2012

Risk Factors for Alzheimer's Disease and Longitudinal Memory Performance

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M.K. FOSTER, M. SEIDENBERG, J. WOODARD, K. NIELSON, J. SMITH, M. LANCASTER, M. MATTHEWS, N. HANTKE, A. BUTTS & S. RAO. **Risk Factors for Alzheimer's Disease and Longitudinal Memory Performance.**

Objective: Greater risk for Alzheimer's disease (AD) is associated with carrying the apolipoprotein E (ApoE) ε4 allele and a family history (FH) of AD. Little research has examined the long-term cognitive effects of these risk factors. We examined longitudinal memory performance over five years in elders with a combination of risk factors.

Participants and Methods: Sixty cognitively intact elders underwent neuropsychological assessment at baseline, 1.5 years, and five years. Among ApoE ε4 non-carriers, 16 participants had a FH of AD, while 20 participants had no FH of AD. Twenty-four ApoE ε4 carriers comprised a third group of participants, either with (n=17) or without (n=7) a FH of AD. We used univariate repeated measures ANOVAs to identify possible group differences in memory performance and to examine potential time-by-group interactions.

Results: Longitudinally, there were significant interaction effects for time and group on the Rey Auditory Verbal Learning Test Immediate Learning, Delayed Recall, and Percent Retention variables, with ApoE ε4 carriers declining from baseline differently than the other groups. Follow-up analyses revealed that differences in memory across groups were not apparent until the five-year follow-up assessment, when the ApoE ε4 carriers performed worse than those without the ApoE ε4 allele.

Conclusions: Results suggest that the ε4 allele is associated to a greater degree than FH for AD with reduced memory performance over time. Longitudinal studies of cognitively intact individuals may require long follow-up periods, perhaps 5 years or more, to detect the influence of AD risk factors between groups.

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