DEVELOPMENT OF THE UPPER LIMB MOTOR SCALE: "AWARENESS OF FUNCTIONAL TASKS WITH ARM AND HAND IN STROKE" (AFAS) FUNCTIONAL TASKS WITH THE ARM SUBSECTION

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Purpose: About 70% of people with stroke are unable to use their hand in daily life. Most stroke motor scales evaluate distance of movements, and/or allow for compensatory movements, which may lead to secondary complications in joints and muscles. Further, body awareness plays an important role in improving movement. The “Awareness of Functional tasks with Arm and hand in Stroke” (AFAS) evaluates quality of movement (motor section, MS) and a person’s ability to describe how well the movement was performed (body awareness section, BS). The purpose of this study is to evaluate inter-rater reliability and concurrent validity of the arm section of the AFAS scale (5 items).

Subjects: We recruited participants with stroke between 18-99 years of age; with ischemic or hemorrhagic stroke; upper limb hemiplegia; good cognitive function; without severe neglect, aphasia, or apraxia.

Methods: Inter-rater reliability was tested with ICC and kappa. Concurrent validity was tested with Spearman correlations.

Results: We evaluated 27 adults (mean age 55±13 years, range 25-81; 9 females; 4.79±3.11 years post-stroke; 22 with ischemic brain lesions). AFAS inter-rater reliability was good to excellent (ICC=0.97-0.99; κ=0.69-0.98). There was a high correlation between AFAS MS and Motor Evaluation Scale for Upper Extremity in Stroke Patients (MESUPES) (p=0.96, p<0.0001). There was a fair correlation between AFAS BS and Multidimensional Assessment of Interoceptive Awareness (MAIA) (p=0.44, p=0.02). There was a moderate correlation between AFAS MS and AFAS BS (p=0.57, p=0.002), strengthening the assumption of the importance of body awareness during movements.

Conclusions: AFAS is reliable with excellent construct validity for AFAS MS and fair construct validity for AFAS BS.

Clinical relevance: This study demonstrates high inter-rater reliability of the AFAS scale in measuring post-stroke quality of movement and body awareness of the upper limb during functional tasks. We recommend its use in the clinic and for research.