

Predictors of Favorable Outcome in Stroke Patients 2 Years after Discharge from Geriatric Rehabilitation

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Introduction

This study was done to determine the independent long-term predictors of functional outcome in elderly stroke patients with a high level of co-morbidity.

Methods

We prospectively recruited 302 consecutive patients transferred to inpatient geriatric rehabilitation with a median of 23 days after stroke. The cohort with a mean age of 75.1 years (range 60-90) was followed up for 2 years after discharge from rehabilitation. 215/302 patients survived, 185/215 patients could be assessed. The predictive power of 17 variables (Table 1) was analyzed by logistic regression.

Results

Table 1. Distribution of the Independent Variables in the Study Group (n=185)

Characteristics	n (%)
Age \geq 74	90 (48.6)
Gender, female	101 (54.6)
Stay in acute care \geq 23 d ^{††}	97 (52.4)
Admission BI $<$ 50 ^{††}	104 (56.2)
Previous stroke [‡]	35 (18.9)
Urinary incontinence ^{††}	34 (18.4)
Severe motor paresis ^{††}	97 (52.4)
Aphasia	32 (17.3)
Dysphagia ^{††}	21 (11.4)
No sitting balance ^{††}	38 (20.5)
Cognitive disturbance ^{††}	46 (24.9)
Localisation of stroke ^{††}	
right hemisphere	95 (51.4)
left hemisphere	74 (40.0)
cerebellum, brainstem	16 (8.6)
Coronary artery disease ^{††}	78 (42.4)
Hypertension	151 (81.6)
Diabetes mellitus	46 (24.9)
Atrial fibrillation	46 (24.9)
Ischemic stroke	161 (87.0)

[†]P $<$.05 at chi²-test for Barthel Index 0-80 vs 85-100.

^{††}P $<$.05 at chi²-test for Modified Rankin Scale 0-3 vs 4-5.

- Independence in activities of daily living (Barthel Index (BI) \geq 85) was 37.2%. It was predicted by admission BI \geq 50, urinary continence and absence of coronary artery disease (CAD) (Table 2).
- Good functional outcome by the Modified Rankin Scale (MRS \leq 3) was 33.0%. It was predicted by absence of CAD, first ever stroke, admission BI \geq 50, urinary continence, level of motor paresis and sitting balance (Table 2).

Table 2 Results of Logistic Regression Analysis with Barthel Index (BI) and Modified Rankin Scale (MRS) as Outcome Measures (n=185)

Characteristics	P	OR (95% CI)
BI 0-80 vs 85-100		
Admission BI \geq 50	0.000	6.2 (3.0-12.7)
Urinary continence	0.007	8.2 (1.8-37.9)
Coronary artery disease	0.018	2.4 (1.2-4.8)
MRS 0-3 vs 4-5		
Coronary artery disease	0.001	4.2 (1.9-9.5)
First ever stroke	0.014	3.7 (1.3-10.7)
Admission BI \geq 50	0.024	2.9 (1.2-7.4)
Urinary incontinence	0.025	7.1 (1.3-38.8)
Level of motor paresis	0.032	2.7 (1.1-6.9)
Sitting balance	0.039	5.7 (1.1-29.5)

Conclusions

Our study of a relatively aged and co-morbid stroke cohort confirmed some of the well known predictors of functional outcome. A new result is that CAD also seems to be an important determinant of long-term outcome.