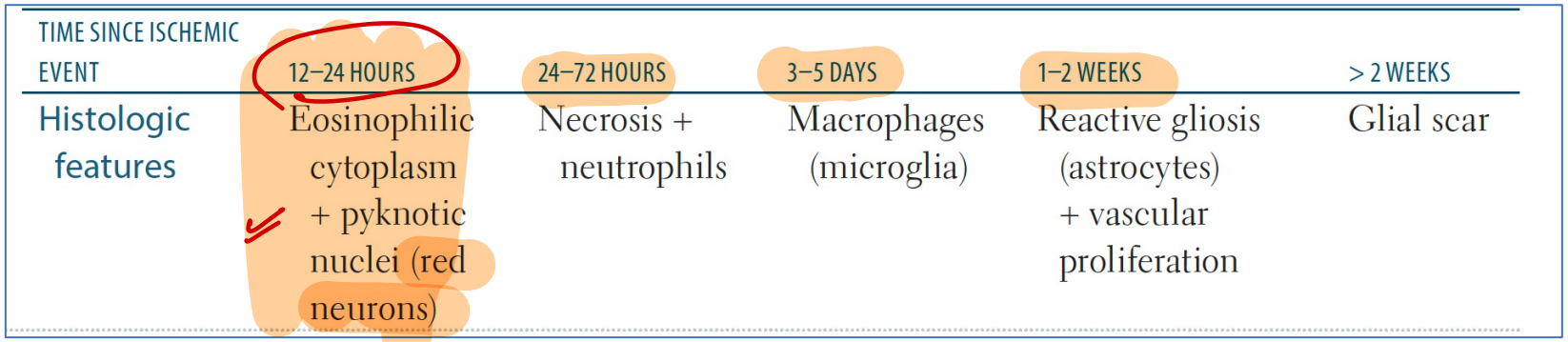
67. A 90-year-old female suffers an ischemic stroke in the context of diffuse atherosclerotic disease and dies four days later despite appropriate treatment. The predominant cell type seen on postmortem brain biopsy functions most similarly to which of the following?

A. Neutrophil

B. Eosinophil

C. T-lymphocyte

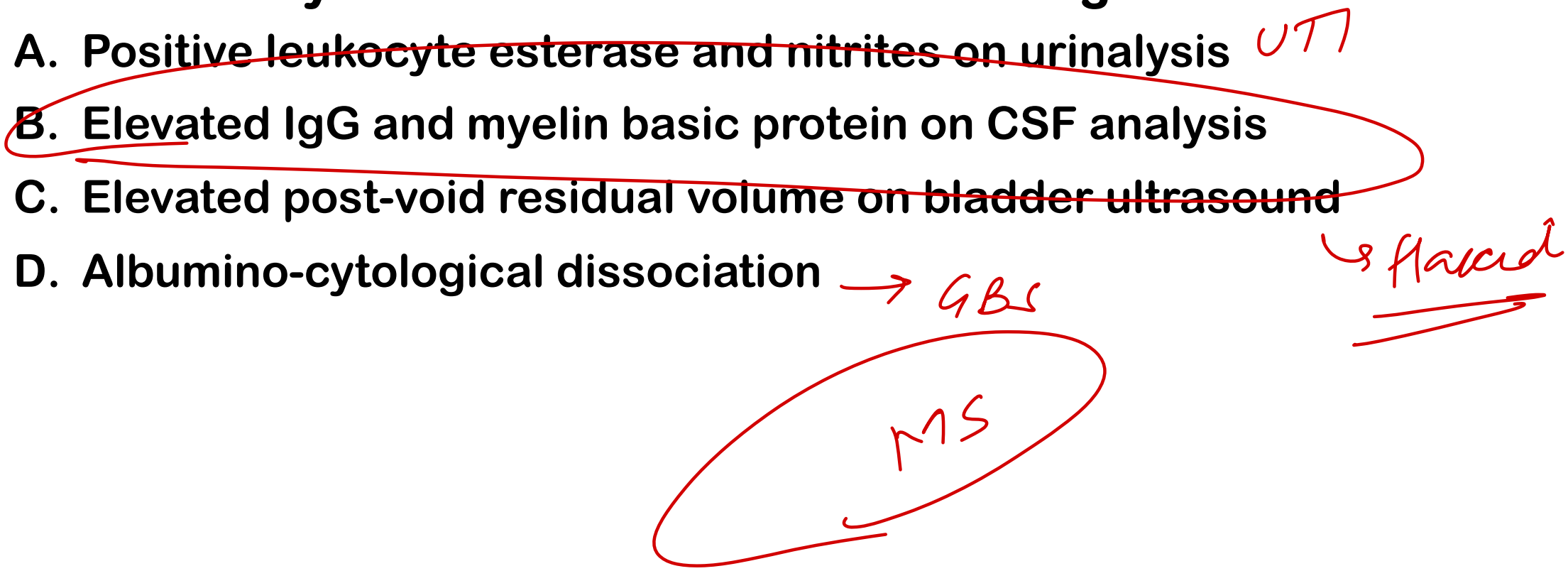
D. Monocyte



TIME SINCE ISCHEMIC EVENT	12–24 HOURS	24–72 HOURS	3–5 DAYS	1–2 WEEKS	> 2 WEEKS
Histologic features	Eosinophilic cytoplasm + pyknotic nuclei (red neurons)	Necrosis + neutrophils	Macrophages (microglia)	Reactive gliosis (astrocytes) + vascular proliferation	Glial scar

68. A 50-year-old gravida 2, para 2 female presents with urinary incontinence. She reports daily episodes of a sudden need to void and has started to wear adult diapers. She also has intermittent motor and sensory loss, decreased visual acuity with painful eye movements, and worsening symptoms in summer. Further workup is most likely to reveal which of the following?

