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Decreased HDAC1 Gene Expression in Patients with Alzheimer's Disease

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ABSTRACT One of the commonest neurodegenerative diseases, Alzheimer's disease (AD), is characterized by progressive decline in memory and cognitive functions with inexorable neurodegeneration in brain. Histone-tail acetylation have been known to be associated with some crucial neurologic functions, thus, the enzymes regulating this events such as HDAC1 are associated with such neurodegenerative diseases like AD. The research objective was to document the levels of HDAC1 expression in peripheral lymphocytes harvested from patients clinically diagnosed with AD. Fifty patients diagnosed with AD, and 49 age- and sex-matched controls were recruited to the study. Total RNA was extracted, cDNA was synthesized, and HDAC1 expressions were tested using quantitative real-time polymerase chain reaction (qRT-PCR). HDAC1 expression was found significantly attenuated in patients with AD compared with the controls ($p<0.001$). The research data suggested that lower expression levels of HDAC1 may have an impact in the etiology or disease course of AD.