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The Impact of Apathetic Disorders on the Quality of Life of Patients after Ischemic Stroke

Wpływ zaburzeń afatycznych na jakość życia pacjentów po udarze niedokrwiennym mózgu

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Abstract

Introduction. Strokes often cause dysfunctions in the reception and transmission of speech, which may be aphasia or dysarthria. These disorders can lead to disability, which imposes limitations on the patient, even leads to a complete breakdown of roles and social bonds.
Aim. The main aim of the study was to assess the impact of the type and degree of apathetic disorders on the quality of life of patients after ischemic stroke.
Material and Methods. The research was carried out at the Neurological Department of the Provincial Specialist Hospital in Włocławek. On average 68 patients with apathetic disorders and diagnosed ischemic stroke were qualified for the study. The study was conducted using the method of diagnostic survey. It consisted in the assessment of patients using the generally available SODA diagnostic tool — the Aphasia Dynamics Assessment Scale and a standardized tool, the WHOQOL-BREF questionnaire by Krystyna Jaracz.
Results. When assessing the impact of the degree of aphasia on the quality of life, a statistically significant difference was observed in the overall quality of life in patients with complete (p=0.012), significant (p=0.012) and moderate (p=0.031) aphasia. In self-assessment of health status, a statistically significant difference was found only in patients with complete aphasia (p=0.048). In the physical, psychological and environmental domains, a statistically significant differences was observed in patients with severe aphasia (p=0.05).
Conclusions. The type and degree of apathetic disorders has been shown to affect the quality of life of patients. Each type of aphasia worsens the overall quality of life, and in addition, motor and sensory aphasia negatively affects functioning in the psychological field. It has also been shown that the more advanced the degree of apathetic disorders, the worse the overall quality of life, self-esteem of health, and worse physical, psychological and environmental functioning. **(JNNN 2020;9(3):108–113)**
Key Words: apathetic disorders, ischemic stroke, quality of life

Streszczenie

Wstęp. Udary mózgu często powodują dysfunkcje w odbiorze i nadawaniu mowy, które mogą mieć charakter afazji lub dyzartrii. Zaburzenia te mogą prowadzić do niepełnosprawności, która narzuca choremu ograniczenia, doprowadza nawet do całkowitego rozpadu ról i więzi społecznych.
Cel. Głównym celem pracy była ocena wpływu rodzaju i stopnia zaburzeń afatycznych na jakość życia pacjentów po udarze niedokrwiennym mózgu.
Materiał i metody. Badania przeprowadzono na Oddziale Neurologicznym Wojewódzkiego Szpitala Specjalistycznego we Włocławku. Do badań zakwalifikowano 68 pacjentów z zaburzeniami afatycznymi i rozpoznanym udarem niedokrwiennym mózgu. Badanie przeprowadzono za pomocą metody sondażu diagnostycznego. Polegało ono na ocenie pacjentów za pomocą ogólnodostępnego narzędzia diagnostycznego SODA — Skala Oceny Dynamiki Afazji oraz wystandaryzowanego narzędzia jakim jest Kwestionariusz WHOQOL-BREF autorstwa Krystyny Jaracz.

Wyniki. Dokonując oceny wpływu stopnia afazji na jakość życia zaobserwowano istotną statystycznie różnicę w ogólnej jakości życia u pacjentów z afazją całkowitą (p=0,012), znacznego (p=0,012) i średniego stopnia (p=0,031). W samoocenie stanu zdrowia istotną statystycznie różnicę stwierdzono tylko u pacjentów z afazją całkowitą (p=0,048). W dziedzinie fizycznej, psychologicznej i środowiskowej istotną statystycznie różnicę zaobserwowano u pacjentów z afazją znacznego stopnia (p=0,05).
Wnioski. Wykazano że rodzaj i stopień zaburzeń afatycznych ma wpływ na jakość życia pacjentów. Każdy rodzaj afazji pogarsza ogólną jakość życia, a dodatkowo afazja motoryczna i sensoryczna negatywnie wpływa na funkcjonowanie w dziedzinie psychologicznej. Wykazano również, że im bardziej zaawansowany stopień zaburzeń afatycznych tym gorsza ogólna jakość życia, samoocena stanu zdrowia oraz gorsze funkcjonowanie w dziedzinie fizycznej, psychologicznej i środowisku. **(PNN 2020;9(3):108–113)**
Słowa kluczowe: zaburzenia afatyczne, udar niedokrwienny mózgu, jakość życia

