Prevalence and neurocognitive basis of delusions in dementia

Fiona Kumfor1,2,3, Ramon Landin-Romero1,2,3, Jessica L. Hazeltont1,2, Cheng Tao Liang1,2, Cristian E. Leyton2,3,4,5, Olivier Piguet1,2,3, Cassandra Kaizik6, Emma Devenney2,3,6, Emily Connaughton3,7, Robyn Langdon3,7, Eneida Mioshi8 & John R. Hodges2,3,6

1The University of Sydney, School of Psychology, Sydney, NSW, Australia; 2The University of Sydney, Brain and Mind Centre, Sydney, NSW, Australia; 3ARC Centre of Excellence in Cognition and its Disorders, Sydney, NSW, Australia; 4The University of Sydney, Faculty of Health Sciences, Sydney, NSW, Australia; 5Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA; 6The University of Sydney, Sydney Medical School, Sydney, NSW, Australia; 7Macquarie University, Department of Cognitive Sciences, Sydney, NSW, Australia; 8The University of East Anglia, School of Health Sciences, Norwich, UK

BACKGROUND & AIMS

• Delusions refer to “fixed beliefs that are not amenable to change in light of conflicting evidence”.
• Delusions and abnormal belief formation have been reported in some people with dementia, however, the prevalence of delusions in dementia and their neurocognitive basis has been underexplored.

Here, we aimed to examine the prevalence, severity and neural correlates of delusions in a large, diverse cohort of dementia patients.

METHODS

The FRONTIER dementia clinic database was reviewed for all patients with: i) informant-rated Neuropsychiatric Inventory (NPI); ii) brain MRI, iii) cognitive assessment.

487 dementia patients were eligible: 102 Alzheimer’s disease (AD), 136 behavioural-variant frontotemporal dementia (bvFTD), 53 semantic-variant primary progressive aphasia (sv-PPA), 51 nonfluent-variant PPA (nfv-PPA), 50 logopenic-variant PPA (lv-PPA), 29 frontotemporal dementia-motor neurone disease (FTD-MND), 46 corticobasal syndrome (GBS), 20 progressive supranuclear palsy (PSP).

DELUSIONS- (n = 30): Disease control group matched to Delusions+ patients according to diagnosis, disease severity and demographics.

DELUSIONS+ (n = 30): Patients reported as having delusions at least often on the informant-rated NPI

CONTROLS (n = 30): For comparison with Delusions+ and Delusions- groups on cognitive and neuroimaging assessments.

PREVALENCE OF DELUSIONS

10% of patients experienced delusions at presentation.

The highest prevalence was observed in bvFTD (5%) and AD (2.4%). Within diagnoses, 18.4% of bvFTD, 13.8% of FTD-MND and 11.8% of AD patients were reported as experiencing delusions at presentation.

The most common type of delusion was persecutory, followed by delusions of reference and then delusions of jealousy. Delusion type did not differ between diagnoses (p = .99).

CONCLUSIONS

• Our results reveal that delusions are most common in bvFTD and AD, and relatively rare in other syndromes.
• Both the cognitive and clinical profile of patients with delusions differs, and suggest possible mechanisms for the emergence of delusions in these syndromes1.
• Recognition of these complex neuropsychiatric symptoms is essential to improve management of patients with dementia, and also helps to inform neurobiological models of delusional beliefs.


Contact: fiona.kumfor@sydney.edu.au