p-166

Saturday

The MiND Study bringing NfL and other markers to distinguish bvFTD from phenocopies, and clinical utility in diverse neurodegenerative and psychiatric disorders

Dhamidhu Eratne, Michael Keem, Courtney Lewis, Matthew Kang, Alexander Santillo, Qiao-Xin Li, Colin Masters, Steven Collins, Christiane Stehmann, Henrik Zetterberg, Kaj Blennow, Rosie Watson, Nawaf Yassi, Amy Brodtmann, David Darby, Samantha Loi, Mark Walterfang, Dennis Velakoulis

Background: Accurate, timely diagnosis of neuropsychiatric symptoms, in particular distinguishing behavioural variant frontotemporal dementia from psychiatric illness, can be challenging. The MiND Study is investigating the diagnostic utility of neurofilament light (NfL) and other markers, to distinguish neurological/neurodegenerative from psychiatric disorders, to lead to a widely available, routine screening blood test.

Methods: We assessed NfL, p-tau181 and GFAP in broad cohorts, including: patients assessed for neurocognitive/psychiatric symptoms at Neuropsychiatry, in a wide range of disorders including frontotemporal dementia, Alzheimer disease, schizophrenia, bipolar disorder, depression, functional neurological disorders.

Results: NfL at baseline distinguished bvFTD from non-progressor phenocopies, and diverse neurodegenerative from psychiatric disorders, with 85-90% accuracy. Data from over 500 patients/participants, will be presented, with real patient and family stories to demonstrate the challenges and potential clinical impact of The MiND Study. Plasma P-tau181 distinguished Alzheimer disease (mainly younger sporadic), from non-Alzheimer. As recruitment, sample analysis, data collection is ongoing, the most up-to-date results including GFAP, cognitive and neuroimaging markers, will be presented.

Conclusions: NfL shows great promise as a diagnostic screening blood test, akin to a “CRP for the brain”. Plasma NfL could significantly improve accurate diagnosis and confidence of bvFTD and non-progressive phenocopies in real world clinical settings. Plasma p-tau181 shows strong diagnostic utility in younger-onset Alzheimer disease. NfL could dramatically alter clinical care of patients with neuropsychiatric and neurological symptoms, improving outcomes for patients, their families, the healthcare system, and clinical trials, facilitating precision medicine algorithmic diagnostics incorporating other biomarkers and clinical/cognitive markers, for real- world clinical settings.

Conflicts of interest

N/A