Introduction

In the process of speaking, information is transmitted through the articulatory-auditory canal, sometimes also through the visual canal. Thus, the activity of receiving and transmitting speech is distinguished [1]. Speech is not only the key to communication and knowledge, but also an important factor that shapes the personality and should be understood as a product of human reason that shapes thinking [2].

One of the causes of speech disorders is a stroke which causes dysfunctions, which may be aphasia or dysarthria, making it impossible for the patient to communicate with the environment [3]. In light of the findings of the World Health Organization, it should be assumed that aphasia is not only a disorder of the ability to use language and speech, but also a disorder of the ability to communicate. It leads to a disability that most often causes pathological changes, even leading to a complete disintegration of social roles and bonds, and at the same time imposing limitations on the patient [4]. Although aphasia is only one of the symptoms of brain damage, the reception and transmission of speech involve the greatest brain resources. Its complexity results in a complicated clinical picture [5]. Often, immediately after brain damage, when the stroke affects the entire "speech area", there is a complete or almost complete suppression of all aspects of the language [6,7], including other cognitive functions. In the above situation, we deal with the most severe form of language disorders — total aphasia, called global, total aphasia, which, according to Turaj [8], occurs in 11.2% of patients. In this type of aphasia, the patient is not able to communicate with the environment, even by gesture. Sometimes only with the help of head, eyelid or eyeball movement. The above disorders are also accompanied by other dysfunctions, such as disorders in the performance of purposeful movements — apraxia or memory disorders. The patient is not able to express emotions and feelings [7,9].

The intensification of the symptoms of the disease, mainly motor problems, significantly reduces professional and social activity. Patients after a stroke often have a lower earning capacity, and often go on a disability pension. So their financial situation worsens and they become less active. Difficulties in communication, problems with reading and writing limit their intellectual capacity. They negatively affect the handling of official matters and conducting telephone conversations [10].

The main aim of the study was to assess the impact of the type and degree of apathetic disorders on the quality of life of patients after ischemic stroke.

Material and Methods

The research was carried out at the Neurological Department of the Provincial Specialist Hospital in Włocławek. 68 patients with apathetic disorders and diagnosed ischemic stroke were qualified for the study. The clinical diagnosis was made by a specialist neurologist, and the diagnosis of aphasia — neuro-speech therapist. All patients consented to the study, were informed about its purpose and about the possibility of withdrawing from participation in the study at any stage.

Adult patients after ischemic stroke with aphasia were qualified to the study group — 68 people (including 26 women (38.24%) and 42 men (61.76%). The average age of the study group was 65.89 years, with the average age for women amounting to 66.85 years, and men — 64.93 years. In the study group, there were 45 patients (66.1%) people living in the city, and 23 (33.9%) living in the countryside.

The study was conducted using the method of diagnostic survey. It consisted in the assessment of patients using the generally available SODA diagnostic tool — the Aphasia Dynamics Assessment Scale and the standardized tool, the WHOQOL-BREF questionnaire by Krystyna Jaracz.

The Aphasia Dynamics Assessment Scale (SODA) allows you to observe and register dynamic changes that take place in the image of apathetic disorders. SODA is one of the newer questionnaires for aphasia, which was developed at the Department of Neurology, Collegium Medicum in Bydgoszcz for diagnostic purposes [11].

