The analysis of psychophysical status of patients hospitalised in the acute phase of ischemic stroke and treated conservatively or with thrombolysis

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Abstract

Aim. The aim of this study was to evaluate the psychophysical status of patients with ischemic stroke treated by conservative or thrombolytic methods and the eventual differences between those patients on the first and last day of hospitalisation.

Methods. The NIHSS scale assessing the patients' psychophysical status on the first and last day of hospitalisation was used as well as the Crary 2005 Functional Oral Intake Scale (FOIS) to assess the degree of dysphagia and the Modified Rankin Scale for assessment of patients' general functional status on the last day of their stay.

Results. The study group included 100 patients (50 treated conservatively and 50 treated with thrombolysis). In the patients treated conservatively, swallowing problems decreased significantly between the first and last day of ward stay (p = 0.005), while the patients after thrombolysis the change did not occur (p=1,000). The psychophysical state of the patients in both groups improved significantly (p<0.001). The improvement was greater in the thrombolytically treated group (p< 0.001) and in the conservative treatment group - smaller but also significant (p< 0.001).

Conclusions. The type of treatment influences the psychophysical state of patients in favour of thrombolytic treatment. Patients treated with thrombolysis showed a lower physical and mental disability, and better memory recall. Age and the presence of hypertension did not influence the patients' condition, but the occurrence of haemorrhage did. The burden of arterial hypertension may pose a higher risk of stroke.

Keywords: ischaemic stroke, thrombolysis, thrombectomy, stroke scales, paresis, aphasia, ataxia, dysphagia.

Introduction

Stroke is one of the main health problems on a global scale due to its incidence, recurrent nature, high disability and high mortality. It is predicted that by 2030 it will be the cause of 41% of deaths of people between 35 and 64 years of age in developing countries and this percentage will increase with age.

There are about 50 million patients in the world who have had a stroke. According to studies from 2001-2002, the lowest incidence was recorded in Africa, Switzerland, France, Iceland, while the highest in Russia, Moldova and Romania. In Europe, about 2.5 million patients suffer from a stroke every year, of which 1/3 die and 1/3 experience permanent disability. In Poland, the incidence rate is comparable to that in Europe and is approximately 175/100,000 men and 125/100,000 women. The incidence of stroke increases with age and occurs more often in men than in women. This is associated with the occurrence of diseases predisposing to stroke, such as: arterial hypertension, ischemic heart disease, atrial fibrillation, atherosclerosis of blood vessels and diabetes, as well as an inadequate amount of exercise. Strokes also occur in young people under 45 years of age, including children (10%). The frequency of unrecognised, subclinical cerebrovascular incidents is also high. Based on magnetic resonance imaging (MRI) of the head, 11% of "healthy" people aged 55-64 years and 43% of people over 85 years of age have had a stroke incident. It is estimated that 40-50 thousand people suffer from stroke in Poland each

year, 1/2 of whom die within a year and 1/2 suffer permanent disability (Snarska & Chorąży, 2021). The causes of death are: neurological causes in 52%, immobilisation in 25%, cardiological causes in 23%, and cancer in 2%. Serious consequences of stroke include: disability, depression and vascular dementia. Stroke is associated with high economic costs, not only related to treatment, but predominantly long-term rehabilitation and treatment of post-stroke complications. Therefore, anti-stroke prevention involving diet, an active lifestyle, and regular treatment of comorbidities (circulatory system diseases, diabetes, obesity, thromboembolic disease) plays an important role in contemporary health care systems (Snarska & Chorąży, 2021).

Aim

The main objective of the study was to assess the impact of ischemic stroke treatment on the psychophysical condition of patients. The authors planned to specifically assess the condition of patients with ischemic stroke treated conservatively and with thrombolysis on the first and last day of hospitalisation. It was assumed that: different types of treatment are not equivalent in terms of improvement of patients' psychophysical condition, the patient's age affects the course of ischemic stroke and the burden of hypertension creates a greater risk of the disease.

