

Patients' Knowledge after a Stroke about Selected Risk Factors for Ischemic Stroke

Wiedza pacjentów po przebytych zawale mózgu o wybranych czynnikach ryzyka udaru niedokrwinnego

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Abstract

Introduction. Stroke is a life-threatening condition, being the second leading cause of death worldwide. Risk factors significantly increase the likelihood of a cerebrovascular event. Effective prevention can delay the onset of the disease or significantly mitigate its course and complications.

Aim. The aim of the study was to assess the knowledge of patients in the Stroke Unit of the Provincial Specialist Hospital No. 2 in Jastrzębie-Zdrój after experiencing a stroke regarding selected risk factors for ischemic stroke.

Material and Methods. The study was conducted from January 26 to May 10, 2023, with a study group of 105 patients. The diagnostic survey method was employed. The research tool utilized was a self-designed questionnaire survey.

Results. Analysis of the study indicates that 44.8% of the 105 respondents believe that stroke can be prevented. Among the risk factors for ischemic stroke, respondents most frequently indicated alcoholism (96.2%), and least frequently oral hormonal contraception (1.9%). None of the respondents indicated all risk factors, with the highest number of individuals (21.9%) indicating 8 out of 13 risk factors.

Conclusions. Patients after a stroke do not possess sufficient knowledge about the risk factors for the development of ischemic stroke. (JNNN 2024;13(3):95–99)

Key Words: ischemic stroke, patient knowledge, risk factors

Streszczenie

Wstęp. Udar mózgu jest stanem zagrożenia życia, będący drugą najczęstszą przyczyną śmierci na świecie. Czynniki ryzyka udaru znacząco zwiększają prawdopodobieństwo zdarzenia naczyniowo-mózgowego. Skuteczna profilaktyka może opóźnić początek choroby lub znacząco złagodzić jej przebieg i powikłania.

Cel. Celem pracy była ocena wiedzy pacjentów Oddziału Udarowego Wojewódzkiego Szpitala Specjalistycznego nr 2 w Jastrzębie-Zdroju po przebytych zawale mózgu o wybranych czynnikach ryzyka udaru niedokrwinnego.

Materiał i metody. Badanie przeprowadzono od 26 stycznia do 10 maja 2023 r., grupę badaną stanowiło 105. pacjentów. Zastosowano metodę sondażu diagnostycznego. Narzędziem badawczym, który został wykorzystany w pracy był kwestionariusz ankiety własnej.

Wyniki. Z analizy badania wynika, że 44,8% z 105. respondentów uważa, że udarowi mózgu można zapobiec. Respondenci spośród czynników ryzyka udaru niedokrwinnego najczęściej wskazywali alkoholizm (96,2%), a najrzadziej doustną antykoncepcję hormonalną (1,9%). Spośród badanych nikt nie wskazał wszystkich czynników ryzyka, największa ilość osób (21,9%) wskazała 8/13 czynników ryzyka.

Wnioski. Pacjenci po zawale mózgu nie posiadają wystarczającej wiedzy na temat czynników ryzyka rozwoju udaru niedokrwinnego. (PNN 2024;13(3):95–99)

Słowa kluczowe: udar niedokrwieny, wiedza pacjentów, czynniki ryzyka

Introduction

Risk factors (RF) for ischemic stroke (IS) can be divided into non-modifiable (factors over which individuals have no real control) and modifiable (factors over which individuals can exert influence and change the likelihood of harmful outcomes). Among the non-modifiable factors for IS, we distinguish: gender (males), age (risk doubles every 10 years after the age of 55), genetic predispositions, race (Black) [1–6]. Modifiable lifestyle and environmental factors mainly include: substance use and exposure to active chemical substances such as alcohol, tobacco products, amphetamines, cocaine, hormone replacement therapy (HRT), oral hormonal contraception (OHC), unhealthy diet and obesity, lack of physical activity, low level of education and poor socioeconomic conditions, and stress [2,6–9]. Factors dependent on metabolic disorders and diseases include: hypertension, diabetes, heart diseases, atherosclerosis, dyslipidemia, blood disorders, metabolic disorders associated with renal failure, hypothyroidism, gout (male population), migraine with aura (female population), chronic viral and bacterial infections, obstructive sleep apnea, pre-eclampsia, history of transient ischemic attack (TIA) or IS, non-atherosclerotic diseases of the arteries supplying blood to the brain [2,10]. Biochemical and hematological factors detected in laboratory tests include: elevated hematocrit values (male population), elevated CRP and fibrinogen levels, homocystinuria, and hyperhomocysteinemia [11]. Primary prevention involves maintaining a healthy lifestyle, avoiding risk factors, and regular health monitoring in primary care. Secondary prevention aims to prevent recurrent IS, with targeted preventive actions aimed at eliminating the primary cause of the first stroke [12].

The aim of this study was to assess the knowledge of patients after experiencing a stroke regarding selected risk factors for ischemic stroke.

Material and Methods

The study was conducted using the diagnostic survey method, employing a questionnaire technique, with the research tool being a questionnaire survey. The study took place from January 26 to May 10, 2023, at the Provincial Specialist Hospital No. 2 in Jastrzębie-Zdrój. The study group consisted of 105 patients hospitalized during this period in the Stroke Unit. The criteria for inclusion in the group were: diagnosed ischemic stroke, and the ability of the respondents to complete the questionnaire. Permission to conduct the study was obtained from the Hospital Management.

