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# Daily Administration of Physostigmine Does Not Ameliorate the Spatial Learning Impairments Induced by AF64A

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Poster Presentation 36

DAILY ADMINISTRATION OF PHYSOSTIGMINE DOES NOT  
AMELIORATE THE SPATIAL LEARNING IMPAIRMENTS INDUCED  
BY AF64A

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Alzheimer's Disease (AD) is a progressive degenerative disorder of the brain clinically manifested by cognitive deterioration. It usually begins in later life (> 65 years old), and results in death in about 3 to 10 years. Although originally thought to be a rare disease, AD has now reached startling proportions. It has been estimated that approximately 4 million Americans have AD, 19 million Americans say they have a family member with AD, and 37 million know someone with AD. Although significant progress has been made toward understanding the etiology of AD, presently there is no known cause or treatment. Pathologically AD is characterized by a profound deficiency of the neurotransmitter, acetylcholine. As a result, an intense research effort revolves around palliative strategies using drugs that effect the cholinergic system. Presently, studies using "cholinergic enhancers" have produced the most encouraging results. In another study presented at this conference we found a dramatic impairment in spatial learning in animals treated with the cholinergic neurotoxin, AF64A. In this study we attempt to ameliorate the spatial learning deficits induced by AF64A by using the acetylcholinesterase inhibitor, physostigmine. Our preliminary results indicate that compared to controls, daily treatment of an acetylcholinesterase inhibitor does not improve performance on a spatial learning task in AF64A lesioned animals. The implications of these results for future treatment strategies regarding AD will be discussed at this conference.