Methods

The study was done on 100 patients of both sexes hospitalised in the Neurology Department with the Stroke Unit at the 4th Military Clinical Hospital in Wrocław. The survey was conducted from 1 January 2023 to 10 February 2024. The patients were divided into two groups: fifty patients were treated only conservatively (control group) and the other 50 with thrombolysis (study group).

The assessment of partcipants' psychophysical condition was done using the NIHSS stroke scale, enriched with additional features such as: arterial hypertension, non-invasive ventilation, invasive ventilation, haemorrhage, and death on the first and last day of the patient's stay in the hospital. The presence of dysphagia was assessed using the Functional Oral Intake Scale FOIS on the first and last day of the patient's stay in the hospital. The final assessment of the patients' status was performed on the last day of the stay using the Modified Rankin Scale. Medical and nursing documentation was also checked to further examine the patients' condition.

NIHSS scale (National Institutes of Health Stroke Scale) is a widely used tool for the initial assessment of the main symptoms of stroke and monitoring changes in the intensity of the neurological syndrome (Polit, Chmielewska-Walczak, Stopińska & Domitrz, 2021). It is considered the most sensitive scale. It can be used to assess the state of consciousness, orientation, response to commands, gaze association, range of vision, language functions, sensation and paresis of

facial muscles and limbs. The number of points on the NIHSS scale indicates the severity of stroke (range 0 to 42 points). Score 0 - 4 points indicates mild stroke, 5 - 15 points - moderately severe stroke, 16 - 20 points - severe stroke, 21 - 42 points - very severe stroke. NIHSS can be used to compare changes in the severity of neurological deficit in a given patient. A difference of 2 points is considered clinically significant for making further decisions regarding subsequent diagnostic and therapeutic activities. (Kasner, 2006). The NIHSS has been found to be an excellent predictor of patient outcomes. A baseline NIHSS score greater than 16 indicates a high probability of patient death, whereas a baseline NIHSS score less than 6 indicates a high probability of good recovery. On average, a 1-point increase in a patient's NIHSS score reduces the probability of an favourable outcome by 17% (Mishra, NK et al., 2010).

The second tool assessing independence in food intake was the seven-point Functional Oral Intake Scale (FOIS) Crary, Carnaby Mann & Groher, 2005). A score of 1–4 indicates the presence of dysphagia: score 1–3 indicates feeding with industrial food or food blended through a gastric tube, point 4 – oral feeding with food of one consistency (blended). Points 5–7 means no dysphagia.

The modified Rankin Scale (mRS) is used to assess the degree of disability or dependence on the environment in performing daily activities by a patient after a stroke. It is mainly used for planning and effectiveness of rehabilitation (Sienkiewicz-Jarosz, 2020). The Rankin Scale is a 6-point disability scale, with possible scores ranging from 0 to 5. A score of 0 is given to a patient who does not report complaints, and a score of 5 – when there is a very severe degree of disability, i.e. the patient is completely dependent on the environment and constant help from another person is necessary. The Rankin Scale (mRS) is the most commonly used outcome measure in clinical stroke studies.

The results of the survey were statistically analysed using the Statistica v. 13.3 program (TIBCO Sotfware Inc., PaloAlto, California, USA). For continuous quantitative variables (age) and discrete variables (severity of neurological deficit on the NIHSS scale, FOIS oral nutrition scale, disability level on the Rankin scale), mean values (M) and standard deviations (SD) were calculated, as well as positional statistics: medians (Me), lower (Q1) and upper (Q3) quartiles, and extreme values – the smallest (Min) and the largest (Max). The Kolmogorov-Smirnov test with Lilliefors correction and the Shapiro-Wilk test were used to assess the normality of distributions. Since the empirical distributions deviated from the normal distribution, nonparametric tests were used in further analysis. The Mann-Whitney U test was used to estimate the statistical significance of the difference in average values (medians) of quantitative variables in two independent groups (thrombolytic treatment vs. conservative treatment), and in two related groups (first day vs. last day of stay) – the Wilcoxon test.

