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### The effect of apolipoprotein E genotype in the late mild cognitive impairment: A longitudinal study

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**Background:** Late mild cognitive impairment (LMCI) is described as performance of 1.5 standard deviation below the normative mean of cognitive tests. Late MCI has highest risk of transformation to Alzheimer's disease. It is well known that APO-ε4 is an important risk factor for developing AD. We aimed to evaluate the effect of APOE-ε4 status in cognition and brain volume in LMCI.

**Method:** Change from baseline to month 24 in hippocampus volume and AD Assessment Scale (ADAS)-13 score were evaluated according to APOE-ε4 status in LMCI from Alzheimer's Disease Neuroimaging Initiative (ADNI) data. Cases were divided into two groups as non-carriers (NC) and carriers (C) (homozygot and heterozygot) according to APOE-ε4 genotypes.

**Results:** Total 180 LMCI cases (male/female: 128/52, APOE-ε4 carriers: %60) enrolled to the study. Mean age, baseline ADAS-13 score, hippocampal volume of NC and C were 75±8, 74±6 years, 18±5.5, 19±5.7, 6537±1228mm<sup>3</sup>, 6238±1056mm<sup>3</sup>, respectively. No statistical differences were detected between the groups. ADAS-13 score and hippocampal volume after 24 months of NC and C were 20±7.5, 25±9, 6312±1417mm<sup>3</sup>, 5980±1036mm<sup>3</sup>. ADAS-13 score were found significantly different between the groups. No gender difference was found between groups in evaluation of baseline and 24 months after.

**Conclusion:** Our results showed that although there was no significant change in hippocampus volume, there was a deterioration in cognition after 24 months in APOE-ε4 carrying LMCI cases. Therefore, evaluating APOE-ε4 and neurocognitive tests may provide earlier findings from neuroradiological assessments.

### Biography

Nilgun Cinar graduated from the Cumhuriyet University School of Medicine. She worked as practician doctor in Sinop and Ankara between 1996 and 2001. She completed her residency in Neurology in Eskisehir Osmangazi University School of Medicine. She worked in different instituitons, including Sanliurfa Siverek State Hospital and Aksaray Training and Research Hospital Neurology Services between 2006-2008. She became Assistant Professor in 2009 and associate Professor in 2013 at Maltepe University School of Medicine. She published many articles to both national and international journals. Dr. Cinar generally works in multidisciplinary areas, including cognitive neurology, stroke, headache, electrophysiology and movement disorders. She is an active member of cognitive neurology and quality of life working study group of Turkish Neurological Society. She currently works as Associate Professor of Neurology in Maltepe University, Department of Neurology.

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