The Role Of Specific Linguistic Abilities In The Motor Recovery Of Post-Stroke Patients With Aphasia

V. GINEX [1], L. VERONELLI [1], N. VANACORE [2], E. LACORTE [2], A. MONTI [1], M. CORBO [1]

[1] Department of Neurorehabilitation Sciences - Casa Cura Policlinico – Milan

[2] National Centre for Epidemiology, Surveillance, and Health Italian Promotion – National Institute of Health - Rome

Background

Aphasia is a serious consequence of stroke but aphasics patients **have been routinely excluded from participation in some areas of stroke research**[1].

Aim: To assess **the role of specific linguistic and non-verbal cognitive abilities on the short-term motor recovery** of aphasic patients with first-ever stroke to the left hemisphere after an intensive rehabilitation treatment.

Methods

Patients. 48 post-acute (M/F=24/24, mean age =75.5±12.1, mean education=7.87±4.21) first-ever stroke aphasic patients.

Independent variables.

1) Clinical variables (demographic, type and stroke size, comorbidities, premorbid functional independence, dysarthria, neglect, days from stroke to admission, duration of rehabilitation treatment).

2) Functional status at admission (Functional Independence Measure, FIM).

3) Language abilities (Aachener Aphasia Test, AAT).

4) General non-verbal cognitive abilities (Raven's CPM).

Main dependent variable → FIM motor score at discharge.

Results

The AAT allows an aphasic diagnosis, based on the performances in each of the five different subtest that assess specific linguistic abilities: 1) Token test, 2) repetition, 3) written language, 4) naming, and 5) comprehension.

Therefore, patients were classified as follows: **Amnestic (N=6), Broca's (N=9), Wernicke's (N=7) and global aphasics (N=26)**.

Motor FIM at admission (p=0.003) **and at discharge** (p=0.042), **all AAT subscales** (p=0.001) and **non-verbal reasoning abilities** (Raven's CPM, p=0.006) resulted significantly different across the different types of aphasia.

A **_Multiple Linear Regression model_** identified **_Motor FIM at admission_** and **_Token test_**, adjusted for age, gender, stroke size, duration of rehabilitation treatment, days from stroke to admission, and language abilities, as independent predictors of motor FIM scores at discharge, while **_Raven's CPM_** resulted close to statistical significance (p=0.067).

The model yielded an R^2= 0.84.

	B coefficient	t	sig
constant		0.124	0.903
Age	0.166	0.847	0.410
Gender	-0.245	-1.026	0.321
Stroke size	-0.211	-1.659	0.118
Duration of rehabilitation treatment	0.155	1.115	0.282
Days from stroke to admission	-0.038	-0.321	0.753
Motor FIM admission	0.771	4.248	**0.001**
Token test	0.699	-2.252	**0.040**
Confrontation naming	0.136	0.773	0.452
Comprehension	0.380	1.491	0.157
Raven's CPM	0.605	1.972	0.067

Conclusions

Motor function at admission resulted as the variable that most affects the motor recovery of post-stroke patients with aphasia after rehabilitation[2].

A linguistic test requiring also non-linguistic abilities, including attention and working memory[3] **(i.e. Token test)** is an independent predictor as well**.**

Our study highlights the utility of assessing specific language deficits and defining the degree of severity of aphasia in patients admitted in a rehabilitation program after stroke.

References
1 Brady MC. Int J Stroke. 2013; 8(3):193-6.
2 Gialanella B. J Neurol. 2011; 258(2):343-9.
3 Lesser R. Neuropychologia.1976; 14(1):79-85.

Sin

WebPoster