A. Positive leukocyte esterase and nitrites on urinalysis
B. Elevated IgG and myelin basic protein on CSF analysis
C. Elevated post-void residual volume on bladder ultrasound
D. Albumino-cytological dissociation



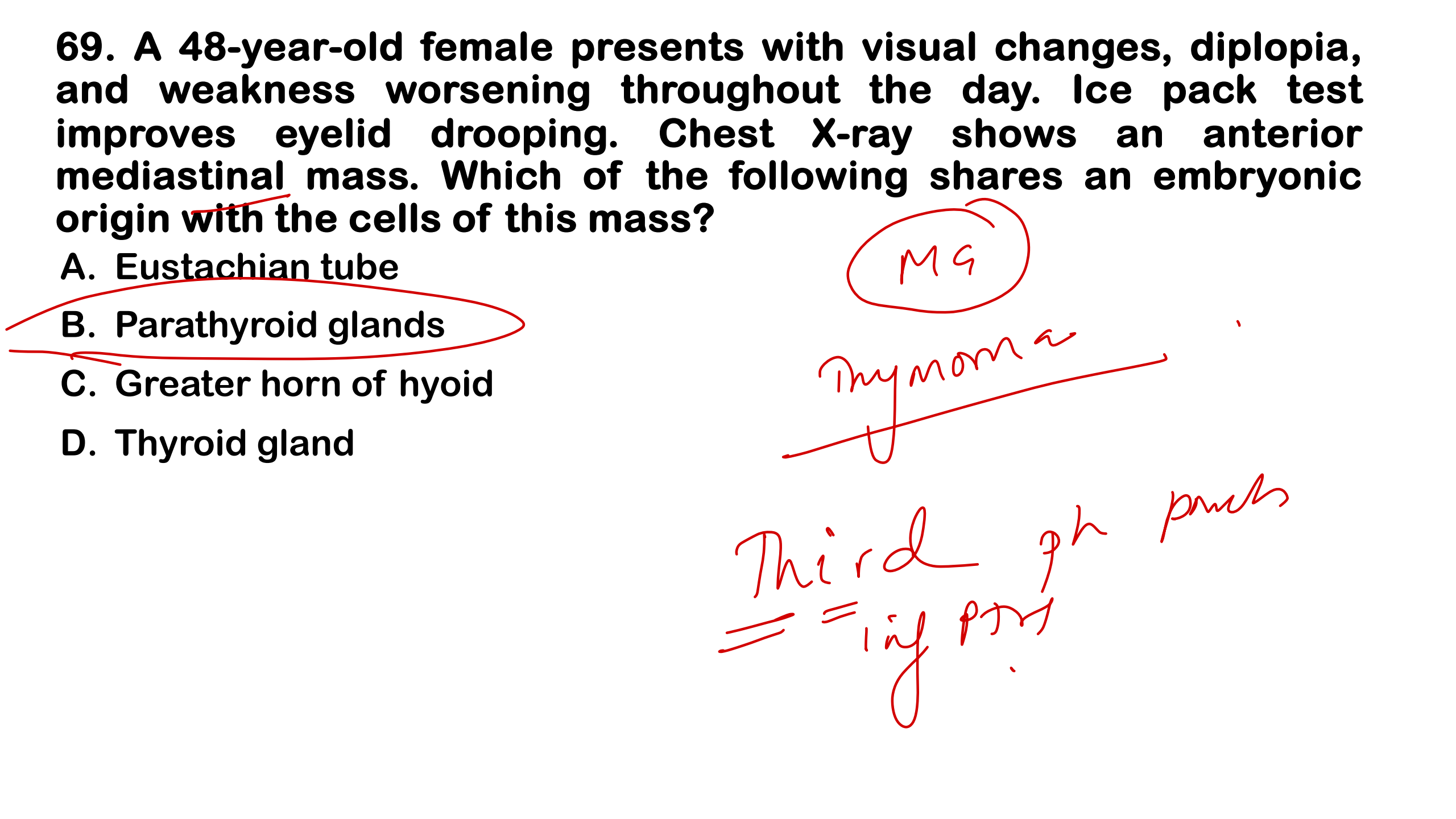
69. A 48-year-old female presents with visual changes, diplopia, and weakness worsening throughout the day. Ice pack test improves eyelid drooping. Chest X-ray shows an anterior mediastinal mass. Which of the following shares an embryonic origin with the cells of this mass?

A. Eustachian tube

B. Parathyroid glands

C. Greater horn of hyoid

D. Thyroid gland



90. A 50-year-old female presents with burning sensations and an irresistible urge to move her legs at night, relieved by movement. Which is the first-line drug that can be prescribed?

A. Clonazepam

B. Gabapentin

C. Riluzole

D. Benztropine

91. Which of the following drugs act on sodium channels and potentiate slow sodium inactivation?

A. Topiramate

B. Lacosamide

C. Phenytoin

D. Lamotrigine

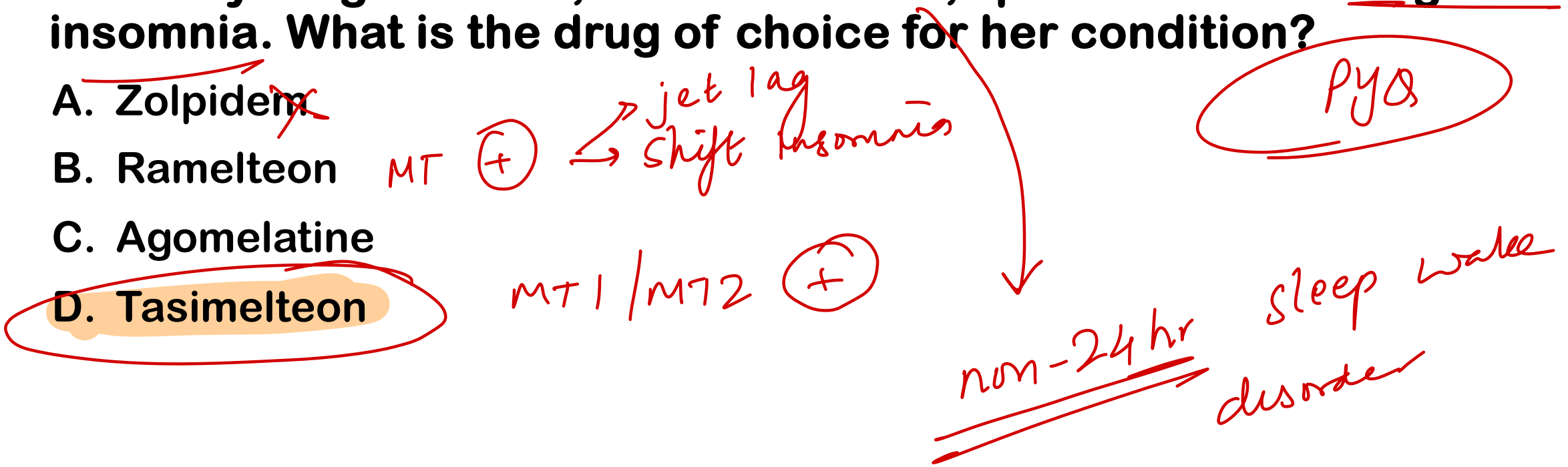
92. A young woman, who is blind, presents with nighttime insomnia. What is the drug of choice for her condition?

