Subtype Classification in Primary Progressive Aphasia Using Operationalized Criteria

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September 1, 2021

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Introduction

According to current diagnostic criteria, primary progressive aphasia (PPA) is classified into three main variants: a nonfluent-agrammatic (nfvPPA), a semantic (svPPA) and a logopenic variant (lvPPA) [1]. As previous studies have shown, not all patients can be clearly assigned to one of these subtypes (10-41% unclassifiable; [2]). The PPA main types are defined by distinct patterns of impairment across different speech and language domains. However, the classification scheme does not provide clear guidance on when task performance is considered impaired. In the meantime, a few studies have proposed strictly operationalized criteria for classifying the variants [e.g., 3-5]). To our knowledge, a comparable approach for German-speaking patients with PPA does not yet exist. The aim of the present study was to determine how well the classification system can be applied to German-speaking patients with PPA using clearly defined criteria and norm data from established speech- and language batteries.

Methods

So far, 35 native German-speaking patients (15 female) who met the core criteria for PPA [1], were included in the study. Assessment of speech- and language functions included (a) the *Aachen Aphasia Test [AAT]* subtests comprehension of single-words and sentences, confrontation naming, sentence repetition, and written language [6], (b) ratings of agrammatism, word-retrieval and phonological errors in spontaneous speech production according to AAT guidelines, semantic sorting subtests of the *Nonverbal Semantics Test* (NVST; [8]), and (d) consensus ratings of motor speech performance using German language assessment instruments for apraxia of speech (*Hierarchical Word Lists - compact version*; [9]) and dysarthria (*Bogenhausen Dysarthria Scales*; [10]). Definitions of impaired task performance were established for all variables, using published norms where available.

Results

According to preliminary analyses, 26 participants (74.3%) could be clearly assigned to one of the main PPA variants (25.7% PPA unclassifiable). 10 patients each met the clinical criteria for nfvPPA and svPPA (28.6% each). 6 patients (17.1%) could be classified as lvPPA.

Conclusions

The tests used and the criteria defined for performance impairment allowed for a PPA classification in the majority of cases. With 25.7%, the proportion of unclassifiable cases was within the range of previously published studies. This suggests the general feasibility of the approach.

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