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Deciphering CSF protein signatures in FTD

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State of the art: Frontotemporal dementia (FTD) encompass a spectrum of dementias characterized by neurodegeneration in frontal and/or temporal lobe. Due to the diversity of clinicopathological symptoms and similarity with other neurodegenerative disorders, FTD is difficult to diagnose. Detailed understanding of the processes and proteins involved is critical in order to identify new biomarkers for accurate diagnosis, diseases progression and use in clinical trials.

Methodology: We used a targeted multiplex antibody-based suspension bead array technology to analyse the relative levels of > 350 proteins in CSF from > 600 individuals with different variants of FTD (mostly sporadic), other neurodegenerative disorders and healthy individuals. The measured proteins were thoroughly selected from the Human Protein Atlas (www.proteinatlas.org) based on their RNA expression level in brain tissues, brain tissue and cell type specificity and reliability of the available antibodies. Additionally, selected targets from literature and previous in-house neuroproteomic efforts were included.

Results: Correlation clustering analysis will be performed to identify protein clusters associated with FTD pathology. The protein clusters will be further analyzed in relation to clinical presentation of patients.

Conclusion: We aim to provide insights into proteins involved in FTD pathology and unravel the association between CSF brain proteins and clinical measurements. The ultimate goal is to provide a comprehensive overview of these protein signatures also in the context of other diseases, expanding our current understanding of neurodegenerative disorders.

Conflicts of interest

N/A