The SODA scale allows to determine the degree and type of aphasia. The SODA scale has the following criteria to assess the degree of disorders [12]: 0–0.5 points indicates complete aphasia; 1–3.5 points is severe aphasia, 4–6.5 points is moderate aphasia; 7–8.5 points indicate mild aphasia and 9 points point to no signs of aphasia.

The WHOQOL-BREF questionnaire by Krystyna Jaracz [13] is a shortened version of the WHOQOL-100 questionnaire prepared in accordance with the applicable WHO standards, contains 26 questions and allows for the simultaneous assessment of the quality of life in the somatic, social, environmental and psychological spheres.

The statistical analysis of calculations and graphics was performed using the EXCEL spreadsheet and Statistica v. 13.0. The results were considered significant at the significance level of $p<0.05$.

The research was approved by the Bioethics Committee of the Nicolaus Copernicus University in Toruń at the Ludwik Rydygier Collegium Medicum in Bydgoszcz.

Results

Table 1 presents the overall results of apathetic disorders in comparison with the quality of life of patients after stroke. The analysis of the study group showed a statistically significant relationship only in the overall quality of life ($p=0.024$) between the different types of aphasia. This means that the type of aphasia is an important factor affecting the overall quality of life. Any type of aphasia worsens the quality of life. There were no statistically significant differences in the self-assessment of health status and individual areas of the questionnaire.

The quality of life was also assessed for each type of aphasia in the study group (Table 2). As shown in the table, statistically significant differences are shown in patients with total ($p=0.048$), motor ($p=0.045$) and sensory ($p=0.032$) aphasia for the overall quality of life. In self-assessment of health, the physical field, social and environmental relations, the results do not show statistically significant differences. In the psychological field, a statistically significant differences is observed only in patients with motor and sensory aphasia. This means that the type of aphasia affects the overall quality of life as well as the psychological field.

Table 3 shows the severity of apathetic disorders in comparison with the quality of life of patients after ischemic stroke. There was a statistically significant relationship ($p=0.024$) between the grades of aphasia and the WHOQOL-BREF questionnaire only for the overall quality of life. The overall quality of life of patients therefore depends on the degree of aphasia. In other cases, no statistically significant differences were found.

The quality of life was also assessed for each degree of aphasia in the study group. As shown by data in Table 4, a statistically significant difference was observed in the overall quality of life in patients with complete, severe and moderate aphasia. In the self-assessment of health, a statistically significant differences is found only in patients with complete aphasia. In the physical, psychological and environmental domains, a statistically

Table 1. The type of disorders and the quality of life

WHOQOL-BREF	Type of aphasia	N	$\bar{x}$	SD	Kruskal–Wallis test ($p<0.05$)
WHO1 Overall quality of life	Total	8	2.63	0.74	11.229 .024
	Mixed	31	3.03	0.75	
	Motor	23	2.78	0.90	
	Sensory	6	2.50	0.55	
WHO2 Self-assessment of patients' health	Total	8	2.00	0.53	3.882 .422
	Mixed	31	2.65	0.66	
	Motor	23	2.17	0.83	
	Sensory	6	2.33	0.52	
DOM1 Physical field	Total	8	11.36	4.30	6.414 .170
	Mixed	31	11.96	2.60	
	Motor	23	11.68	3.48	
	Sensory	6	10.48	3.29	
DOM2 Psychological field	Total	8	11.42	3.22	6.506 .164
	Mixed	31	12.19	1.77	
	Motor	23	11.45	2.08	
	Sensory	6	10.44	2.22	
DOM3 Social relations	Total	8	13.00	3.00	2.273 .686
	Mixed	31	12.77	3.39	
	Motor	23	12.58	3.96	
	Sensory	6	12.89	2.18	
DOM4 Environment	Total	8	11.31	2.69	5.055 .282
	Mixed	31	11.95	2.10	
	Motor	23	11.63	2.95	
	Sensory	6	10.67	3.46	

Table 2. The results of the WHOQOL-BREF questionnaire depending on the type of aphasia

