

317 - Behavioural markers of mild cognitive impairment: diagnostic value of eye-tracking study

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Background: Early diagnosis of mild cognitive impairment is important in Alzheimer's disease management before brain damage is profoundly established and irreversible. Eye-tracking technology is a sensitive method to measure cognitive impairments in dementia and MCI. We examined the saccade movement deficits in amnesic MCI and compared them with the normal controls and Alzheimer to define early cognitive markers in MCI.

Method: This study was a cross-sectional observational study. Twenty-one patients with AD, 40 patients with aMCI, and 59 normal participants were examined by eye tracking using anti-saccade task and prosaccade task with 'gap' and 'overlap' procedures.

Results: Patients with Alzheimer's made more errors, and corrected fewer errors than a-MCI and age-matched controls. Moreover, a-MCI had higher error rates in the prosaccade gap and overlap (38 ± 1.5 , $p \leq 0.001$; 21 ± 1.8 , $p \leq 0.001$) and antisaccade gap and overlap (64 ± 1.4 , $p \leq 0.001$; 45 ± 1.6 , $p \leq 0.001$) than normal controls. Compared with the control group, a-MCI also showed more uncorrected responses in the prosaccade gap (6 ± 0.5 , $p \leq 0.001$) and antisaccade gap and overlap (13 ± 0.4 , $p \leq 0.001$; 10 ± 0.7 , $p \leq 0.001$). Saccade Omission also revealed significant differences between normal controls and amnesic mild cognitive impairment in prosaccade ($p \leq 0.001$) and antisaccade ($p \leq 0.001$) tasks, in both gap and overlap paradigms.

Conclusion: Error proportion, target omission and uncorrected saccades impairments in a- a-MCI, support the concept of executive function deterioration, as an early marker of neurocognitive disorder. Our findings also confirm inhibitory and working memory impairments t in a-MCI.