



MEDICINE
KING SAUD UNIVERSITY



MCQs

SAQs

Summary

Drugs used in Epilepsy

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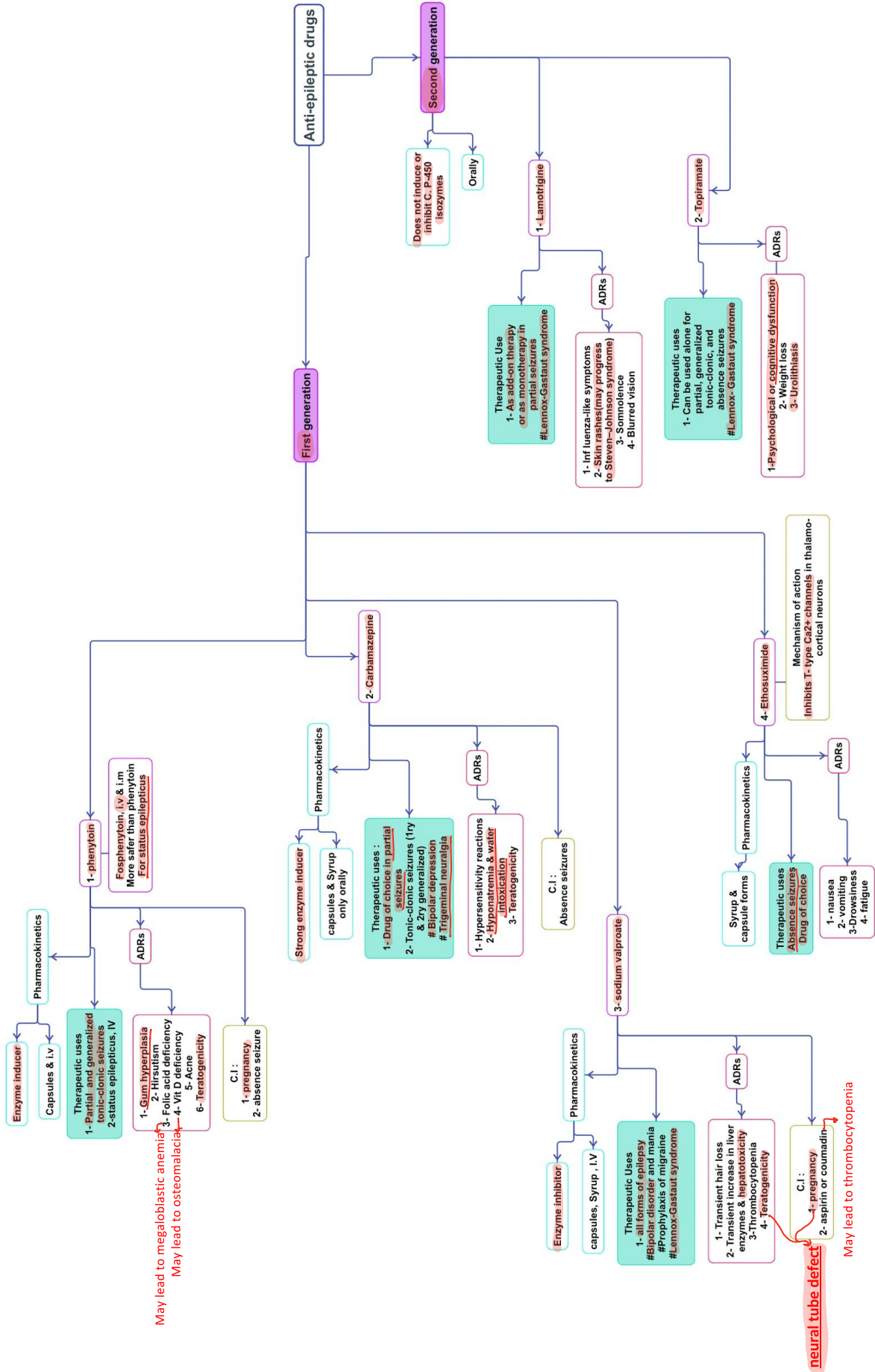