In the case of three groups (three levels of assessment of problems with swallowing meals on the FOIS scale), the Kruskal-Wallis test was used. The correlation between quantitative variables was checked by calculating the Rho Spearman rank correlation coefficient and its 95% confidence interval.

In the case of qualitative variables (e.g. gender, hypertension, presence of noninvasive and invasive ventilation), their numbers (n) and proportions (%) were calculated and included in contingency tables, and the Chi-square test with Yates' correction or Fisher's exact test were used to assess the independence of two variables. The level of $p < 0.05$ was considered statistically significant.

Multiple regression analysis was used to assess the effect of explanatory variables on the change in psychophysical condition.

All statistical tests were two-sided at the significance level of $\alpha = 0.05$.

Results

The general characteristics of patients in both groups (study vs. control group) are presented in Table 1.

Table 1. *Sociodemographic characteristics of the study group (N=100)*

Feature (variable)	Study group (thrombolytic therapy)	Control group (conservative therapy)	Test result
Gender:			p = 0.108
Women, n (%)	19 (38%)	28 (56%)	
Men, n (%)	31 (62%)	22 (44%)	
Age (years):			p = 0.008
M±SD	65.4 ± 17.4	74.4 ± 14.2	
Me [Q1 – Q3]	69 [49 - 76]	76 [68 - 84]	
Min - Max	30 - 93	32 - 96	
Diagnosed arterial hypertension	36 (72%)	34 (68%)	p = 0.828
Severity of neurological deficit (NIHSS) on the 1st day of stay	5 [2 - 11]	5 [3 - 7]	p = 0.515
	0 - 23	1 - 29	
Oxygen therapy on the 1st day of stay	0 (0%)	2 (4%)	p = 0.495
Ventilator on the 1st day of stay	0 (0%)	1 (2%)	p = 1.000
Secondary IC haemorrhage on the 1st day of stay	0 (0%)	0 (0%)	p = 1.000
Death on the 1st day of stay	1 (2%)	0 (0%)	p = 1.000
Swallowing difficulty (FOIS):			p = 0.005
Me [*Q1 – Q3*]	7 [7 - 7]	7 [4 - 7]	
Min - Max	1 - 7	1 - 7	

n– number, % - percentage, M – arithmetic mean, SD – standard deviation, Me– median (50%), Q1 – lower quartile (25%), Q3 – quartile upper (75%), Min– the lowest value, Max– the highest value, p – test level of significance. Results of statistical significance are marked in **red**.

Source: own research

Both groups were homogeneous in terms of gender, presence of arterial hypertension and psychophysical condition (severity of neurological deficit) on the first day of stay in the ward assessed on the NIHSS scale. A significant difference concerned age. Patients treated with thrombolysis (study group) were younger than patients treated conservatively (control group), on average by 7 years (69 vs. 76 years; p = 0.008) and had less problems with oral nutrition (more points on the FOIS scale; p = 0.005) (Tab. 1).

Table 2 presents general psychophysical condition of patients (study vs. control group) on the first and last day of hospitalisation and the results of significance tests.

Table 2. *Characteristics of patients treated with thrombolysis (T) and conservatively (C) on the first (F) and last (L) day of hospital stay and the results of comparison tests (N=100).*

