

06 - Mood stabilizers

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© SPMM Course Mood stabilizers DRUG MECHANISM Carbamazepine Prolongs sodium channel inactivation. As a consequence, calcium channel inactivation is prolonged. It also reduces glutamate neurotransmission, adenosine A1 receptor antagonism and increase in brain catecholamine activity. It inhibits peripheral benzodiazepine receptors and reduces limbic kindling. It interferes with glial cell steroidogenesis. Gabapentin GABA analogue structurally - binds to the $\alpha 2\delta$ subunit of the voltage-dependent calcium channel in the central nervous system. Acts on L-amino acid transport and thus can increase GABA availability in the brain. It crosses BBB via this L-AA transport. Has a high-affinity site in GABA-A complex; but no benzodiazepine-like actions noted. Lamotrigine Blockade of voltage-sensitive sodium channels leading to modulation of glutamate and aspartate release; some effect on calcium channels. Some inhibition of serotonin reuptake and weak inhibition of 5-HT₃ receptors. Levetiracetam Indirectly enhance GABA system. Anticonvulsant with weak evidence against mania. Oxcarbazepine A metabolite of carbamazepine; similar mechanisms proposed. Pregabalin GABA analogue structurally (similar to gabapentin). Like gabapentin, pregabalin binds to the $\alpha 2\delta$ subunit of the voltage-dependent calcium channel in the central nervous system. This may subtly reduce the release of certain neurotransmitters. It may as well influence GABAergic neurotransmission. It has anti-epileptic, analgesic (neuropathic pain) and anxiolytic effects. It is more potent than gabapentin hence has a higher therapeutic index and fewer dose-related side effects. Tiagabine Tiagabine is a potent and selective reuptake inhibitor of GABA. It also has mild antihistaminic effects. Topiramate Topiramate is a fructose derivative; it is a selective inhibitor of Glutamate AMPA receptors, blocks Na⁺ receptors, and has indirect GABAergic activity by potentiating the action of GABA_A receptor. Valproic acid Unknown- speculated to act via increased GABA release, decreased GABA metabolism, increased neuronal responsiveness to GABA and increased GABA receptor density, inhibition of phosphokinase C similar to lithium and functional dopamine antagonism. Vigabatrin VIGABATRIN expands as Vi- GABA- TR-transaminase IN- inhibitor. The name explains the mode of action.

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