Search of mechanisms responsible for adverse effects of amyloid beta on muscarinic receptor transmission

https://neurodegenerationresearch.eu/survey/search-of-mechanisms-responsible-for-adverse-effects-of-amyloid-beta-on-muscarinic-receptor-transmission/

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Contact information of lead PI Country

Czech Republic

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Search of mechanisms responsible for adverse effects of amyloid beta on muscarinic receptor transmission

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Research Abstract

Regular finding at autopsy in Alzheimer's disease is loss of basal forebrain cholinergic neurons and damage of cerebral cortex cholinergic markers. In concert, the only approved drugs with limited benefit are cholinesterase inhibitors. We found in transgenic APPswe/PS1dE9 mouse model of the disease the early weakening of muscarinic signaling preceding amyloid deposition. It was not due to changes in muscarinic receptors or G-proteins expression, pointing to damage

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of receptor/G-protein interaction within membrane. The major obstacle in devising efficient therapy is a poor knowledge of likely reversible initial changes during the asymptomatic phase of the disease. The objective of this project is to identify mechanisms of initial muscarinic impairment by beta-amyloid. Knowledge of molecular mechanisms and time-course is of prime importance for development of new drugs and therapeutic strategies enabling proper selection of drug targets that are likely to depend on the stage of impairment but may not necessarily be confined to agents directly acting on muscarinic receptors.

Further information available at:

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