Feature (variable)	Day of assessment	Treatment		T *vs.* C
		Thrombolytic	Conservative	
Psychophysical status on NIHSS scale (pts), *Me* [*Q*1 – *Q*3]	First day	5 [3 - 7]	5 [2 - 11]	$p = 0.515$
	Last day	0 [0 - 2]	2 [0 - 5]	**$p = 0.003$**
	F vs. L	**$p < 0.001$**	**$p < 0.001$**	×
Swallowing difficulty on the FOIS scale (pts) *Me* [*Q*1 – *Q*3]	First day	7 [7 - 7]	7 [4 - 7]	**$p = 0.005$**
	Last day	7 [7 - 7]	7 [7 - 7]	$p = 0.303$
	F vs. L	$p = 1.000$	**$p = 0.043$**	×
Rankin disability score, (pts) *Me* [*Q*1 – *Q*3]	Last day	0 [0 - 1]	2 [0 - 5]	**$p < 0.001$**
Non-invasive ventilation (oxygen therapy) *n/N* (%)	First day	0/50 (0.0%)	2/50 (4.0%)	$p = 0.495$
	Last day	3/50 (6.0%)	6/47 (12.8%)	$p = 0.308$
	F vs. L	$p = 0.242$	$p = 0.151$	
Invasive ventilation (ventilator), *n/N* (%)	First day	0/50 (0.0%)	1/50 (2.0%)	$p = 1.000$
	Last day	0/50 (0.0%)	3/47 (6.4%)	$p = 0.110$
	F vs. L	$p = 1.000$	$p = 0.352$	
Secondary haemorrhage, *n/N* (%)	First day	0/50 (0.0%)	0/50 (0.0%)	$p = 1.000$
	Last day	3/50 (6.0%)	0/45 (0.0%)	$p = 0.244$
	F vs. L	$p = 0.242$	$p = 1.000$	
Death *n/N* (%)	First day	1/50 (2.0%)	0/50 (0.0%)	$p = 1.000$
	Last day	1/50 (2.0%)	7/50 (14.0%)	$p = 0.059$
	F vs. L	$p = 1.000$	**$p = 0.012$**	×

Me – median (50%), Q1 – lower quartile (25%), Q3 – upper quartile (75%), n – number of cases, N – group size, p – level of significance of the test. Results of statistical significance are marked in **red**.

Source: own research

The psychophysical condition of patients in both groups improved significantly (p< 0.001. In the group treated with thrombolysis, the improvement was greater, amounting to as much as 5 points (5 vs. 0 points; p< 0.001). In the group treated conservatively, the improvement was smaller, but still significant (5 vs. 2 points; p< 0.001) (Tab. 2).

On the first day of stay at the Neurology Department with the Stroke Sub-Department, the psychophysical condition of patients in both groups did not differ significantly (5 vs. 5 points; p = 0.515), but on the last day the difference turned out to be significant (0 vs. 2 points; p = 0.003). Patients treated with thrombolysis had less swallowing problems on the FOIS scale on the first day of their stay in the ward compared to patients treated conservatively (7 vs. 7 points; p = 0.005). In patients treated conservatively, swallowing problems decreased significantly between the first and last day of their stay in the ward (7 vs. 7 points; p = 0.005). In the thrombolytic group, the change in problems was insignificant due to minor problems on the first day of stay (p = 1.000) (Tab. 2).

Disability on the Rankin scale assessed on the last day of stay in the group of patients treated with thrombolysis was significantly lower compared to those treated conservatively (0 vs. 2 points; p< 0.001) (Tab. 2).

In the group of patients treated conservatively, the percentage of deaths between the first and last day increased significantly (0.0% vs. 14.0%; p = 0.012). The differences between patients treated with thrombolysis and conservatively in terms of the percentage of non-invasive ventilation, invasive ventilation and haemorrhage were statistically insignificant (p>0.05) (Tab. 2).

The psychophysical condition (NIHSS scale) in both groups of patients correlated significantly with the assessment of swallowing problems (FOIS) and disability (Rankin scale). Since the variables were step and discrete, the Spearman rho rank correlation coefficient was used to assess the interdependence of two variables (Tab. 3).

Table 3. *Spearman rho rank correlation coefficient values and their 95% confidence intervals between psychophysical status assessments, swallowing problems and disability assessments in the group of patients treated with thrombolysis and conservatively (N=100).*