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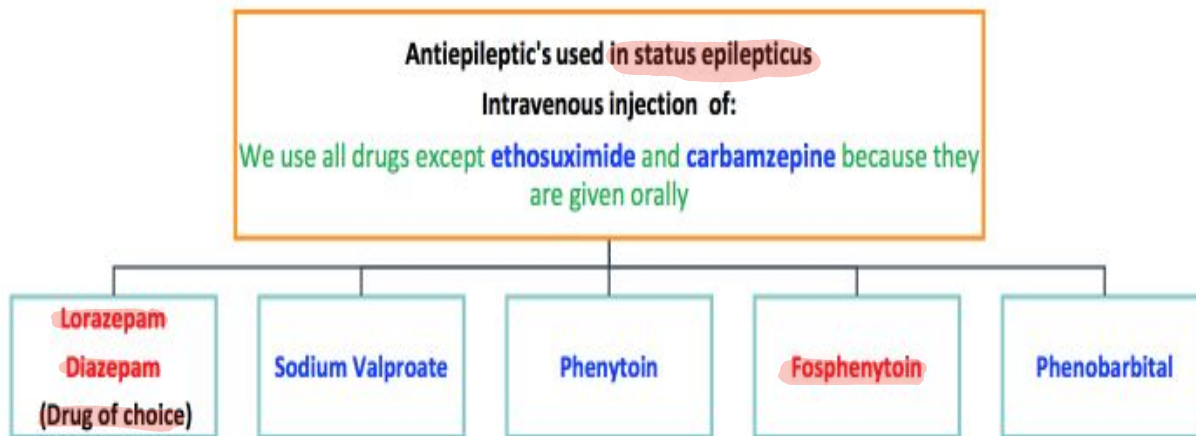
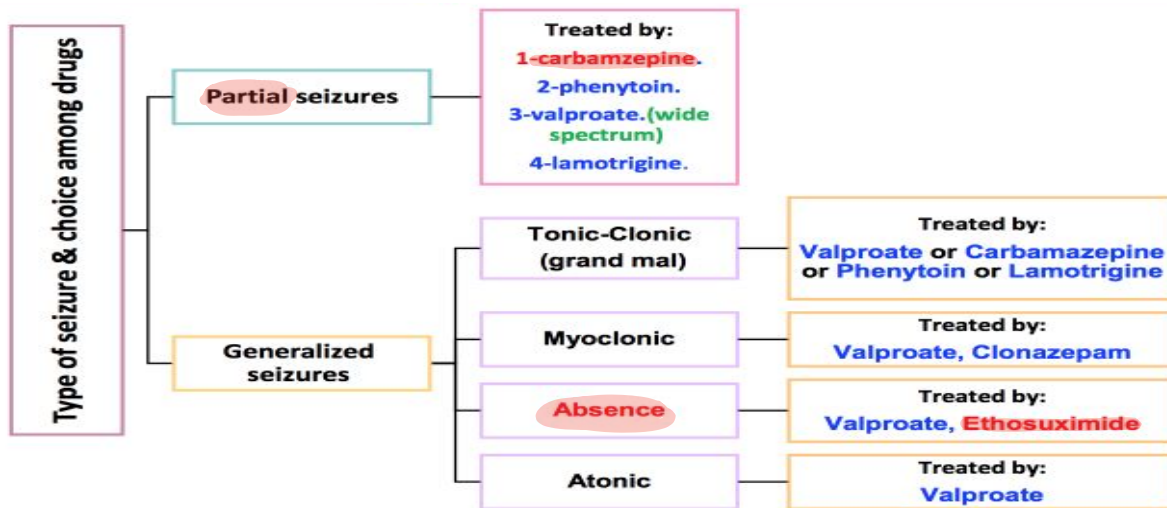


