

Cytogenetic Analysis and Screening of ApoE and Neurotransmitters in Alzheimer's Patients in Tamil Nadu Population

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KEYWORDS Biochemical Parameters. Chromosomal Aberration (CA). Copper Exposure. Late-onset. Micronucleus (MN). Polymorphism

ABSTRACT Alzheimer's disease (AD) is the leading neurodegenerative disorder and the cause of dementia in the elderly people. The current research investigated the relevance of AD individuals challenged with copper exposure and the disease onset through cytogenetic and molecular analysis. The research was performed on 70 AD patients categorized into two groups as the early-onset with age below 65 (n=31) and the late-onset aged above 65 (n=39). The chromosomal aberrations (CAs) were examined in both the groups showing higher CAs in the late-onset and the anomalies were seen in the chromosomes 10q, 9p, 9q, 14p and 19q in 21 patients and the micronucleus (MN) assay was also found to be higher in the late-onset patients. Assessment of ApoE gene showed a definite significant difference between the two groups. In this study, the exposure of copper did not reveal any significant changes in the two groups, conversely, the biochemical parameters serotonin, GABA, dopamine and homocysteine were analyzed and a higher level of homocysteine was seen in the late-onset cases. Consequently, from these findings, it is pertinent to believe that, this is the first report in the Tamil Nadu region where the researchers predicted ApoE to be a molecular marker to diagnose AD.