WHOQOL	Type of aphasia	N	$\bar{x}$	SD	Kruskal–Wallis test (p<0.05)
WHO1 Overall quality of life	Total	8	2.63	0.74	3.915 .048
	Mixed	31	3.03	0.75	2.149 .143
	Motor	23	2.78	0.90	4.011 .045
	Sensory	6	2.50	0.55	4.609 .032
WHO2 Self-assessment of patients' health	Total	8	2.00	0.53	3.002 .083
	Mixed	31	2.65	0.66	0.501 .479
	Motor	23	2.17	0.83	1.435 .230
	Sensory	6	2.33	0.52	0.334 .563
DOM1 Physical field	Total	8	11.36	4.30	0.813 .367
	Mixed	31	11.96	2.60	0.433 .511
	Motor	23	11.68	3.48	0.260 .610
	Sensory	6	10.48	3.29	2.504 .114
DOM2 Psychological field	Total	8	11.42	3.22	1.371 .242
	Mixed	31	12.19	1.77	1.392 .238
	Motor	23	11.45	2.08	4.756 .029
	Sensory	6	10.44	2.22	4.261 .039
DOM3 Social relations	Total	8	13.00	3.00	0.079 .778
	Mixed	31	12.77	3.39	0.267 .605
	Motor	23	12.58	3.96	0.333 .564
	Sensory	6	12.89	2.18	0.246 .620

significant difference was observed in patients with severe aphasia. The above results mean that the deeper the degree of aphasia, the worse the overall quality of life, self-esteem of health, and worse physical, psychological and environmental performance. There was no statistically significant difference among patients only in the field of social relations.

Table 3. The degree of apathetic disorders and the quality of life

WHOQOL -BREF	Degree of aphasia	N	$\bar{x}$	SD	Kruskal–Wallis test (p<0.05)
WHO1 Overall quality of life	Total	8	2.63	0.74	11.229 .024
	Significant degree	16	2.69	0.60	
	Average degree	23	2.74	0.92	
	Slight	21	3.19	0.75	
WHO2 Self-assessment of patients' health	Total	8	2.00	0.53	3.882 .422
	Significant degree	16	2.31	0.60	
	Average degree	23	2.39	0.84	
	Slight	21	2.57	0.75	
DOM1 Physical field	Total	8	11.36	4.30	6.414 .170
	Significant degree	16	10.61	2.29	
	Average degree	23	11.88	3.33	
	Slight	21	12.35	3.02	
DOM2 Psychological field	Total	8	11.42	3.22	6.506 .164
	Significant degree	16	11.33	2.18	
	Average degree	23	12.03	2.03	
	Slight	21	11.71	1.81	
DOM3 Social relations	Total	8	13.00	3.00	2.273 .686
	Significant degree	16	11.67	4.20	
	Average degree	23	12.70	3.24	
	Slight	21	13.52	3.05	
DOM4 Environment	Total	8	11.31	2.69	5.055 .282
	Significant degree	16	10.50	2.85	
	Average degree	23	12.00	2.72	
	Slight	21	12.29	1.93	

Table 4. The results of the WHOQOL-BREF questionnaire depending on the individual degrees of aphasia

