

Cognition and activity early after stroke

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligen försvaras i Hörsal Arvid Carlsson, Academicum, Medicinaregatan 3, den 12 november 2021, klockan 09:00

av Tamar Abzhandadze

Fakultetsopponent:

Anders Kottorp, Professor
Malmö Universitet, Sverige

Avhandlingen baseras på följande delarbeten

- I. **Abzhandadze T.**, Buvarp D., Lundgren-Nilsson Å., Sunnerhagen KS. Barriers to cognitive screening in acute stroke units. Submitted (2021)
- II. **Abzhandadze T.**, Rafsten L., Lundgren-Nilsson Å., Sunnerhagen KS. Feasibility of Cognitive Functions Screened with the Montreal Cognitive Assessment in Determining ADL Dependence Early After Stroke. *Front Neurol.* 2018; 9: 705. doi:10.3389/fneur.2018.00705
- III. **Abzhandadze T.**, Rafsten L., Lundgren-Nilsson Å., Palstam A., Sunnerhagen KS. Very Early MoCA Can Predict Functional Dependence at 3 Months After Stroke: A Longitudinal, Cohort Study. *Front Neurol.* 2019; 10: 1051. doi:10.3389/fneur.2019.01051
- IV. **Abzhandadze T.**, Reinholdsson M., Palstam A., Eriksson M., Sunnerhagen KS. Transforming self-reported outcomes from a stroke register to the modified Rankin Scale: a cross-sectional, explorative study. *Sci Rep.* 2020; 10: 17215. doi:10.1038/s41598-020-73082-4

**SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR NEUROVETENSKAP OCH
FYSIOLOGI**



Cognition and activity early after stroke

Tamar Abzhandadze

Department of Clinical Neuroscience, Institute of Neuroscience and Physiology,
Sahlgrenska Academy, University of Gothenburg, Sweden, 2021.

Abstract

Introduction and aims: Cognitive impairment and dependency in activities of daily living (ADL) are common consequences of stroke. Due to a decrease in the length of hospital stay, assessment of these conditions has become necessary for the planning of discharge and rehabilitation. This thesis aimed to investigate the barriers to cognitive screening in acute stroke units, to understand whether cognitive impairment very early after stroke can explain ADL dependency at 36–48 h and three months after stroke, and to understand whether self-reported outcomes from a stroke register could be transformed into valid and reliable stroke scales.

Methods: Four quantitative studies were conducted accordingly, of which three were cross-sectional and one was a longitudinal study. Patients admitted to acute stroke units at Sahlgrenska University Hospital between 2011 and 2018 were included in the study. Two stroke registries and one research database were used during the analysis. Cognition and ADL were evaluated while the patients were in an acute stroke unit. Three-month follow-up data were gathered via self-reported questionnaires, telephone interviews, and/or physician visits. Agreement, correlation, classification, and regression analyses were also conducted for the chosen data.

Results: The sample size varied between 305 and 1,145 patients. A small majority of the included patients were men (54–59%). The median age of the patients ranged from 70 to 74 years. Most patients had mild stroke severity. Variables encompassing impaired body functions, activity limitations, worsened health conditions, and environmental factors explained barriers to cognitive screening in acute stroke units. Furthermore, cognitive impairment within 36–48 h after admission to the stroke units could explain ADL dependency two days and three months later. Self-reported questions about ADL three months after stroke could be transformed into a valid clinical scale to assess global disability after stroke.

Conclusions: The barriers to cognitive screening can be both, patient-and organization-related. Cognitive function screened very early after stroke can be used to expand ADL dependency. Self-reported questions can be transformed into valid and reliable stroke scales using various techniques. However, it is important to note that, as the study results are based on SU cohorts, external validation is needed to strengthen the conclusions.

Keywords: Acute stroke, Activities of Daily Living, Cognition, Function, Dependency, Functional cognition, Global disability, Prediction, Screening, Assessment, Stroke unit, Registries, Ischemic stroke, Intracerebral hemorrhage, Occupational therapy, Rehabilitation.