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Summary



Summary



- **Phenytoin** is mainly used for treatment of **generalized tonic-clonic seizures** .
- **Carbamazepine** is mainly used for treatment of **partial seizures**
- **Ethosuximide** is mainly used for **Absence seizures**
- **Sodium valproate** is a **broad spectrum antiepileptic drug**.
- Lamotrigine & levetiracetam are used as monotherapy or adjunctive therapy in **refractory** cases.
- **Lorazepam , diazepam , Fosphenytoin** are used **intravenously for treatment of status epilepticus**

❖ Main mechanism of action of Antiepileptic drugs:

- Inhibition of excitatory neurotransmitters.
- Enhance inhibitory neurotransmitters.
- Blockage of voltage-gated positive current.
- Increase outward positive current.

❖ Antiepileptic & Pregnancy:

- Seizure is very harmful for pregnant woman.
- NO antiepileptic drug is safe in pregnancy.
- Monotherapy usually better than drug combination.
- **Valproate(Nural tube defect) & phenytoin** are **contraindicated during pregnancy**.
- Patient has to continue therapy

MCQs

1- Drug X is metabolized by P450 enzyme in the liver is added to phenytoin in a patient with seizures. What will be the effect on drug X?

- A. Increase its duration of action. B. Decrease its duration of action. C. No effect at all.

2- What is the drug of choice for partial seizures?

- A. Phenytoin. B. Lamotrigine. C. Carbamazepine.

3- Which of the following can be used in status epilepticus?

- A. Fosphenytoin. B. Valproate. C. Diazepam. D. All of them.

4- Which of the following is the drug of choice in status epilepticus ?

- A. Fosphenytoin. B. Sodium Valproate. C. Diazepam.

5- Which of the following drugs can be used in absence seizures?

- A- Ethosuximide. B. Sodium Valproate. C. Both of them

6- A child is experiencing absence seizures that interrupt his ability to pay attention during school and activities. Which of the following therapies would be most appropriate for this patient?

- A- Ethosuximide. B. Sodium Valproate. C. Topiramate.

7- Which of the following enhances GABA synthesis and reduce its degradations?

- A. Ethosuximide. B. Lamotrigine. C. Sodium Valproate.

8- Which of the following act as antiepileptic drugs by blocking of T-type Ca^{2+} channels ?

- A- Ethosuximide. B. Sodium Valproate. C. Both of them

9- Which of the following drugs can cause cognitive dysfunction ?

- . A. Phenytoin. B. Carbamazepine. C. Topiramate.

10- The drug of choice for myoclonic epilepsy ?

- A. Sodium valproate. B. Phenobarbital. C. Clonazepam. D. Both A & C

Answers:
1. B. 2. C. 3. D. 4. C. 5. C. 6. A. 7. C. 8. C. 9. C. 10. D.

MCQs

11- A 25-year-old woman with myoclonic seizures is well controlled on valproate. She indicates that she is interested in becoming pregnant in the next year. With respect to her antiepilepsy medication, which of the following should be considered?

- A. Stop her Antiepileptic therapy immediately.
- B. Consider switching to lamotrigine.
- C. Consider adding a second antiepilepsy medication.
- D. Decrease her valproate dose.

12- Which of the following is unwanted mechanism when we treat the seizures

- A. Enhancing GABA activity.
- B. Increasing efflux of negatively charged ions.
- C. Increasing efflux of positively charged ions.
- D. Inhibiting glutamate activity

13- Hyperplasia of the gum is characteristic side effect of which of the following Antiepileptic drugs?

- A. Phenytoin.
- B. Valproate.
- C. Lamotrigine

14- Which ONE of the following is the likely mechanism of action of lamotrigine?

