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Background and Aim:

The National Institutes of Health Stroke Scale (NIHSS) is a tool that objectively quantifies the impairment caused by a stroke¹. Its baseline score strongly predicts outcome in patients with acute ischemic stroke (AIS)².

The aim of our study was to determine risk factors for severe stroke in thrombolysed patients.

Patients and Methods:

A total of 514 thrombolysed patients were classified according to the baseline NIHSS score into two groups- patients with baseline NIHSS score ≤ 15 (n=346) and patients with baseline NIHSS score > 15 (n=168).

Statistics: T-test, Mann-Whitney test and χ² test were used for univariate analysis. Multivariate logistic regression was used to assessing the impact of those factors that showed significant in a previous univariate analysis.

Results:

Table 1. The influence of the basic demographic characteristics and the presence of risk factors on the stroke severity in the thrombolysed patients.

Variable	NIHSS ≤ 15 n= 346 (67.3%)	NIHSS > 15 n= 168 (32.7%)	Univariate p value	Multivariate p value	OR, 95% CI
Initial NIHSS, median (IQR)	8 (6-11)	18 (17-20)			
Age, mean ± SD	58.9 ± 13.324	61.1 ± 12.68	0.076		
Male, n (%)	230 (66.5)	103 (61.3)	0.250		
Risk factors					
Hypertension, n (%)	272 (78.6)	140 (83.3)	0.208		
Hyperlipidemia, n (%)	220 (64)	110 (67.5)	0.436		
Diabetes mellitus, n (%)	59 (17.1)	33 (19.6)	0.472		
Atrial fibrillation, n (%)	83 (24)	58 (34.5)	0.012	0.992	0.997 (0.561-1.774)
Smoking, n (%)	125 (36.1)	45 (26.8)	0.035	0.060	1.538 (0.981-2.411)
Previous antiplatelet therapy, n (%)	83 (24)	52 (31)	0.092		
Previous statin therapy, n (%)	37 (10.7)	12 (7.1)	0.199		
Initial glicaemia, median (IQR)	6.4 (5.6- 7.9)	6.8 (5.9- 7.975)	0.021	0.103	1.069 (0.987-1.159)

Table 2. The influence of the involvement of the carotid vascular area and left hemisphere on the stroke severity in the thrombolysed patients.

Variable	NIHSS ≤ 15 n= 346 (67.3%)	NIHSS > 15 n= 168 (32.7%)	Univariate p value	Multivariate p value	OR, 95% CI
Carotid vascular area, n (%)	266 (76.9)	156 (92.9)	< 0.001	0.001	3.248 (1.578-6.686)
Left hemisphere, n (%)	138 (39.9)	97 (57.7)	< 0.001	0.058	0.667 (0.439-1.013)

Table 3. The influence of the time consumption on the stroke severity in the thrombolysed patients.

Variable	NIHSS ≤ 15 n= 346 (67.3%)	NIHSS > 15 n= 168 (32.7%)	Univariate p value
Time to door, mean ± SD	80.81 ± 44.41	75.6 ± 38.53	0.399
Time to exam, mean ± SD	90.23 ± 45.25	85.05 ± 37.55	0.420

Table 4. The influence of the etiology according to the TOAST classification³ on the stroke severity in the thrombolysed patients.

Variable	NIHSS ≤ 15 n= 346 (67.3%)	NIHSS > 15 n= 168 (32.7%)	Univariate p value	Multivariate p value	OR, 95% CI
LAA, n (%)	63 (18.3)	34 (20.2)	< 0.001	<0.001	7.736 (2.527-23.679)
Embolism, n (%)	87 (25.2)	65 (38.7)		<0.001	7.986 (2.526-25.244)
Other, n (%)	35 (10.1)	10 (6.0)		0.001	4.657 (1.311-16.547)
Undetermined, n (%)	109 (31.6)	55 (32.7)		0.017	6.786 (2.297-20.042)
SAO, n (%)	51 (14.8)	4 (2.4)		Referent category	

LAA- large artery atherosclerosis, SAO- small artery occlusion

Conclusion

Predictors for the development of severe AIS in thrombolysed patients are- involvement of the carotid vascular area, large arteries atherosclerosis, cardioembolism, other determined and undetermined etiologies.