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Cognitive Performance over Time and APOE4 in Non-Demented Oldest-Old (S24.007)

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Abstract

Objective: To determine if cognitive performance over time is related to the APOE4 allele in non-demented individuals aged 90 and older.

Background APOE4 is a major risk factor for developing Alzheimer's Disease. APOE4 may also serve as a predictor of significantly lower levels of cognitive performance among individuals age 90 and older.

Design/Methods: Participants were 384 non-demented individuals in The 90+ Study, a population-based longitudinal study of people aged 90 and older. Included participants were APOE genotyped, non-demented at their last in-person visit, and had completed cognitive testing every six months. Global cognition was assessed using the Modified Mini-Mental State Exam (3MS) and memory was assessed using the California Verbal Learning Test-10 min delay (CVLT). Two random effects models were fitted to estimate the overall effect of the APOE4 allele on longitudinal cognitive performance. Model 1 examined cognitive performance over time and model 2 examined the added effect of APOE4 and related interactions on cognitive performance over time. The log likelihood of model 1 and model 2 were compared with a Likelihood Ratio Test (LRT).

Results: Participants were on average 93 years of age at their first visit, 66% were women, and 15% had an APOE4 allele. The average follow up was 2 years (range: 0 years to 7 years). At baseline, the average MMSE score was 91 and average CVLT score was 6. There were no significant differences by APOE4 status on the 3MS (LRT: $p \geq 0.50$) or CVLT (LRT: $p \geq 0.22$) in non-demented oldest-old.

Conclusions: In the non-demented oldest-old, APOE4 status does not appear to be a significant predictor of cognitive performance. Factors other than APOE4 status, such as health conditions or medication usage may be related to cognitive performance over time after age 90.

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Disclosure: Dr. Balasubramanian has nothing to disclose. Dr. Kawas has received personal compensation for activities with Eli Lilly & Company as a participant on a data monitoring committee. Dr. Peltz has nothing to disclose. Dr. Corrada has nothing to disclose.

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