

Early cognitive changes and the status of episodic memory in presymptomatic bvFTD-MAPT: A case-control study

Ashleigh O'Mara Baker, Brigid Ryan, Christina Ilse, Kiri L. Brickell, Maurice A. Curtis, Donna Rose Addis, Lynette J. Tippett

State of the art: The cognitive and behavioural profile of presymptomatic bvFTD-MAPT is varied; performance often departs from traditional bvFTD presentation. Emerging presymptomatic literature suggests medial temporal lobe (MTL) atrophy may develop prior to prefrontal cortex (PFC) deterioration. The earliest cognitive and behavioural changes were investigated in a pre-symptomatic bvFTD-MAPT cohort, focusing on both MTL-mediated tasks, e.g., episodic memory (EM), the previously unexplored, autobiographical memory (AM), and PFC-mediated tasks.

Methodology: The New Zealand Genetic Frontotemporal Dementia Study (FTDGeNZ) follows one kindred (N=23) possessing a MAPT mutation (IVS10+16). Baseline neuropsychological data, including EM assessments and experimental AM and future thinking tasks, were analysed using a case-control design. Age brackets classified presymptomatic gene carriers into two cohorts: 'Younger' (n=3) and 'Older' (n=3); these were compared with age-matched related non-carriers: 'Younger' (25-39 years; n=9) and 'Older' (40-55 years; n=8).

Results: Crawford's t-tests revealed reduced performance in language and semantic knowledge in Older cases. Younger cases demonstrated reduced performance in attention and processing. Additionally, reduced EM and mild reductions in AM were identified among one of three Older cases and one of three Younger cases.

Conclusion: Language and semantic knowledge, and attention and processing speed showed the most consistent changes across cohorts, while EM and AM results offer the first demonstration that impairment may occur prior to onset in some individuals. Results reflect bvFTD-MAPT's heterogeneity and suggest further neuropsychological characterisation is required. EM and AM findings support recent studies showing early implication of MTL-structures, unique to bvFTD-MAPT.

Conflicts of interest

No disclosures to provide