A. Zolpidem

B. Ramelteon

C. Agomelatine

D. Tasimelteon



96. Which of the following drugs can be used in diabetic neuropathy, post herpetic neuralgia and spinal cord injury?

A. Pregabalin

B. Carbamazepine

C. Amitriptyline

D. Phenytoin

97. Which is the drug used for refractory intractable rheumatic chorea?

A. Haloperidol - DOC

B. Sodium valproate Refractory

C. Diazepam

D. Probenecid

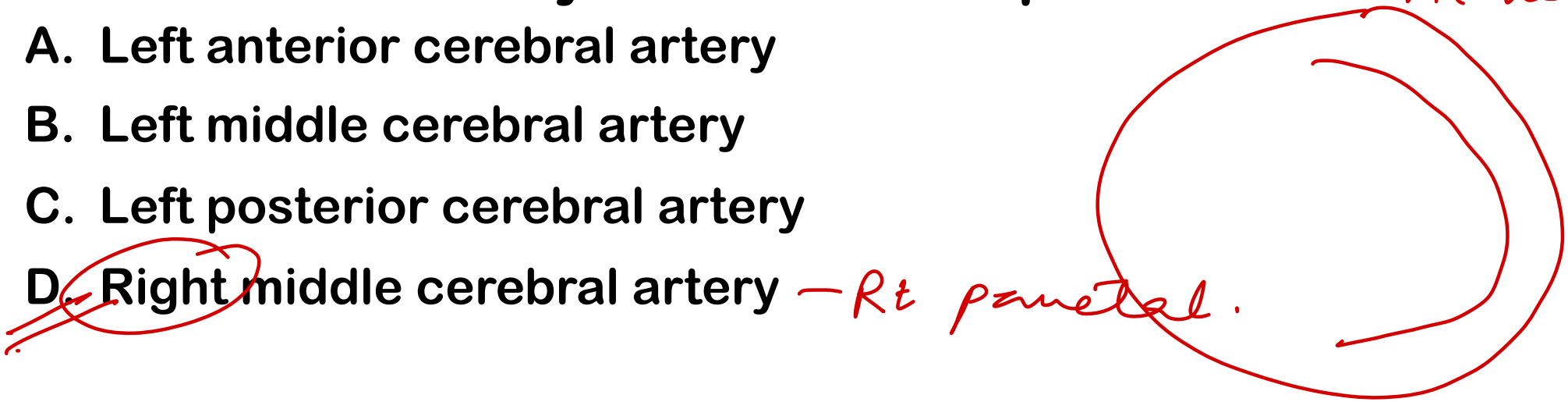
98. A 72-year-old right-handed male is brought to the emergency department by his daughter. According to her, he had only shaved the right half of his face this morning. The patient displays poor insight into this behavior, although there are no obvious deficits in comprehension, speech, and repetition. His past medical history includes hypertension, which is well controlled with labetalol. Physical exam suggests intact comprehension, speech, and repetition. Sensation is grossly intact bilaterally, with no focal motor deficits appreciated. However, when asked to draw a clock face, he omits the numbers 8, 9, 10, and 11. Which of the following vessels is most likely affected in this patient?

A. Left anterior cerebral artery

B. Left middle cerebral artery

C. Left posterior cerebral artery

D. Right middle cerebral artery



99. A 40-year-old female is brought to the emergency department due to progressive dyspnea and fatigue for the past two days. One week prior, she was diagnosed with a urinary tract infection and subsequently treated with ciprofloxacin. She also reports a one-month history of intermittent fatigability that often worsens throughout the day and improves with rest. She denies fevers, weight loss, diarrhea, or sick contacts. Vital signs include a temperature of 36.9°C (98.5°F), blood pressure of 140/88 mmHg, heart rate of 94 beats/min, and shallow respirations of 22 breaths/min. Oxygen saturation is 91% on room air. Lungs are clear to auscultation bilaterally with accessory muscle use, and paradoxical abdominal wall motion is noted on inspiration. Achilles and patellar reflexes are 2+ bilaterally with decreased muscle strength in the upper and lower extremities. Arterial blood gas sampling is performed with the following results:

pH: 7.24

pCO2: 60 mmHg

pO2: 90 mmHg

Bicarbonate: 26 mEq/L

Based on this patient's presentation, which of the following is the most likely diagnosis?

A. Guillain-Barré syndrome

B. Myasthenic crisis

C. Polymyositis

D. Tetanus

100. A team of genetics researchers is working to develop a new gene therapy targeting the downstream effects of Alzheimer disease. They sought out and identified multiple candidate genes through genome-wide association studies. A complete meta-analysis of studies involving autosomal dominant inheritance patterns using linkage-based methodology was reviewed to isolate relatively large culprit regions on chromosomes. Over twenty-nine variants were found to provide a statistically significant effect for increasing the odds of removal of dysfunctional beta-amyloid plaques. Of these, the research team discovered one candidate gene variant, which provided a greater conferred risk for lifetime development of sporadic Alzheimer disease than all other candidate genes. Which of the following confers the most significant risk for the development of Alzheimer disease?

A. Multiple trinucleotide repeats of CAG – HC

B. Mutation of the LDLR gene on chromosome 19 – Familial Sporadic –

C. One copy of the APOE E4 gene on chromosome 19

D. Two copies of the APOE E2 gene on chromosome 19

59. What is the most common cause of death in patients with rheumatoid arthritis?

A. Atlantoaxial subluxation PYQ , - paraplegia

B. Interstitial lung disease

C. Coronary artery disease

D. Gastrointestinal bleeding

Feature of RA	Most common
Involved joints	MCP (spared - DIP)
Spine involvement	altanto axial C1-C2
Extra-articular manifestation	Sc nodules
Cardiac manifestation	pericarditis
Valvular abnormality	MR
Pulmonary manifestation	pleuritis
Hematological manifestation	Anemia of chr D
Ocular manifestation	KCS. > scleritis
Lymphoma	DLBCL
Cause of death	♡ arrest – CAD.