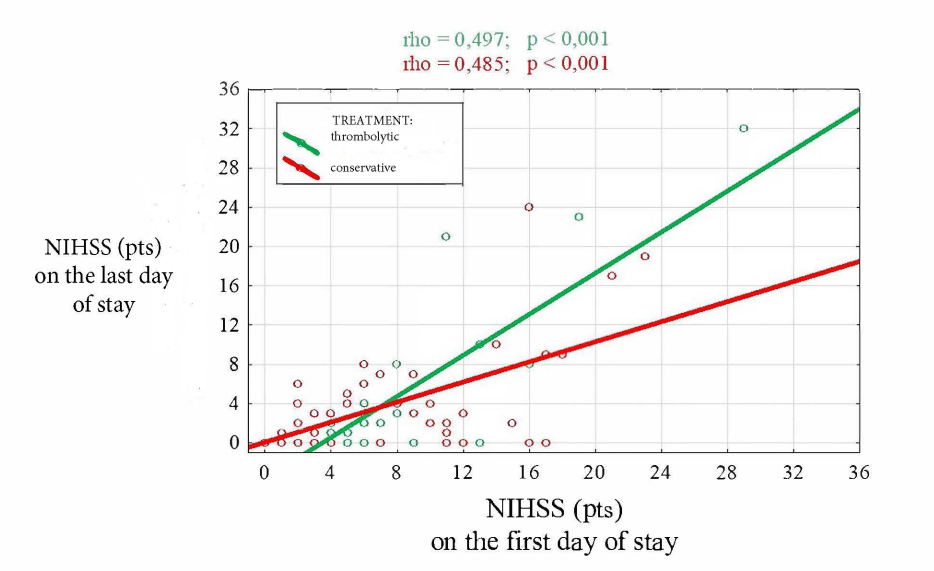
Factors influencing psychophysical status (NIHHS)	Thrombolytic treatment	Conservative treatment
Swallowing problems (FOIS scale) first day of stay	-0.437 [-0.637; -0.177] **p = 0.003**	-0.704 [-0.822; -0.530] **p< 0.001**
Swallowing problems (FOIS scale) last day of stay	-0.509 [-0.692; -0.266] **p< 0.001**	-0.480 [-0.682; -0.210] **p = 0.002**
Disability (Rankin scale) last day of stay	0.562 [0.333; 0.728] **p< 0.001**	0.626 [0.401; 0.780] **p< 0.001**

Source: own research

Lesser problems with swallowing food (more points on the FOIS scale) are accompanied by an improvement in the psychophysical condition (fewer points on the NIHSS scale). On the other hand, an increase in disability (more points on the Rankin scale) correlates positively with the assessment of the psychophysical condition (more points on the NIHSS scale) (Tab. 3).

In order to check whether and how strong is the relationship between the psychophysical condition of patients on the last day of their stay in the hospital and their condition on the first day, correlation coefficients were estimated. Spearman's rank correlation coefficients were used (Fig. 1). Both correlations turned out to be strongly positive and statistically significant. The physical condition of patients on the last day strongly depended on their condition on the first day.

Fig. 1. *Scatterplots of the psychophysical condition scores of patients treated with thrombolytic therapy and conservatively on the last day of their stay in the hospital relative to their condition on the first day, Spearman's rank correlation coefficient values and regression line equations (N=100).*



