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Serum neurofilament light as a diagnostic biomarker to differentiate frontotemporal dementia from primary psychiatric disorders

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State of the art
There is a need for reliable biomarkers that could differentiate behavioral variant frontotemporal dementia (bvFTD) from primary psychiatric disorders (PPD). Serum neurofilament light (sNfL) has emerged as a candidate biomarker, but large-scale studies in PPD are lacking in order to validate its discriminative accuracy versus bvFTD.
Methodology
Clinical data and serum samples were obtained from Biobanque Signature for patients over age 40. sNfL samples were measured using Simoa technology (PPD n=871 – mood, anxiety, psychotic, personality, and other disorders; controls n=69). Multiple regressions were used to determine confounders and to test for group differences in sNfL between PPD and controls.
Results
sNfL increases slightly with age ($p<.001$). sNfL was slightly higher in PPD (all diagnoses) compared to controls ($p=.003$) when controlling for age and sex, accounting for 11.0% of variance, $R2=.113$, $F(3, 939)=39.782$, $p<.001$ (controls =11.73 pg/mL +/- 7.15; PPD = 15.96 +/- 19.63). Each diagnostic category had elevated sNfL values in comparison to controls, with the highest values seen in the "other" and "mood" PPD groups (21.02 pg/mL +/- 15.12; 17.40 pg/mL +/- 24.96). In next steps, we will test accuracy of sNfL to differentiate PPD and bvFTD using ROC curves.
Conclusion
sNfL values are slightly higher in PPD compared to controls, however it remains well below published data on FTD. Diagnostic accuracy tests will be performed for presentation at the meeting.

Conflicts of interest

N/A