61. An elderly man presents with clinical findings are shown in the image. What is the most likely diagnosis?

A. Septic arthritis

B. Osteoarthritis

C. Psoriatic arthritis

D. Rheumatoid arthritis

arthritis mutilans

Sausage digit

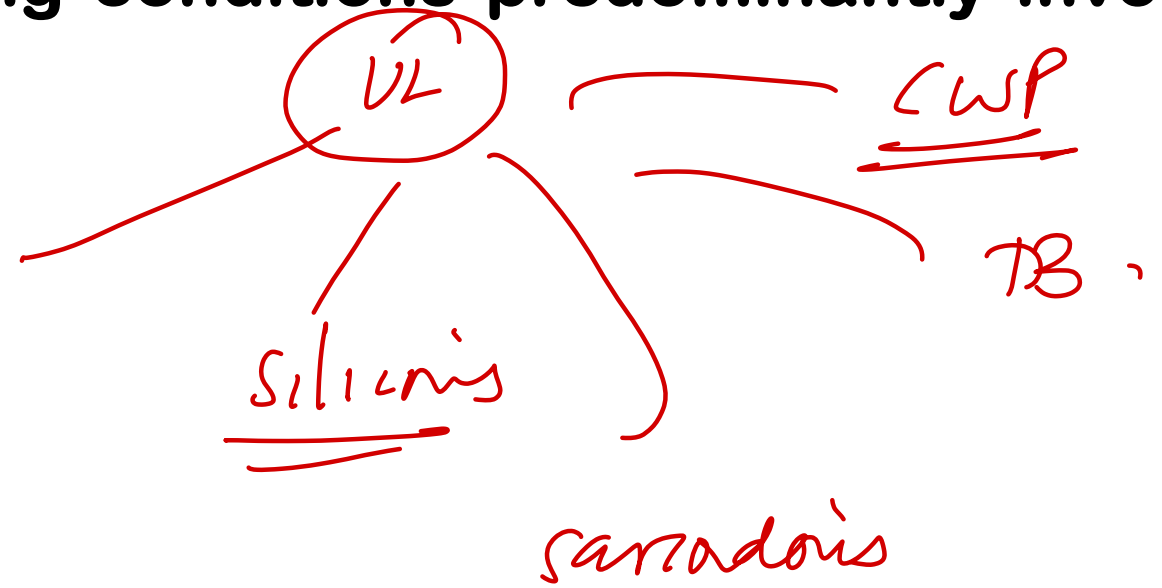
62. Which of the following conditions predominantly involve the upper lobe of the lung?

A. Scleroderma ILD

B. Ankylosing spondylitis

C. Asbestosis LL

D. Rheumatoid arthritis ILD



70. Which of the following is not a first-line drug for the management of a patient with rheumatoid arthritis?

A. Sulfasalazine

B. Hydroxychloroquine

C. Methotrexate

D. Azathioprine

Leflunomide

C-DMARDs.

71. A 32-year-old woman comes to the OPD due to a 3-month history of painful, swollen wrists and knees. She also has joint stiffness, which is worse upon wakening and limits her daily activities. The patient's only other medical condition is hypothyroidism for which she takes levothyroxine. Plain radiographs of the joints show joint space narrowing and marginal erosions. Which of the following cytokines are primarily involved in the pathogenesis of this patient's joint destruction?

A. IL-1 and tumor necrosis factor-alpha

B. IL-2 and interferon gamma

C. IL-4 and IL-5

D. IL-10 and transforming growth factor-beta

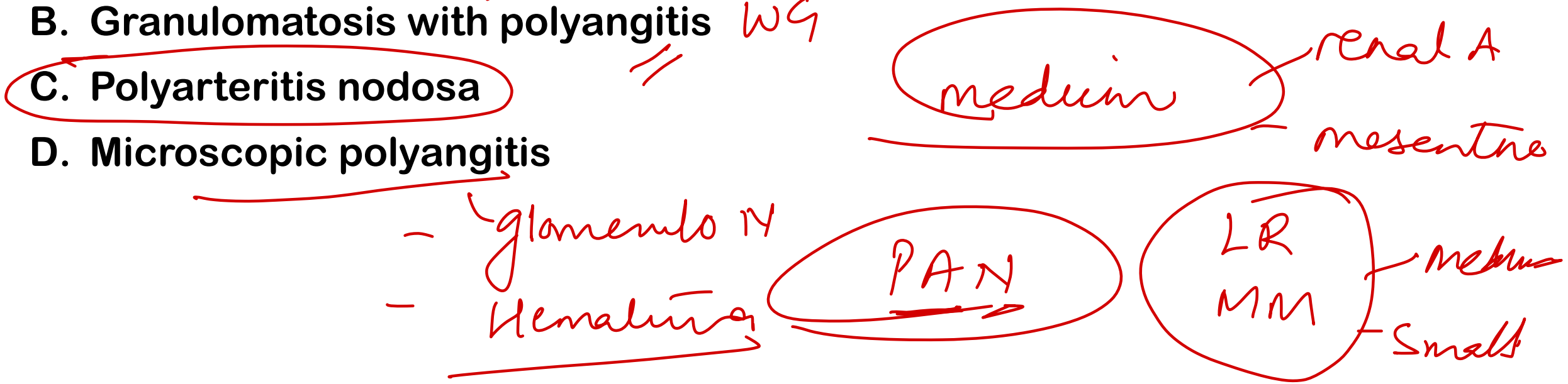
72. A 44-year-old man comes to the emergency department due to worsening abdominal pain and vomiting. Urgent laparotomy reveals bilateral renal infarcts and multiple segments of necrosis and perforation in the small bowel. Microscopic examination of the vessel walls shows diffuse inflammation of the adventitia and marked thickening of the inner layers due to proliferation of loose connective tissue; the arterial lumen is significantly narrowed. Which of the following is the most likely diagnosis?

A. Bacterial endocarditis

B. Granulomatosis with polyangitis

C. Polyarteritis nodosa

D. Microscopic polyangitis



73. A 34-year-old man comes to the physician due to painful urination. Physical examination shows a watery penile discharge. Urethral swabs obtained from the patient are negative for gonococcal infection. He is treated appropriately and his symptoms resolve. Two weeks later, he develops acute conjunctivitis, right knee pain, and vesicular rash on his palms and soles. This patient's condition is most likely associated with which of the following?