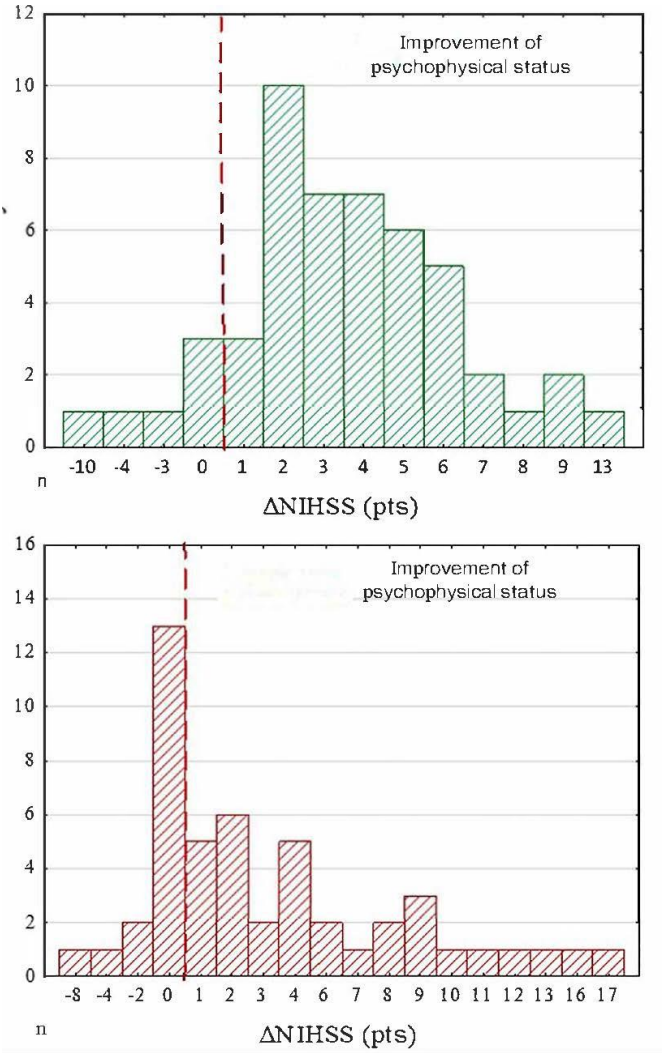
Source: own research

The change in the assessment of the psychophysical condition between the first and last day of stay in the ward was adopted as a measure of treatment effectiveness:

$$\Delta NIHSS = NIHSS_{first\ day} - NIHSS_{last\ day}\ (pts)$$

Positive ΔNIHSS values indicate an improvement in the patient's psychophysical condition. The distribution of NIHSS changes in both patient groups is illustrated by histograms (Fig. 2). The dashed line indicates the boundary from which patients with observed improvement begin.

Fig. 2. *Histograms of changes in the psychophysical condition in the groups of patients treated with thrombolysis (green) and conservatively (red) (N=100).*



Source: own research

Regression analysis was used to assess the impact of the analysed factors on the change in the psychophysical condition ΔNIHSS (Tab. 4). The factors that significantly influenced ($p<0.05$) the size of the change were: swallowing problems on the first day of stay (FOIS), dysphagia on the first day of stay, invasive ventilation on the last day of stay and haemorrhagic bleeding on the last day of stay. Since there is a strong correlation between some variables, multiple regression analysis was performed to determine the independent factors influ-

encing ΔNIHSS. Factors that were significant in univariate analysis at the level of p<0.2 were taken into account. Detailed data are presented in Tab. 4.

Tab. 4. *Results of simple and multiple regression analysis of the change in patients' psychophysical status ΔNIHSS (N=100).*

Feature (independent variable)	Analysis			
	univariate		multivariate	
	b	*p*	*beta*	*p*
Thrombolytic therapy (yes)	1.234	0.101	1.680	0.015
Age (years)	0.011	0.669	-	-
Male gender (yes)	1.682	0.051	1.018	0.132
Arterial hypertension (yes)	-1.491	0.113	-0.907	0.201
Non-invasive ventilation on the first day of stay (yes)	-1.423	0.646	-	-
Invasive ventilation on the first day of stay (yes)	4.653	0.284	-	-
FOIS on the first day of stay (pts)	-0.457	0.043	-0.459	0.179
Dysphagia in first day of stay (yes)	2.151	0.031	0.846	0.548
Non-invasive ventilation on the last day of stay (yes)	-1.085	0.457	-	-
Invasive ventilation on the last day of stay (yes)	7.628	0.005	2.929	0.360
Bleeding on the last day of stay (yes)	-8.873	<0.001	-10.94	<0.001
FOIS on the last day of stay (pts)	0.255	0.339	-	-
Dysphagia on the last day of stay (yes)	-1.450	0.212	-	-
Rankin on the last day of stay	-0.338	0.057	-0.210	0.282

b – simple regression coefficient. beta – multiple regression coefficient. p – significance level of the independent variable. variables significant at the level of p < 0.05 are marked in red.

