

**FERNE Journal Club Comments 12/30/2022**

***Publication Title:***

*Early prediction of upper limb functioning after stroke using clinical bedside assessments: a prospective longitudinal study*

***Citation:***

[Alt Murphy, Margit, et al. "Early Prediction of Upper Limb Functioning after Stroke Using Clinical Bedside Assessments: A Prospective Longitudinal Study." \*Scientific Reports\*, vol. 12, no. 1, 21 Dec. 2022, www.nature.com/articles/s41598-022-26585-1, 10.1038/s41598-022-26585-1. Accessed 30 Dec. 2022.](#)

***Clinical Question:***

Is it possible to predict upper extremity recovery after stroke using simple bedside assessments so that clinical planning can take place?

***What was the study, who was included, & how was it done:***

A secondary analysis of Stroke Arm Longitudinal Study at Gothenburg University (SALGOT). Initial findings 3 days after the stroke ictus were compared to the 3-month Action Research Arm Test (ARAT) scores.

94 adults, mean age 68 admitted to a stroke unit with upper limb impairment.

Modelling with logistic regression used 70% of the patient set for training, with 30% of patients for model testing.

***What was found:***

Three findings were correlated with outcome: ability to grasp, to produce any measurable grip strength, and abduct/elevate shoulder.

Some patients with predicted poor outcome had a good outcome. Additional measurement of grip strength at 4 weeks post-stroke and hemorrhagic stroke etiology explained the underestimated classifications.

***What was concluded and discussed:***

In clinical practice, early prediction of motor outcome is necessary to select the most appropriate interventions and disposition for each patient.

Expected good recovery: intensive early rehabilitation to regain use.

Expected poor recovery: prevent further deterioration (e.g. atrophy, learned non-use).

Every fifth patient with initial poor motor function and expected poor outcome, reached a good functional outcome at 3-months post stroke. All these 6 patients had a measurable grip strength present at 4 weeks post stroke. Most of these patients had an initial hemorrhagic stroke.

***What is the clinical significance of the information:***

Motor dysfunction is an important predictor of outcome, especially for mild to moderate outcome strokes. If these simple bedside tests, performed with the patient sitting up, can predict a likely good outcome, then aggressive, early functional therapies can be introduced with confidence in effectiveness.

These three exam findings: ability to grasp, grip strength, and arm/shoulder abduction against gravity, can be documented in the Emergency Department H & P so that immediate physical therapy can be introduced to achieve the best patient outcomes.