A. Esophageal dysmotility XX

B. Polymyositis XY

C. Sacroilitis

D. Tabes dorsalis

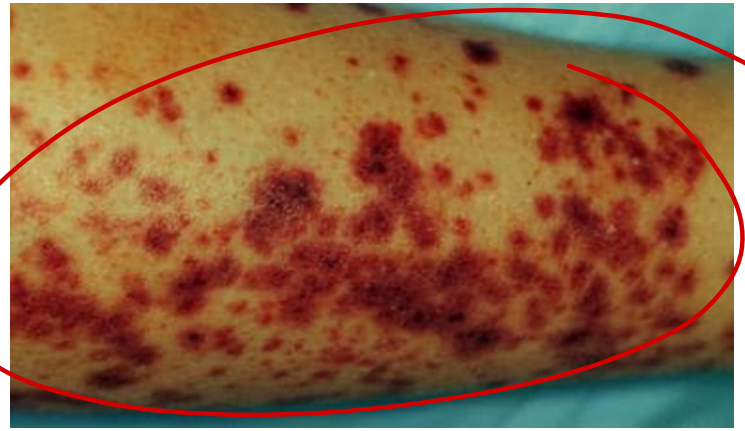
Reiter's Sx

↓

Seronegative spondyloA

74. A 7-year-old boy is brought to the emergency department by his parents for arthralgias. Physical examination is shown. The knees are tender but do not appear warm or swollen. Urinalysis results are as follows:

- **Protein: 2+**
- **Blood: moderate**
- **Leukocyte esterase: trace**
- **White blood cells: 1-2/hpf**
- **Red blood cells (RBCs): many/hpf**
- **Casts: RBC casts**



Which of the following mechanisms is the most likely underlying cause of this patient's renal findings?

A. Autoantibodies against podocyte antigens

B. Autoantibodies to host cell basement membranes

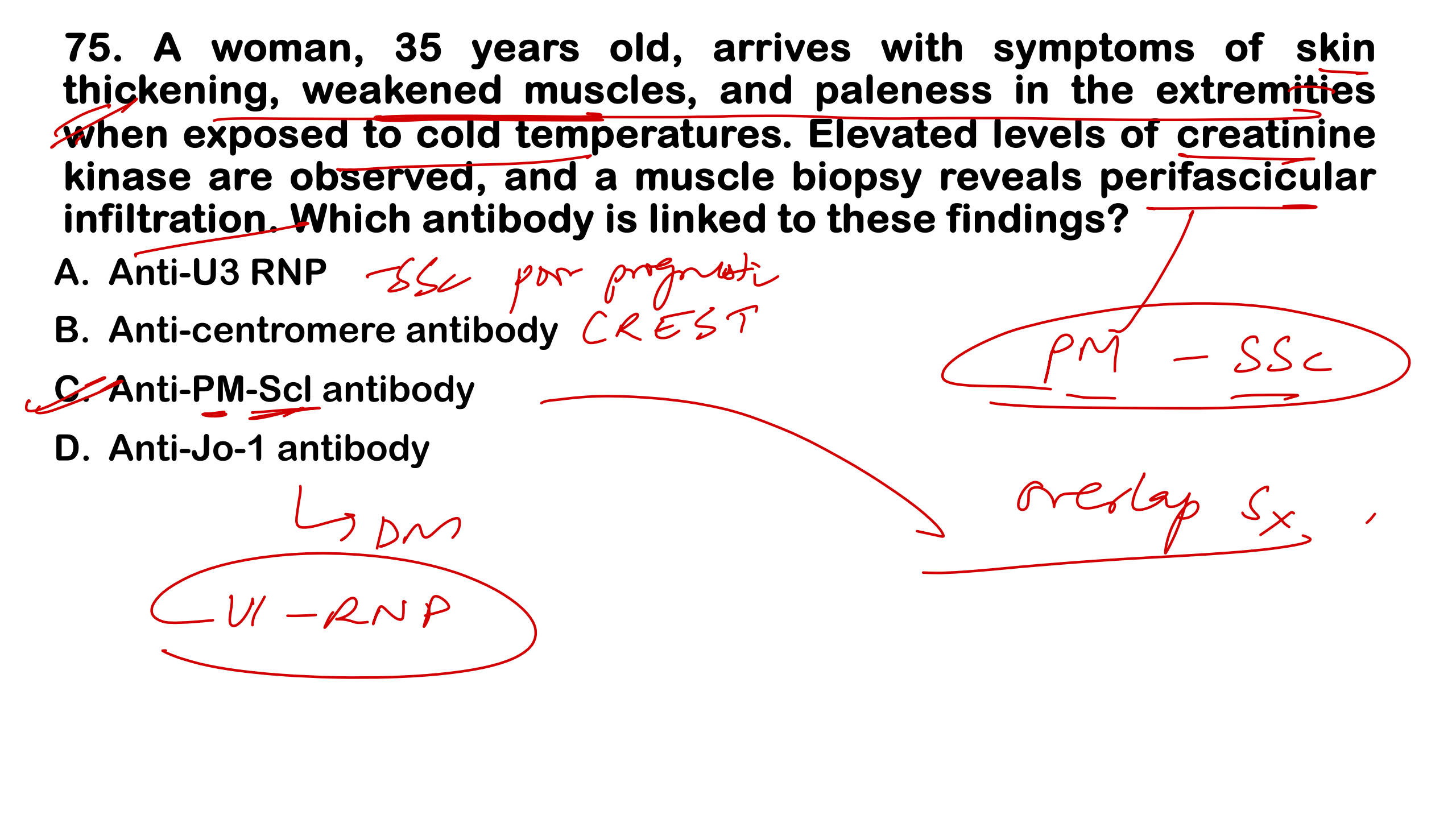
C. Immune complex deposition in glomerular mesangium

D. Thrombosis of glomerular capillaries

HSP

75. A woman, 35 years old, arrives with symptoms of skin thickening, weakened muscles, and paleness in the extremities when exposed to cold temperatures. Elevated levels of creatinine kinase are observed, and a muscle biopsy reveals perifascicular infiltration. Which antibody is linked to these findings?