Source: own research

As a result of the multiple regression analysis. only two independent variables remained in the model: thrombolytic treatment (insignificant in simple regression analysis) and haemorrhagic disease on the last day of stay. However. previously significant variables were excluded: FOIS on the first day of stay. dysphagia on the first day of stay and invasive ventilation on the last day of stay. Finally. the regression model for predicting the magnitude of change in psychophysical condition takes the form:

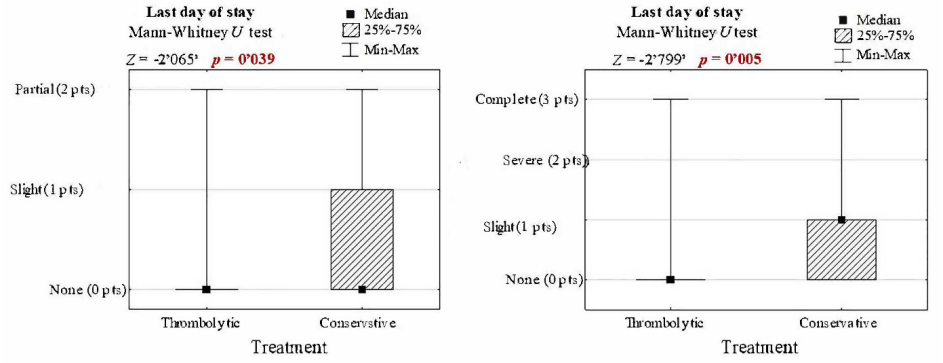
$$\Delta NIHSS = 2.26 + 1.68 * \text{Thrombolytic treatment} - 10.94 * \text{Haemorrhagic disease} \pm 3.21$$

The model for predicting change in psychophysical condition based on the type of treatment and occurrence of haemorrhagic disease on the last day of stay is adequate. as evidenced by the value of the F statistic (2. 89) = 12.9; p< 0.00001. The multiple regression correlation coefficient is R = 0.473. the determination coefficient R^2 = 0.224. which means that 22.4% of the variability was explained by the model. In the case of implementation of thrombolytic treatment and lack of haemorrhage. the predicted change in the psychophysical state will increase by 3.9 points. In the case of conservative treatment and lack

of haemorrhage. an improvement of 2.3 points should be expected. Haemorrhage on the last day of stay in the case of thrombolytic treatment means a deterioration by 7 points. and in the case of conservative treatment by 8.7 points.

On the first day of stay in the hospital. the assessment of the psychophysical condition in the individual items of the NIHSS scale in the group of patients treated with thrombolysis and conservatively did not differ significantly (p> 0.05). However. on the last day of stay patients treated with thrombolysis demonstrated better scores concerning facial nerve paralysis (p = 0.039) and speech (p = 0.005) (Fig. 4).

Fig. 3. *Assessment of the degree of facial nerve paralysis (left side - item 4 of the NIHSS scale) and speech impairment (right side - item 9 of the NIHSS scale) on the last day of stay in the ward and the results of the significance test (Mann-Whitney test) (N=100).*



Source: own research

Discussion

To the best of the authors' knowledge. there are no or almost no research papers on the same subject which compare the psycho-physical condition of patients treated with thrombolysis and conservatively. Currently. an additional element is taken into account. which is the mechanical thrombectomy procedure. Therefore. papers examining the effect of thrombolysis treatment on the health of patients were used. In all of them. there was a significant improvement in the psycho-physical condition of patients treated with thrombolysis. similarly to the results of our research.

Hebel K.. Kowiański P.. Rogoza K. in 2020 assessed the functional status of patients after ischemic stroke treated with thrombolysis. Patients' status was determined using the NIHSS and Modified Rankin Scale scales on the first and last day of hospital stay. The study group included 109 patients (55 men - 50.5% and 54 women - 49.5%). average age 69.8 years. On the day of hospitalisation. the values of these scales were as follows: NIHSS 10.11 points. Modified Rankin Scale 2.88. while on the day of discharge their values were: NIHSS 5.81. Modified Rankin Scale 2.05. A statistically significant improvement in the functional

status ($p<0.0001$) was observed in the group of patients who did not bleed. Intracerebral haemorrhage as a side effect of thrombolysis occurred in 27 cases (24.77%) and death - in 9 patients (8.26%) (Hebel. Kowiański & Rogoza. 2020).

