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Identification of Clinical and Behavioral Outcomes Predictive of FTLD-TDP Pathology

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Frontotemporal Lobar Dementia (FTLD) is a neurogenerative disease often misdiagnosed as Alzheimer's Disease (AD), resulting in poor treatment outcomes (Rascovsky et al., 2011). Multi-factorial approaches are increasingly being applied to yield more accurate and earlier diagnoses. These standard clinical outcomes include MRI imaging, biomarkers, and assessments of cognitive ability. While each of these outcomes are partially predictive of FTLD diagnosis, none alone carry enough power to differentiate FTLD patients from other dementias, including AD. One notable variable is TDP-43, a DNA-binding protein involved in regulating the FTLD risk gene UNC13A, suggested as one of the more effective biomarkers for early FTLD diagnosis. While it is understood that TDP-43 serves as a good diagnostic biomarker, it is less understood what unique clinical outcomes emerge as a consequence of FTLD-TDP pathology compared to other TDP-related diagnoses. To examine best clinical predictivity, exploratory analyses will be run to investigate outcome combinations that most accurately identify TDP-43 pathology. These variables include: CSF tau concentration, level of cognitive ability, and cerebral gray matter volume. Data was extracted from the National Alzheimer's Coordinating Center (NACC). Inclusion criterion were completeness of the following items/scores: FTD diagnosis, T1 scan (gray matter volumes), Montreal Cognitive Assessment (MoCA), CSF tau, and TDP-43 pathology. Structural equation modeling (SEM) - specifically between FTLD-TDP patients compared to FTLD patients investigated the predictiveness of these variables. Data collection is still being conducted and results will be presented and discussed in full during the oral presentation. Overall, the results are expected to shed light on what combination of clinical outcomes are most related to FTLD-TDP pathology over other FTLD cases.

Keywords: FTD, FTLD, Alzheimer's Disease, TDP-43, Tauopathy, MRI, Gray Matter Volume