- A. Blockade of chloride channels.
- B. Reduce the release of glutamate.
- C. Reduce the level of GABA content

15- Which of the following Antiepileptic drugs can be used to treat the trigeminal neuralgia?

- A. Carbamazepine.
- B. Phenytoin.
- C. Sodium Valproate.

16- A 22-year-old female on an anti-epileptic drug. She got married 2 months ago and and panning to have a baby in the near future, the doctor changed the drug she is taking to prevent neural defect of the baby. What is the drug that would cause this side effect?

- A. Carbamazepine.
- B. Phenytoin.
- C. Sodium Valproate.

Answers
11. B
12. B.
13. A.
14. B.
15. A.
16. C.

MCQs

17- Which of the following anti-epileptic drugs also used for bipolar depression ?

- A. Carbamazepine.
- B. Phenytoin.
- C. Sodium Valproate.
- D. Both A & C.

18- A 12-year-old male came to the ER with Clonic-tonic absence seizures presentation which is also known as Lennox-Gatsaut syndrome. Which of the following anti-epileptic drugs can be used in this syndrome?

- A. Valproate.
- B. Lamotrigine.
- C. Topiramate.
- D. all of them

19- Which of the following anti-epileptic drugs has broad spectrum, and effective for all forms of epilepsy?

- A. Phenytoin.
- B. Sodium Valproate.
- C. Carbamazepine.

20- Hyponatremia and water intoxication is characteristic side effect of which of the following Antiepileptic drugs?

- A. Phenytoin.
- B. Sodium Valproate.
- C. Carbamazepine.

21- Skin rashes and Steven-Johnson syndrome are characteristic side effect of which of the following Antiepileptic drugs ?

- A. Sodium Valproate.
- B. Lamotrigine.
- C. Topiramate.

22- All of the following Antiepileptic drugs are microsomal inducer, EXCEPT?

- A. Phenytoin.
- B. Sodium Valproate.
- C. Carbamazepine.

23- A 9-year-old boy is sent for neurologic evaluation because of episodes of apparent inattention. Over the past year, the child has experienced episodes during which he develops a blank look on his face and his eyes blink for 15 seconds. He immediately resumes his previous activity. Which one the following best describes this patient's seizures?

- A. Complex partial.
- B. Tonic-clonic (Grand mal)
- C. Absence(Petit mal):

Answers:
17. D.
18. D.
19. B.
20. C.
21. B.
22. B.
23. C.

SAQs

Q1) 37 years old male patient, his family said that he has suffered from losing consciousness for almost 30 seconds without noticing it himself for the past 7 months, he went to a neurologist and was prescribed a drug that he forgot its name. After using the drug for 1 week, he came to the ER with severe seizures lasting for more than 30 minutes.

a) What type of seizures the patient is suffering from this time?

Status Epilepticus which is a single epileptic seizure lasting more than five minutes or two or more seizures within a five-minute period without the person returning to normal between them.

b) What is the drug of choice in case this case? And what is the route of administration?

1. Phenytoin : used Intravenously by SLOW infusion to prevent cardiac side effects.
2. Fosphenytoin: used intravenously and can be rapidly injected.
3. Lorazepam or Diazepam are drugs of choice with I.V route.

Q2) What is the different between Epileptic syndrome and seizures?

- Epileptic syndrome is a chronic medical condition that is characterized by 2 or more Unprovoked seizures in 6 to 12 months.
- Seizures without epileptic syndrome are mostly provoked by some triggers like hyperthermia, poor nutrition, meningitis and others.

Q3) What is the generalized mechanism of action of anti-epileptic drugs?

- Inhibition of excitatory neurotransmitters.
- Enhance inhibitory neurotransmitters.
- Blockage of voltage-gated positive current.
- Increase outward positive current.

Q4) In case of partial seizures, which anti-epileptic drug is the drug of choice?

- Carbamazepine.

Q5) Name two drugs that can be used in absence seizures?

1. Sodium Valproate.
2. Ethosuximide.