Next research by Rosińczuk. Bonk and Kołtuniuk analysed the thrombolytic therapy in the treatment of ischemic stroke. In this study. the authors used medical records of 91 patients with ischemic stroke treated with thrombolysis. hospitalised in the Lower Silesian Specialist Hospital in Wrocław in the years 2007 – 2013. The statistical analysis showed that neurological deficits subsided in 46% of patients within 24 hours after thrombolytic treatment. examined using the NIHSS scale. and the average score on this scale after the end of hospitalisation was 1.08. The degree of patient disability on the day of dispatch was assessed using the Modified Rankin Scale. which showed that: 62% of patients were fully physically fit or with a slight disability (0 – 1 point); 13% of patients were moderately disabled (2 – 3 points); 15% of patients were severely disabled (4 points). The study involved 48 women and 43 men. The largest group of patients treated with thrombolysis were patients aged 52–59. On the day of admission to the hospital they showed numerous neurological deficits of varying severity. All of them had paresis located in different places and of varying severity. Half of the patients had no consciousness disorders. i.e. there was logical contact with them. It was demonstrated that gender does not affect the types of deficits. The largest group of patients had 6 points on the NIHSS scale. qualifying for thrombolysis. As much as 20% of participants had the highest number of points in the NIHSS (17–20). The average score was 10.03 (Rosińczuk. Bonk & Kołtuniuk. 2015).

Wawrzyńczyk. Pierzchała and Łabuz-Rozak analysed 70 patients treated with thrombolysis at the Stroke Department of the Neurology Clinic in Zabrze (years 2004-2011). Their neurological condition in order to qualify for thrombolysis treatment was assessed using the NIHSS scale on the day of admission to the hospital and then 24 hours and 7 days after the Actilyse treatment. The effect of the treatment was also examined on the last day of the patients' stay in the hospital and 90 days after the use of Actilyse using the Modified Rankin Scale (mRS) and bleeding complications during the 90-day follow-up.

In the analysed group. men predominated 43 (61.4%) and the average age was 64.7. In 54 (77.1%) patients. the neurological condition assessed on the NIHSS scale 24 hours after Actilyse was better than the initial condition. while in 28 (40.0%) an improvement of at least 4 points was observed. After 7 days. improvement was observed in 57 (81.4%) and 50 (71.4%) patients. On the other hand. when assessing the degree of fitness and independence on the day of discharge using the Modified Rankin Scale. complete resolution of symptoms or a significant degree of independence (0–2 points) was found on the mRS scale in 35 patients (50%). while after 90 days in 38 patients (54.3%). During hospitalisation. 8 (11.4%) patients died. and in the total of 3 months from the onset of the disease. 11 people (15.7%) died. Intracerebral hemorrhage was found in 11 (15.7%) patients on the control CT scan (Wawrzyńczyk. Pierzchała & Łabuz-Roszak. 2012).

Conclusions

The type of treatment has a significant impact on the psychophysical condition of patients. Patients treated with thrombolysis on the last day of their stay in the ward had better NIHSS scores compared to those treated conservatively.

The psychophysical condition did not depend on the age of the patients or the diagnosed hypertension. The change (worsening) was significantly influenced by haemorrhage on the last day of their stay.

The disability assessed on the last day of their stay (Modified Rankin Scale) in patients treated with thrombolysis was significantly lower compared to patients treated conservatively.

The independent predictors of the change in the psychophysical condition were thrombolytic treatment (stimulator) and haemorrhage on the last day of their stay (destimulator).

On the last day of their stay. patients treated with thrombolysis were in better condition than those treated conservatively in terms of answering questions about month and age. and facial nerve palsy.

Patients with arterial hypertension may pose a greater risk of ischemic stroke.

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