

### Longitudinal portrait of cognitive abilities in the three main PPA variants

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**State of the art.** Recent studies have described the longitudinal profile of language deficits in the main variants of primary progressive aphasia (PPA): nonfluent/agrammatic (nfvPPA), semantic (svPPA) and logopenic (lvPPA). However, very few have explored how other cognitive abilities such as memory, calculation, visuospatial and executive functions evolve over time. This study explored the various trends in cognitive impairment in PPAs along disease course.

**Methodology.** Data were collected retrospectively by three experienced raters in 83 deceased patients' charts (lvPPA: n=42, onset 69.2 yo; svPPA: n=19, onset 63.9 yo; nfvPPA: n=22, onset 73.2). Presence or absence of impairment in each cognitive function was determined via consensus at eight different time points. Both education and initial MMSE scores were similar among the groups.

**Results.** All groups showed an early and severe dysexecutive pattern, but this was seen precociously in lvPPA. Memory was impaired early in lvPPA while it remained preserved for most of the disease in nfvPPA. Both lvPPA and nfvPPA presented visuospatial deficits with disease progression, whereas this ability remained preserved up to five years after initial visit in svPPA. Calculation was often impaired 1 year after initial visit in both lvPPA and nfvPPA, whereas this occurred later in svPPA. svPPA was most impaired in object recognition.

**Conclusion.** Longitudinal trends in cognitive impairment were different among the PPA variants. lvPPA most affected memory whereas nfvPPA was more associated with visuospatial and calculation deficits, and svPPA with object recognition. Better knowledge of disease evolution is critical for counseling patients and families.

### Conflicts of interest

The authors report no conflict of interest.