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**ALZHEIMER'S DISEASE: BIOCHEMICAL AND HISTOPATHOLOGICAL ASPECTS**

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**Introduction:** Alzheimer's Disease (AD), described by Alois Alzheimer in 1907, is a progressive, irreversible neurodegenerative condition that manifests insidiously, leading to a decline in information retention and various cognitive dysfunctions. **Objective:** To summarize the main biochemical and histopathological alterations of AD. **Methods:** A review was conducted to compile and analyze key findings on AD's biochemical and histopathological aspects. Searches were performed in databases such as PubMed, Virtual Health Library (BVS), and Scielo, using terms like "Alzheimer's Disease" and "Alzheimer's Histopathology". **Results and Discussion:** Neuropathological examination reveals generalized cortical atrophy, senile plaques, neurofibrillary tangles, granulovacuolar degeneration, and neuronal loss in AD-affected brains. The accumulation of  $\beta$ -amyloid protein in senile plaques and tau microtubulin in neurofibrillary tangles are notable markers, correlating with dementia severity. Disruptions in acetylcholine transmission and acetyltransferase activity are frequent findings. Genetic factors are pivotal in the etiopathogenesis of AD, with other contributing elements including exposure to infectious agents, aluminum toxicity, oxygen free radicals, neurotoxic amino acids, and microtubule damage. **Conclusion:** AD presents diffuse cortical atrophy,  $\beta$ -amyloid plaques, tau tangles, granulovacuolar degeneration, and neuronal loss. Biochemical changes such as acetylcholine transmission disruptions, alongside genetic predisposition, are major contributors to its pathogenesis.

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