A. Anti-U3 RNP
B. Anti-centromere antibody
C. Anti-PM-Scl antibody
D. Anti-Jo-1 antibody



76. All of the following can be given to a pregnant woman with SLE except?

A. Hydroxychloroquine

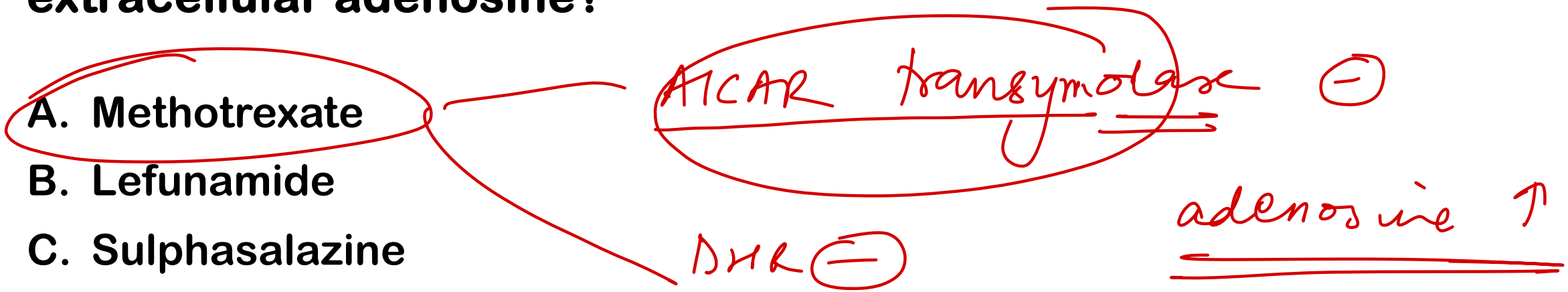
B. Azathioprine

C. Mycophenolate mofetil

D. Sulfasalazine

77. Which of the following anti rheumatoid drug increases extracellular adenosine?

A. Methotrexate
B. Lefunamide
C. Sulphasalazine
D. Hydroxychloroquine



78. A 57-year-old man comes to the physician because of sudden-onset fever, malaise, pain and swelling of his wrists and ankles that began a week ago. One month ago, he was started on hydralazine for adjunctive treatment of hypertension. His temperature is 37.8°C (100°F). Examination shows swelling, tenderness, warmth, and erythema of both wrists and ankles; range of motion is limited. Further evaluation is most likely to show an increased level of which of the following autoantibodies?

A. Anti-dsDNA

B. Anti-Smith

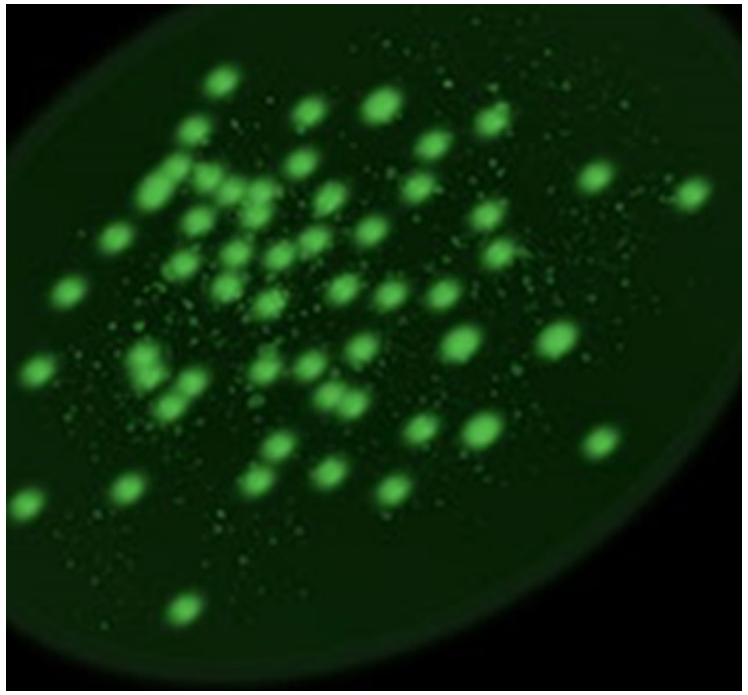
C. Anti-ß2-glycoprotein

D. Anti-histone

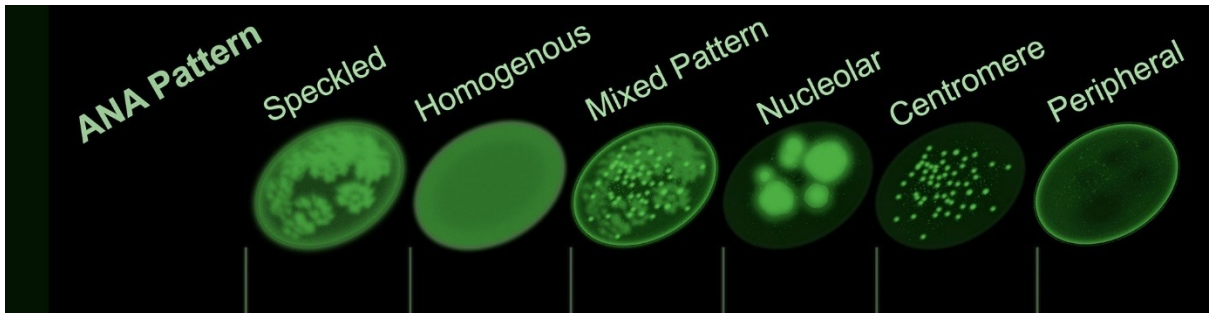
SHIP

79. 52-year-old woman presents with a history of cold-induced color changes in her fingers, tight and shiny skin on her face and fingers, and small dilated blood vessels visible on her face. She also mentions difficulty in making certain facial expressions due to skin tightness. ANA staining pattern of the patient is shown in the image below.

