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## Speech profile in different clinical PSP phenotypes: an acoustic-perceptual cohort study

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*Introduction:* Progressive supranuclear palsy (PSP) is a neurodegenerative disease with pathologic hallmarks and different clinical presentations. Recently, the Movement Disorder Society (MDS) promoted a new classification; specific combinations of the core clinical features identify different phenotypes, including PSP with Richardson's syndrome (PSP-RS) and PSP with predominant parkinsonism (PSP-P). Since speech disorders are very common in PSP, they were included in the MDS-PSP criteria as a supportive clinical feature in the form of hypokinetic, spastic dysarthria. However, little is known about how dysarthria presents across the different PSP variants.

*Objective:* To evaluate the presence of differences in speech profile in a cohort of PSP-RS and PSP-P patients. Moreover, demographic and clinical variables were compared in these groups.

*Methods:* This prospective cohort study included patients with a clinical diagnosis of PSP according to the MDS-PSP criteria and admitted at the Neurology Department of the University Hospital of Modena or at the Neurology Unit of AUSL-IRCCS of Reggio Emilia. Each patient underwent to neurological evaluation and perceptual and acoustic analysis of speech. The clinical phenotype was determined according to the MDS-PSP criteria. Disease severity was rated using the Natural History and Neuroprotection in Parkinson plus syndromes–Parkinson plus scale (NNIPPS), including global score and sub-scores.

*Results:* Twenty-five patients were classified as PSP-RS while sixteen as PSP-P. These subgroups had homogeneous demographical and clinical characteristics, including disease severity quantified by the NNIPPS total score. No significant differences were found in all speech variables between the two groups. Only the NNIPPS oculomotor function sub-score significantly differed, being more impaired in PSP-RS patients.

*Conclusion:* The similar speech profile between the two different PSP subgroups examined are in keeping with the indication of the MDS-PSP criteria in considering dysarthria as a diagnostic supportive feature of PSP and not a distinguishing feature of the various phenotypes.