Apolipoprotein e ε4 allele frequency in korean patients with parkinson`s disease dementia

M. Park, J.K.Park
Neurology, Yeungnam University Medical Center, South Korea

Background: It has been well known that the APOE ε4 allele is a strong risk factor in Alzheimer`s disease (AD) and occurs at an increased frequency in dementia with amyloid pathology. However, The clinical significance of the apolipoprotein E (Apo E) ε4 allele in Parkinson`s disease dementia (PDD) with synucleinopathy has been a subject of debate. PDD is one of the second most common subtypes of dementia in Korean population. The Apo E allele frequencies were evaluated in Korean patients with probable PDD diagnosed by the MDS task force criteria for the diagnosis of PDD in this study.

Method: Forty patients participated in the study, Twenty patients with PDD and 20 age matched healthy controls. The Apo E genotype was determined by the polymerase chain reaction (PCR) and allele specific hybridization using the Apo E typing test kit.

Results: The Apo E ε4 allele frequency in the PDD group was 35% and was significantly higher than those of normal controls (15%) (p<0.05). The Apo E ε4 carrier frequency in the PDD group was 60%, and also significantly higher than those of normal controls (30%)(p<0.05). The Apo E ε3 allele was the most frequent genotype in Korean population generally in this study.

Conclusion: These results that the elevated Apo E ε4 frequency in the PDD with synucleinopathy in which the overall brain neuritic plaque burden was low, indicates that apoE ε4 might contribute to neurodegeneration through mechanisms unrelated to amyloid processing.