A. Centromeric
B. Homogenous
C. Nucleolar
D. Speckled



PYQ


ANA Pattern
Speckled
Homogenous
Mixed Pattern
Nucleolar
Centromere
Peripheral

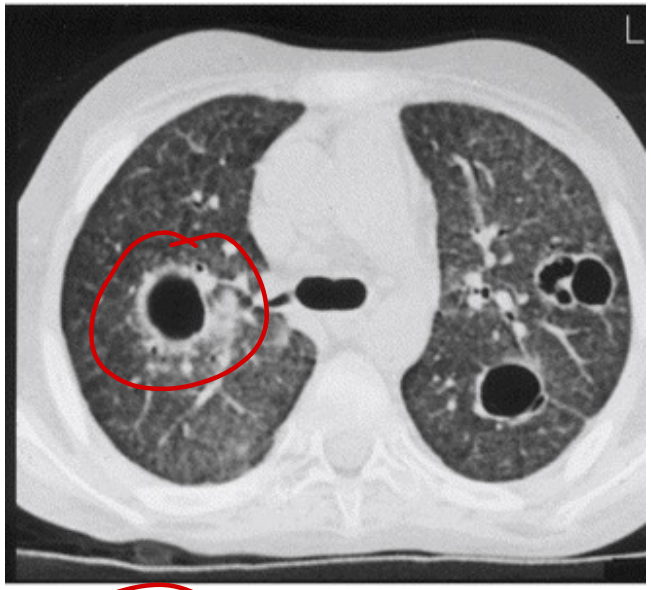
80. An elderly patient presents with cutaneous vasculitis and hemoptysis. HRCT is shown below. Which investigation should be performed next to help you diagnose the condition?

A. C-ANCA

B. Anti-GBM

C. HbsAg

D. P-ANCA



WG

81. A 51-year-old woman comes to the emergency department because of a 1-day history of severe pain in her left knee. To lose weight, she recently started jogging for 30 minutes a few times per week. She has type 2 diabetes mellitus and hypertension treated with metformin and chlorothiazide. On examination, her temperature is 38.5°C (101.3°F), pulse is 88/min, and blood pressure is 138/87 mm Hg. The left knee is swollen and tender to palpation with a significantly impaired range of motion. A 1.5 cm. painless ulcer is seen on the plantar surface of the left foot. Which of the following is most likely to help establish the diagnosis?

A. Perform arthrocentesis
B. Measure HLA-B27
C. Measure rheumatoid factor
D. Perform serum uric acid

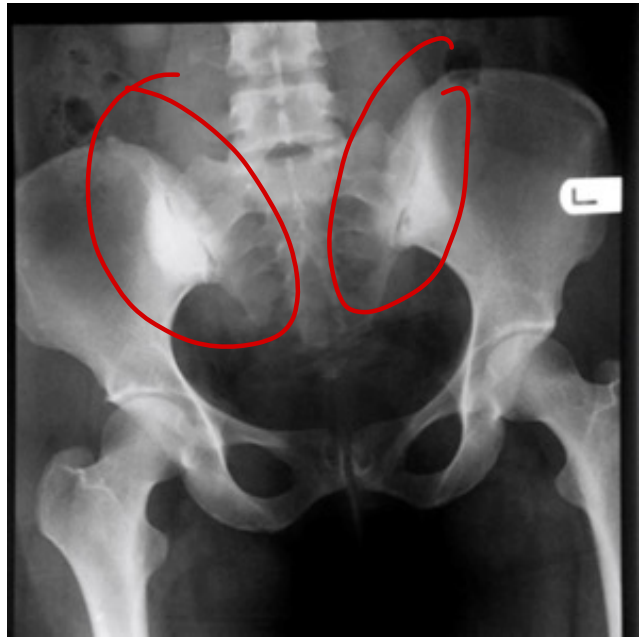
82. A 30-year-old multiparous woman presents with chronic lower back pain. The pain is non-radiating, worse with activity, and improves with rest. There are no neurological deficits. X-ray pelvis shows bilateral symmetric sclerosis of the iliac side of the sacroiliac joints, with joint spaces preserved. What is the most likely diagnosis?

A. Ankylosing spondylitis

B. Osteitis condensans ilii

C. Sacroiliitis

D. Metastatic bone disease



83. A 55-year-old woman comes for evaluation of persistent morning stiffness. She was diagnosed with rheumatoid arthritis 4 months ago and was prescribed methotrexate. The patient currently takes the maximum tolerated dose, along with folic acid and as-needed naproxen. On examination, swelling, tenderness, and pain on range of motion are found at the metacarpophalangeal and proximal interphalangeal joints and wrists bilaterally. Treatment with etanercept is considered. Which of the following tests should be performed before beginning treatment with this agent?

A. HRCT chest

B. Echocardiogram

C. Fecal occult blood test

D. Interferon gamma release assay

TNFα ⊖

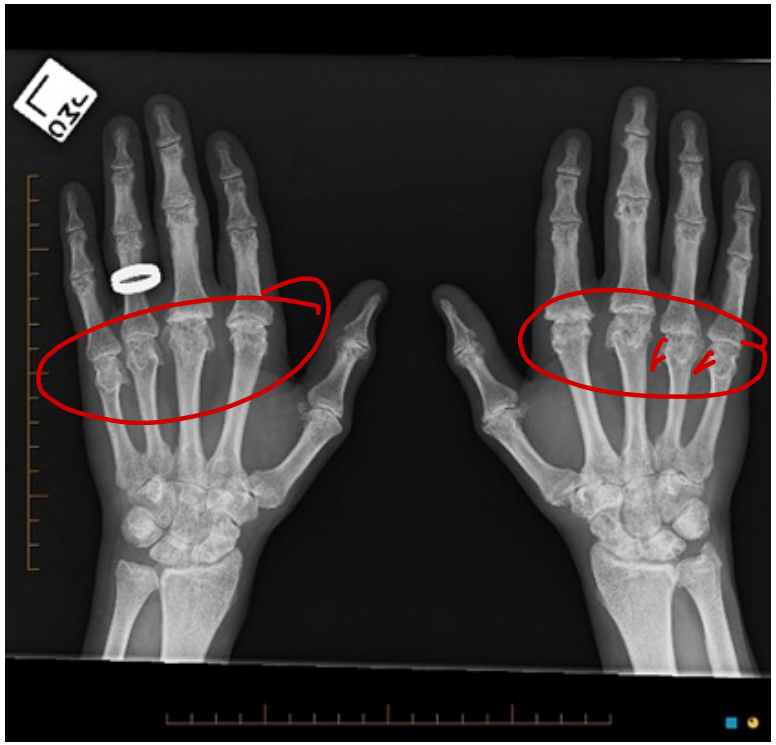
84. 43-year-old man comes to the OPD due to joint pain and stiffness in both hands for the past 6 months. He sometimes awakens with hand pain at night. Hand radiographs reveal bilateral erosions and joint deformities involving the second and third metacarpophalangeal joints. Which of the following is the most likely diagnosis?

