

Verbal fluency as a “cognitive ESR”: examination of fluency deficits in six neurodegenerative disorders

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State of the art

Verbal fluency tests are quick and easy to administer, and differentiate between healthy populations and those with neurodegenerative disease. How well verbal fluency tests differentiate between patient groups remains unclear. We used a transdiagnostic approach to examine fluency performance in six clinical groups representing diverse cortical and subcortical neurodegeneration, including frontotemporal dementias (FTD), Alzheimer’s disease (AD) and ‘parkinson-plus’ disorders.

Methodology

One-minute category (animals) and letter fluency (“p”) tasks were administered to 33 controls and 139 patients at a baseline clinical visit: 18 AD, 16 behavioural variant of FTD, 36 progressive supranuclear palsy, 17 corticobasal syndrome, 26 non-fluent variant and 26 semantic variant (sv) of primary progressive aphasia (PPA). We assessed group differences for total words produced, psycholinguistic word properties, and associations between production order and exemplar psycholinguistic properties.

Results

Total word count distinguished healthy controls from all patient groups, but neither total-words nor the word properties differentiated between the patient groups. Receiver operating characteristic curves revealed that, when comparing controls to patients, the strongest discriminators were total word count followed by word frequency. Fluency word counts were associated with global cognitive severity as measured by the Addenbrooke’s Cognitive Examination-Revised.

Conclusion

Like the traditional erythrocyte sedimentation rate (ESR) in internal medicine, verbal fluency tests are clinically efficient and sensitive for detecting diverse diseases, but they are of limited utility for differential diagnosis. The similarity of performance across a wide range of neurodegenerative cognitive disorders points to the multiplicity of brain systems normally engaged in verbal fluency.

Conflicts of interest

None