9- Valproic acid:-

(Depakine, Dekadel, Convulex, Valopnex, Vedge)

- G.T.C., absence, myoclonic, partial and atonic.

Dose : start with 15-20 mg/kg/day divided into two doses and increase gradually untill response. The range of dose is 20-60 mg/kg/day.

10-Lamotrigine: (Lamictal, lamotrine, Larogen & Leptrogine):

- Used in partial. Could be used as an add on therapy in uncontrolled fits of any type.

- Dose: See table

Use	1 st & 2 nd week	3 rd & 4 th week	Maintenance
With valpoate ± other AEDs	0.15mg/kg once daily	0.3mg/kg once daily	1-5mg/kg/day in two divided doses
With other antiepileptics	0.6mg/kg once daily	1.2mg/kg once daily	5-15mg/kg/day in two divided doses
Monotherapy Children > 10 years	25mg once daily	25mg twice daily	100-200mg in two divided doses

11-Topiramate: (Topamax ,Topiramate,Delpirmate):-

- G.T.C., absence, myoclonic, partial and atonic.

-Dose :3-9 mg/ kg / day

12-Vigabatrin (Sabril):-

- The drug of choice in infantile spasms.
- Add on therapy in uncontrolled convulsions.

- Dose: start with 30 mg/kg/day and increase gradually (30-100 mg/kg/day).

13-Levetiracetam (Tiratam, Sycocetam, Kepra)

- It has broad spectrum antiepileptic activity like valproate.
- Dose 30-60 mg/ kg/ day.



رنيس قسم طب الاطفال ومدير مستشفي الاطفال أ.د/ عماد حماد الدالي مدير المركز **د/ ادريس حسن زكي**

1st Concised Scientific Letters (CSL) 1/11/2020

Antiepileptic Drugs ;Uses & Doses

Prof. Emad Hammad El. Daly Prof of Neuropediatric -Assiut University

*Golden Rules for childhood epilepsy

- 1. Epilepsy is a clinical diagnosis ,EEG is a confirmatory test .
- 2. The cornerstone for diagnosis of epilepsy is <u>EEG video</u> <u>monitoring.</u>
- 3. Before starting treatment of epileptic child, you should exclude syndromes that mimic epilepsy as (breath holding attacks,syncope, cataplexy,Mastarbation spasm.....etc)
- 4. Duration of treatment of epilepsy is minimal 2 years free from fits.
- 5. Follow up EEG is not indicated except for special cases.
- 6. <u>EEG could be normal</u> in a well known epileptic patient and <u>7-8 % of normal population</u> had an abnormal EEG.
- 7. Monotheropy is better than polytherapy.

-Epilepsy is a clinical dignosis

- History is the main stay for clinical diagnosis.
- Watching the fit is the sure clinical clue for diagnosis.
- EEG is a cofirmatory test
- The cornerstone for diagnosis of epilepsy is EEG video monitoring

<u>-Indictions Electroencephalography</u> (E.E.G)

E.E.G has the following advantages in the diagnosis of epilepsy:

- 1) E.E.G with hyperventilation is highly diagnostic for absence attacks & other epilepsies.
- 2) E.E.G showing hypsarrythmic pattern is diagnostic for infantile spasms.
- 3) E.E.G is important in diagnosis of myoclonic epilepsy.
- 4) E.E.G is important for classification of epilepsy and epileptic syndromes.
- 5) E.E.G may direct the attention for brain focal lesion, which needs further imaging studies.
- 6) E.E.G gives an idea about the maturation of brain in neonatal, infancy and childhood periods.

- Indictions CT. and MRI:

They are not indicated in every child with convulsions, it is indicated for the child with recurrent seizures under several circumstances:

- 1. The presence of an abnormal neurological examination.
- 2. The presence of dysmorphic features.
- 3. The presence of skin lesions suggesting neurocutaneous syndromes.
- 4. Intractable epilepsy.
- 5. The presence of focal E.E.G slowing or E.E.G lateralization.
- 6. Post-traumatic seizures.
- 7. Post-asphyxial seizures in neonates.
- 8. On planning for surgical treatment of epilepsy.

*Individual antiepileptic drugs:-

1-Carbamazpine (Tegretol , Tegral , carbapex):-

- Used in partial epilepsy mainely but could be used in G.T.C.
- It aggrevates absence, myoclonic and infantile spasm.

- Dose: 10 mg/kg/day \rightarrow gradual increase up to 30 mg/kg/day 3 times/day.

2- Oxcarbazepine: (Trileptal&Oxaleptal):-

 α ketosubstituted analogue with the same spectrum of carbamazpine and lower side effects.Its dose is 10-30 mg/kg/day.

3- Phenytoin (Epanutin, Ipantin):-

- Used in acute seizures of any type I.V. and in G.T.C. as a long term therapy it is the drug of choice in infancy and neonates.

- It <u>aggrevates</u> absence, myoclonic and infantile spasm.
- I.V. Loading (20 mg/kg) after 12 hours \rightarrow 5-10 mg/kg/day which is the oral form.

4-Phenobarbital : (sominalleta):-

- Used in G.T.C. and simple partial.
- It is the drug of choice in neonates and infants
- Dose:- Neonate $(20 \text{-mg/kg}) \rightarrow 5\text{-}10 \text{ mg/kg/d}$.

- Children (10 mg/kg) \rightarrow 3-5 mg/kg/d.

5-Diazepam : (Valium, Valpam , Neural):-

- In acute seizures.
- I.V. or rectal (0.3 0.5 mg/kg/dose)

6- Clonazepam : (Rivotril, Aptryl & Amotril).

-Used in Absence, myoclonic, inf. Spasms, atonic, partial and as an add on therapy in G.T.C.

-Dose: 0.05 mg/kg/day and increase by 0.01 mg /kg/week until response or reach 0.25 mg/kg/day

7- Ethosuximide: (Ethoxa & Zarontin):-

- The drug of choice in absence epilepsy.
- It aggrevates G.T.C.
- Dose :-20-40mg/ kg/day.

8- Midazolam: (Dormicum): -

In acute seizures: 0.1-0.2 mg/kg/dose.