WHOQOL -BREF	Degree of aphasia	N	$\bar{x}$	SD	Kruskal–Wallis test (p<0.05)
WHO1 Overall quality of life	Total	8	2.63	0.74	6.345 .012
	Significant degree	16	2.69	0.60	6.347 .012
	Average degree	23	2.74	0.92	4.673 .031
	Slight	21	3.19	0.75	0.4 .527
WHO2 Self-assessment of patients' health	Total	8	2.00	0.53	3.002 .048
	Significant degree	16	2.31	0.60	0.675 .411
	Average degree	23	2.39	0.84	0.063 .801
	Slight	21	2.57	0.75	0.110 .739
DOM1 Physical field	Total	8	11.36	4.30	0.812 .367
	Significant degree	16	10.61	2.29	4.984 .026
	Average degree	23	11.88	3.33	0.160 .690
	Slight	21	12.35	3.02	0.026 .876
DOM2 Psychological field	Total	8	11.42	3.22	1.370 .242
	Significant degree	16	11.33	2.18	4.094 .043
	Average degree	23	12.03	2.03	1.571 .210
	Slight	21	11.71	1.81	3.215 .073
DOM3 Social relations	Total	8	13.00	3.00	0.079 .779
	Significant degree	16	11.67	4.20	1.616 .204
	Average degree	23	12.70	3.24	0.400 .527
	Slight	21	13.52	3.05	0.049 .825
DOM4 Environment	Total	8	11.31	2.69	0.158 .690
	Significant degree	16	10.50	2.85	2.935 0.047
	Average degree	23	12.00	2.72	0.609 .453
	Slight	21	12.29	1.93	0.442 .510

Discussion

In the conducted studies, a statistically significant difference was observed between the patients of the study group with a different type and degree of aphasia only in the overall assessment of the quality of life (p=0.024). No statistically significant differences were found in the self-assessment of health and individual areas of the WHOQOL-BREF questionnaire. The analysis performed for each type of aphasia shows that for the overall quality of life a statistically significant difference is noted in patients with total, motor and sensory aphasia. Also in the psychological field, a statistically significant difference is found in patients with motor and sensory aphasia. Depending on the degree of the disorder, the overall quality of life is significantly influenced by complete aphasia, of considerable and moderate degree, and of the self-esteem of health, to a significant degree in the physical, psychological and environmental fields. Such results of own research indicate that the quality of life is greatly influenced not only by the type of aphasia, but also its degree. As reported by Kauhanen [14], the presence of aphasia increases the responsibility of non-verbal cognitive deficits.

Based on the analysis, it can be concluded that the deeper the degree of the disorder (complete, severe aphasia), the worse the self-assessment of health. The results indicate that the degree of aphasia has an impact on worse physical functioning, such as: weaker energy, fatigue, and reduced ability to work. In the field of psychology, these disorders affect negative feelings, worse self-esteem, memory dysfunction, and reduced concentration of attention. Problems in social and environmental relations were also noted.

It should be mentioned that in apathy, apart from the characteristic cognitive disorders, there are often: psychomotor slowing down, apathy, fatigue, low mood, insecurity, which is also reflected in the individual questions of the questionnaire. Many authors emphasize the significant influence of the neurological deficit, such as aphasia or paresis [15–18].

Neurological deficit which is the speech deficit in the studies by Jarosławska and Błaszczyk [19] examining the quality of life using the Polish version of the EQ-5D questionnaire and the SF-12 scale has a relationship, like in other authors, with physical and mental health. Jaracz and Kozubski [20] also believe that a serious neurological deficit, i.e. the risk of depression, has an impact on the quality of life. Kowalczyk et al. [21] believe that due to serious neurological deficits caused by stroke, intellectual, cognitive and emotional functions of patients are often disturbed, and physical balance disorders occur, leading to a state of dependence on other people's help, social isolation, depression and deterioration of quality of life.

Conclusions

The type and degree of apathetic disorders has been shown to affect the quality of life of patients. Each type of aphasia worsens the overall quality of life, and in addition, motor and sensory aphasia negatively affects functioning in the psychological field. It has also been shown that the more advanced the degree of apathetic disorders, the worse the overall quality of life, self-esteem of health, and worse physical, psychological and environmental functioning.

Implications for Nursing Practice

The conducted research clearly showed that the type and degree of apathetic disorders affects the quality of life of patients in its various areas. In the practice of a neurological nurse, a very important skill is to recognize speech disorders. The way and type of interventions that the nurse will use in nursing and caring, therapeutic and rehabilitation activities for the patient depends on what kind of speech disorder we are "dealing with" (motor, sensory and mixed aphasia).

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