

German Glut1DS speech study

Abstract

Background: Dysarthria is a common symptom in Glut1DS; however, no valid data exist regarding its frequency and severity. The influence of speech motor deficits on language production and whether the presence of dysarthria distorts the assessment of patients' linguistic-cognitive performance remain unclear.

The **aim** of this cross-sectional study is to comprehensively describe and systematize the characteristics of dysarthria in children and young adults with Glut1DS, as distinct from language skills.

Methods: 28 children/young adults ($N=28$) were examined using the Bogenhausener Dysarthria Scales (BoDyS), a standardized German dysarthria assessment. Nine functional scales were used to quantify dysarthria severity and degree. Qualitative characterization of the disorder profile was based on the dysarthria-typical disorder features assigned to each scale. These features were analyzed for their presence or absence in each sample. The Patholinguistic Diagnostic, a standardized German assessment for developmental language impairment, was used to assess receptive phonological abilities.

Results: Using case studies as examples, initial results are presented: An interindividual wide range of overall severity (*G-value*) indicates strong heterogeneity of dysarthric expression in Glut1DS. Intraindividual error patterns were constant for all subjects. The functional area of articulation is most severely affected in relation to better receptive phonological performance.

Conclusion: Previous results confirmed the presence of dysarthria of varying severity with a constant pattern of errors in most patients with Glut1DS. Therefore, it is necessary to consider speech motor deficits when assessing language and cognitive abilities. The verification of the results using a larger sample is in progress.