Piracetam: A Review of Pharmacological Properties and Clinical Uses

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ABSTRACT

Piracetam, a derivative of the neurotransmitter \( \gamma \)-aminobutyric acid (GABA), has a variety of physiological effects that may result, at least in part, from the restoration of cell membrane fluidity. At a neuronal level, piracetam modulates neurotransmission in a range of transmitter systems (including cholinergic and glutamatergic), has neuroprotective and anticonvulsant properties, and improves neuroplasticity. At a vascular level, it appears to reduce erythrocyte adhesion to vascular endothelium, hinder vasospasm, and facilitate microcirculation. This diverse range of physiological effects is consistent with its use in a range of clinical indications. Its efficacy is documented in cognitive disorders and dementia, vertigo, cortical myoclonus, dyslexia, and sickle cell anemia. While high doses are sometimes necessary, piracetam is well tolerated.