

## Summary of antiepileptic drugs (lectures 13 & 14)

	Na-channel block	Ca-channel block	Inhibition of Excitatory NTs	Potentiation of GABA	Grand mal	Partial seizures	Absence seizures	Status epilepticus	Other clinical uses	Lennox-Gastaut syndrome	Effect on microsomal enzymes
Phenytoin & Fosphenytoin	√	√	√	√	√	√	X	√ (I.V.)			Inducers
Carbamazepine	√	√	√	√	√	√	X				Inducer
Ethosuximide		T-type √					√				
Na Valproate	√	T-type √	√	√ (Enhance synthesis & reduce degradation)	√	√	√	√	<ul style="list-style-type: none"> <li>• Myoclonic &amp; Atonic epilepsy</li> <li>• Bipolar &amp; mania</li> <li>• Migraine prophylaxis</li> </ul>	√	Inhibitor
Lamotrigine	√		√		√	√			Refractory cases (& levetiracetam)	√	No effect
Topiramate	√			√	√	√	√			√	No effect
Others								Lorazepam, Diazepam, phenobarbital.	Myoclonic: clonazepam		

### ADRs:

First generation	Phenytoin & Fosphenytoin	<ul style="list-style-type: none"> <li>• Nausea or vomiting</li> <li>• Neurological, like: headache, vertigo, ataxia, diplopia, nystagmus</li> <li>• Sedation</li> <li>• Gum hyperplasia</li> </ul>
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		<ul style="list-style-type: none"> <li>• Hirsutism</li> <li>• Acne</li> <li>• Folic acid deficiency (megaloblastic anemia)</li> <li>• Vit D deficiency (osteomalcia)</li> <li>• <b>Teratogenic effects</b> (contraindicated in pregnancy)</li> </ul>
	Carbamazepine	<ul style="list-style-type: none"> <li>• GIT upset</li> <li>• Hypersensitivity reactions</li> <li>• Drowsiness, ataxia, headache &amp; diplopia</li> <li>• Water intoxication &amp; <b>Hyponatremia</b></li> <li>• Teratogenicity</li> </ul>
	Ethosuximide	<ul style="list-style-type: none"> <li>• Gastric distress: nausea &amp; vomiting</li> <li>• Drowsiness, fatigue, hiccups, headaches</li> </ul>
	Na Valproate	<ul style="list-style-type: none"> <li>• Weight gain (↑appetite).</li> <li>• Transient hair loss, with re-growth of curly hair</li> <li>• Thrombocytopenia</li> <li>• <b>Hepatotoxicity</b></li> <li>• <b>Teratogenicity</b> (contraindicated in pregnancy)</li> </ul>
Second generation	Lamotrigine	<ul style="list-style-type: none"> <li>• <b>Influenza-like symptoms.</b></li> <li>• Skin rashes (may progress to Steven –Johnson syndrome)</li> <li>• Somnolence (sedation)</li> <li>• Blurred vision</li> <li>• Diplopia</li> <li>• Ataxia</li> </ul>
	Tropiramate	<ul style="list-style-type: none"> <li>• <b>Psychological or cognitive dysfunction</b></li> <li>• <b>Weight loss (can be desirable side effect)</b></li> <li>• Sedation, Dizziness, Fatigue</li> <li>• Urolithiasis</li> <li>• Paresthesias (abnormal sensation)</li> <li>• Teratogenicity (in animal but not in human)</li> </ul>

بالتوفيق للجميع.

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