

# PHARMACOLOGY TEAM



**Done by :**            **Eman Alrashidi   Badra`a Al-Mouharib**

**Maha Balharth   Reham Alhenaki**

**Revised by :**        **Prof. Azza Almadani**

**!! Please Notice that the table involve the important point of drugs only . So we advise you to read the lecture first ....**

Drug	Pharmacokinetics	Mechanism of action	Therapeutic uses	Side effects
<b>First-generation:</b> <b>1-Carbamazepine</b>	_ Available <u>only</u> orally _ <b>Strong enzyme inducer</b> including its own metabolism  _ Metabolized by the liver to active & inactive metabolites	All first generation Blockade of Na <sup>+</sup> channels this lead to :  - reduce the propagation of abnormal impulses in the brain - inhibit the generation of repetitive action potential - Inhibit the release of glutamate -Potentiate the action of GABA	<b>-Drug of choice in partial seizures.</b> <b>-Tonic-clonic seizures (1ry &amp; 2ry generalized)</b> <b>-but Not in absence seizures.</b>	<b>-Blood dyscrasis</b> <b>-Hyponatremia &amp; water intoxication</b>
<b>2- Phenytoin</b>	- available as iv. <b>(for emergency)</b> _ <b>Enzyme inducer</b> _ Metabolized by the liver to inactive metabolites		<b>-Partial and generalized tonic-clonic seizures</b>  <b>-Not in absence seizure.</b> <b>-In <u>status</u> epilepsy</b>	<b>-Gum hyperplasia</b> <b>-Coarsening of facial features</b> <b>-Hirsutism</b> <b>-Acne</b> <b>-Megaloblastic anemia</b> <b>-Osteomalcia</b>
<b>3-Sodium Valproate</b> <b>Broad spectrum antiepileptic</b>	<b>-Enzyme inhibitor</b> <b>-Available as capsules, Syrup , I.V</b> <b>-Metabolized by the liver ( inactive )</b>	In addition to the above <b>Sodium Valproate :</b> Blocks T-type Ca <sup>2+</sup> channels Inhibits GABA –transaminase	<b>All forms of epilepsy</b>	<b>-Weight gain (↑appetite ).</b> <b>-Transient hair loss, with re-growth of curly hair</b> <b>-Thrombocytopenia</b> <b>-Hepatotoxicity</b>

<p><b>Lamotrigine</b> Second-generation</p>	<p>Dose <b>not</b> affect liver enzymes</p>	<p>-Blockade of Na<sup>+</sup> channels -Inhibits excitatory amino acid release ( glutamate &amp; aspartate )</p>	<p>-As <b>add-on</b> therapy -as monotherapy in <b>partial seizures</b> -Lennox-Gastaut syndrome</p>	<p><b>Influenza-like symptoms.</b> <b>Skin rashes (may progress to Steven – Johnson syndrome )</b></p>
<p><b>Levetiracetam</b> Second-generation</p>	<p>Taken <b>orally</b> <b>Not metabolized &amp; excreted unchanged In urine</b>  Dose <b>not</b> affect liver enzymes</p>	<p>Unknown</p>	<p>-<b>Adjunctive therapy</b> in : <b>Partial seizures</b> <b>Generalized tonic-clonic seizures</b> -Monotherapy <b>Myoclonic seizures</b></p>	<p><b>Pin &amp; needles sensation in extremities</b> <b>Dizziness</b> <b>Somnolence</b> <b>Blurred vision</b> <b>Ataxia</b></p>