A. Rheumatoid arthritis

B. Hereditary hemochromatosis

C. Multiple myeloma

D. Reactive arthritis



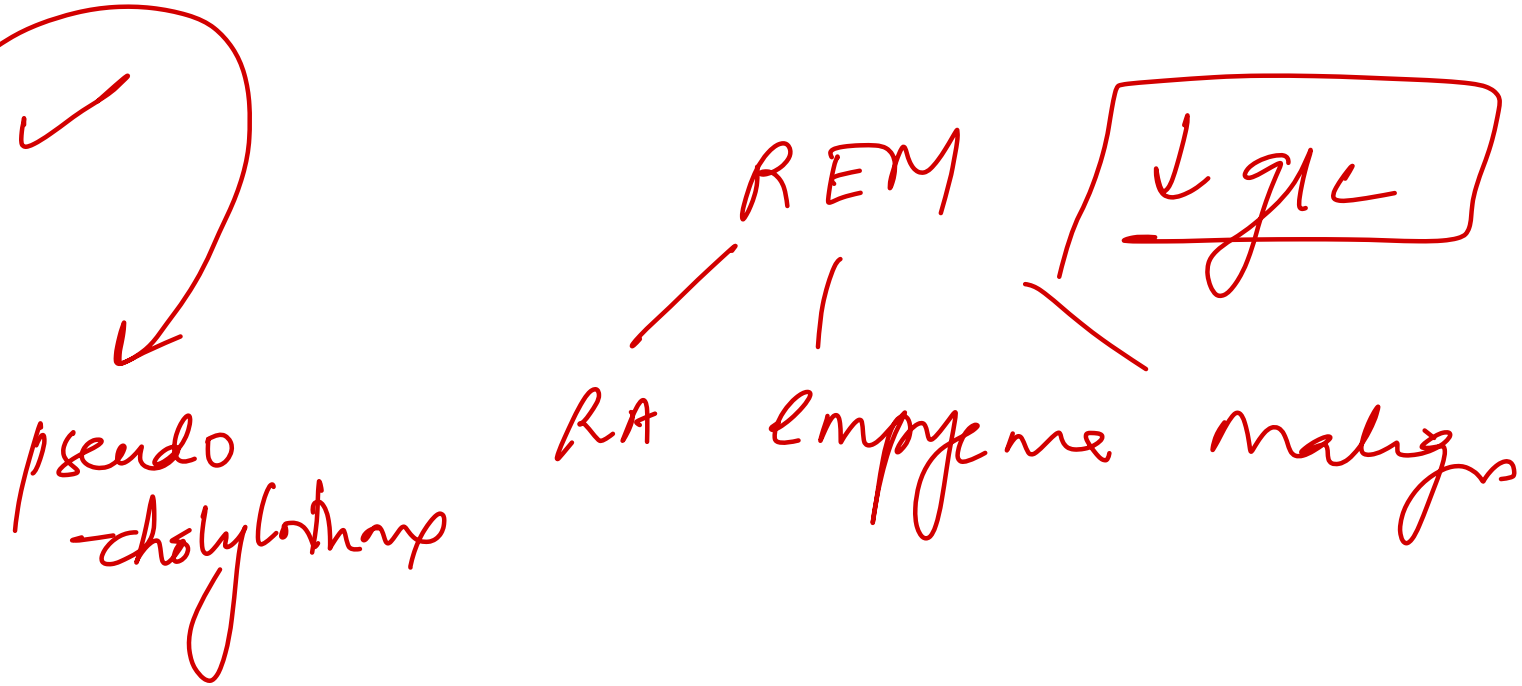
85. All of the following characteristics are found in the pleural effusion fluid of a rheumatoid arthritis patient except:

A. RA factor

B. Cholesterol crystals

C. High glucose

D. High LDH



86. A triad of skin lesions, asymmetric mononeuritis multiplex and eosinophilia is seen in which of the following conditions?

A. Cryoglobulinemic vasculitis

B. Polyarteritis nodosa

C. EGPA

D. Giant cell arteritis

87. All the following conditions are manifestations of IgG4RD EXCEPT:

A. Autoimmune pancreatitis

B. Crescentic glomerulonephritis

C. Lymphoplasmacytic aortitis

D. Orbital pseudotumor

renal masses

88. 35-year-old woman presents with fever and pain in knees and ankles. On the exam, she has B/L parotid swelling, and she has lesion shown in the picture below. Laboratory studies are normal except for a slightly increased calcium level. What is the most appropriate Rx?

A. Allopurinol

B. Corticosteroids

C. Methotrexate

D. Plasma Exchange

EN

Sarcoidosis

89. A 65-year-old female with severe headaches and sudden monocular vision loss has ESR of 67 mm/hr. Which of the following is the best next step in management?

A. Administration of oral corticosteroids

B. Temporal artery biopsy

C. Retinal imaging with optical coherence tomography (OCT)

D. Brain magnetic resonance imaging (MRI)

gold std

93. A patient having persistent allergic rhinitis is on treatment with intranasal steroids. You wish to add an antihistamine to his treatment regimen. He requests an intranasal preparation. Which of the following will you prescribe?

A. Ebastine

B. Mizolastine

C. Azelastine

D. Fexofenadine

94. Which is the monoclonal antibody approved for the treatment of rheumatoid arthritis?

A. Nivolumab

B. Durvalumab

C. Sarilumab

D. Pembrolizumab

95. Which of the following is true about the WHO analgesic ladder for chronic pain in adults?

A. Intravenous route is preferred

B. Step 3 includes use of Morphine

C. Adjuvants are indicated only for mild pain

D. Analgesics are given "on demand"

"on clock"

↓

abuse

WHO analgesic ladder is a **three-step approach** for managing chronic pain:

Step 1: Non-opioids (e.g., paracetamol, NSAIDs) for mild pain.

Step 2: Weak opioids (e.g., codeine, tramadol) ± non-opioids for moderate pain.

Step 3: Strong opioids (e.g., morphine, fentanyl) ± non-opioids for severe pain.

Thank You