

Poster presentation

The utility of measures of electrophysiological and information processing variability in distinguishing between normal age-related cognitive decline, Subjective Memory Complaint (SMC), Mild Cognitive Impairment (MCI), and Alzheimer's disease (AD)

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Background

Recent theoretical models of cognitive aging have implicated increased intra-individual variability as a critical marker of decline. The current study examined electrophysiological and information processing variability and memory performance in normal younger and older adults, and older adults with Subjective Memory Complaint (SMC), Mild Cognitive Impairment (MCI), and Alzheimer's Disease (AD). It was hypothesized that higher levels of variability would be indicative of age-related and disease-related memory deficits.

Materials and methods

24 young, 24 old, 21 SMCs, 15 MCIs, and 16 ADs (Mean age = 21.5, 72.8, 71.8, 76, and 77 years, respectively) were recruited with informed consent and received clinical assessment (Hogan *et al.*, 2003), neuropsychological screening, and electrophysiological assessment while performing an implicit and explicit memory task.

Results

Consistent with previous research, behavioural variability emerged as sensitive to age- and disease-related change. Results also indicated that amplitude variability (AmpV) of event-related potentials (ERPs) provide some additional insight into the dynamic nature of age- and disease-related memory changes.

Discussion

Results are discussed in light of theoretical and applied issues in the field of cognitive aging.

References

1. Hogan MJ, Swanwick GR, Kaiser J, Rowan M, Lawlor B: **Memory-related EEG power and coherence reductions in mild Alzheimer's disease.** *Int J Psychophysiol* 2003, **49**:147-163.