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Longitudinal profile of blood biomarkers in primary progressive aphasias and relation to brain atrophy and cognitive impairment

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State-of-the-art: Primary progressive aphasias (PPA) are a heterogenous group of dementia syndromes with characteristic speech disturbances including the non-fluent (nfvPPA), semantic (svPPA) and logopenic variant (lvPPA). The neuropathological differences and their relation to brain atrophy are still not fully understood and easily accessible biomarkers to support differential diagnosis and for prognosis are highly desired.
Methodology: In this prospective study, we longitudinally investigated the blood biomarkers GFAP (astroglial marker), NfL (neurodegeneration marker) and pTau181 (marker of amyloid/tau pathology) in serum of patients with nfvPPA (n=73), svPPA (n=63) and lvPPA (n=39) from the German FTLD consortium. Healthy control subjects (n=44) and Alzheimer´s disease (AD, n=14) patients were included for comparison. Cognitive decline was assessed by clinical scores (CDR-SB, FTLD-CDR, MMSE) and brain atrophy by structural MRI.
Results: All measurements are done and data analysis is ongoing. We will show group differences and the time course of biomarker levels in the PPA variants shedding light on the pathological mechanisms and differences between PPAs. The differential diagnostic performance of the individual markers and biomarker combinations will be shown. Correlation analysis of biomarker levels with clinical scores and structural MRI will demonstrate the relationship of astrogliosis, neurodegeneration and amyloid/tau pathology with cognitive decline and brain atrophy in PPAs. The longitudinal follow-up of patients will enable a conclusion on the temporal profile of pathological alterations and the prognostic value of the blood biomarkers.
Conclusion: We will provide a thourough characterization of blood biomarker profiles in PPAs and their relation with brain atrophy and cognitive decline.

Conflicts of interest

N/A