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Identification of primary tauopathy cases in the New Zealand Neurological Foundation Human Brain Bank

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State of the art: Primary tauopathies are a heterogeneous group of neurodegenerative diseases characterized by pathological aggregation of tau protein within neurons and/or glia. Examples include progressive supranuclear palsy (PSP) and some cases of frontotemporal dementia (FTD). The New Zealand Neurological Foundation Human Brain Bank (NZ Brain Bank) is a tissue repository that collects post-mortem central nervous system tissue from people who have died from neurological disease, and from neurologically normal controls. Studies of post-mortem human brain tissue are critical to elucidate the mechanisms underlying tau pathology. The aim of this work was to identify and characterise all cases of primary tauopathy in the NZ Brain Bank, to enable their use in future studies.

Methodology: Neuropathology reports of all possible primary tauopathy cases in the NZ Brain Bank were reviewed. Updated neuropathological criteria were used to identify all cases of primary tauopathy. Tau isoform composition (3R, 4R) was determined for each case. All available demographic, clinical, processing, and storage data were collected.

Results: We identified 15 cases of primary tauopathy in the NZ Brain Bank (PSP = 7; FTD = 6; primary age-related tauopathy (PART) = 1; argyrophilic grain disease (AGD) = 1). Mean age at death was 76 (range: 64-96). Five cases were female; 10 were male. Mean post-mortem delay was 16 h (range: 3.5-48).

Conclusion: We have identified and characterized a cohort of primary tauopathy cases in the NZ Brain Bank. These cases will be further studied to elucidate the mechanisms underlying tau pathology.

Conflicts of interest

N/A