

1 Summary

Title: Donepezil – biological activity and evaluation of its efficiency

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Cognitive enhancers are drugs which preferentially affect cholinergic transmission in the central nervous system. The cholinergic system in the brain is the most seriously damaged neurotransmitter system in Alzheimer's disease and dementia with Lewy bodies. Donepezil is a new cognitive enhancer whose mechanism of action consists of reversible specific inhibition of acetylcholinesterase activity. Donepezil increases the amount of acetylcholine available for neuron-to-neuron communication, which may relieve some memory impairment and thus prolonging of patients' self-support. Present thesis classifies cognitive enhancers, it especially describes the mechanism of action and effect of donepezil and its therapeutical usage. The principal aim of my work was to assess and evaluate the efficacy and adverse effects of donepezil from chosen clinical studies in the years 2003- 2009. The results support the conclusion that donepezil is safe and effective for long-term treatment of patients with mild or moderate Alzheimer's dementia, vascular dementia, mild cognitive impairment and multiple sclerosis. In conclusion of my work I aimed to compare efficacy and the occurrence of adverse effects of donepezil with other cognitive enhancers and hereafter compare these results with published data concerning particular relative drugs.