

PHARMACOLOGY TEAM



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

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