Results

The study group consisted of 54 males (51.4%) and 51 females (48.6%). The vast majority were over 60 years old (89.5% of respondents). The most represented age group was individuals aged 71–80, followed by those aged 61–70. The least represented group was patients aged 50 and under (1%). The largest number of individuals had vocational education (46.7%) or secondary education (32.4%), while the smallest had tertiary education (4.8%). Over half of the participants lived in small towns (below 150,000 inhabitants) (63.8%), while only 36.2% lived in rural areas. The majority of respondents were married (59%), followed by widowed individuals (22.9%), with the smallest percentage being single individuals (8.6%). The study revealed that over half of the respondents (55.2%) believed that stroke cannot be prevented.

Subsequently, the obtained results were compared based on the education level of the respondents, excluding tertiary education due to the low number of respondents meeting the criteria for statistical testing. A correlation was observed, where an increase in education level correlated with awareness of stroke prevention possibilities. Respondents with secondary education mostly (67.6%) agreed that stroke can be prevented, while those with vocational education agreed only 38.8% of the time. Among respondents with primary education, awareness of stroke prevention possibilities was the lowest, with almost the entire group (94.1%) denying the possibility of prevention. There is a significant correlation between the opinion on stroke prevention and education level, $p < 0.001$.

Just over half of respondents self-assessed that they had knowledge of stroke risk factors, while the other half (46.7%) found the term unfamiliar. In a multiple-choice question, respondents indicated which ischemic stroke risk factors they knew and considered significant in stroke prevention. The majority of respondents identified alcoholism (96.2%), smoking (94.3%), and an unhealthy diet (81.9%) as significant risk factors. Fewest respondents identified oral hormonal contraception, hormone replacement therapy (1.9%), and hyperhomocysteinemia (7.6%) (Figure 1). Women significantly more often (86.3%) than men (77.8%) identified an unhealthy diet as a risk factor, while men significantly more often than women identified hypertension (m. 88.9%, f. 72.5%), stress (m. 85.2%, f. 66.7%), and dyslipidemia (m. 38.9%, f. 25.5%). There is a significant correlation between the identified ischemic stroke risk factors and gender, $p = 0.023$. Respondents over 80 years old significantly less frequently than younger respondents identified an unhealthy diet (53.3%), hypertension (53.3%), stress (46.7%), atherosclerosis (26.7%), or dyslipidemia (6.7%) as risk factors, but they identified smoking (100%)

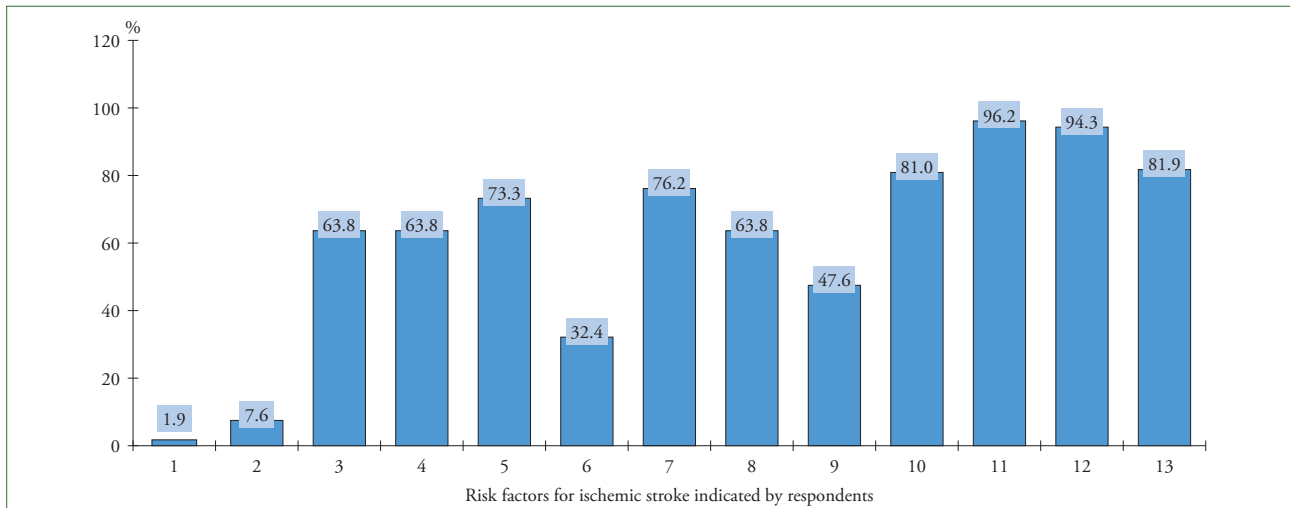


Figure 1. Risk factors for ischemic stroke indicated by respondents

1 — Oral contraception, hormonal replacement therapy; 2 — Hiperhomocysteinemia; 3 — Atherosclerosis; 4 — Low physical activity; 5 — Obesity; 6 — Dyslipidemia; 7 — Stress; 8 — Diabetes; 9 — Heart diseases; 10 — Hypertension; 11 — Alcoholism; 12 — Smoking tobacco; 13 — Unhealthy diet

significantly more frequently. Respondents aged 41–60 and 61–70 significantly more often than other age groups identified heart disease (41–60 81.8%, 61–70 67.6%) and obesity (41–60 90.9%, 61–70 88.2%) as risk factors. There is a significant correlation between the identified ischemic stroke risk factors and age, $p < 0.001$.

Respondents with primary education significantly less frequently than those with vocational and secondary education selected risk factors such as atherosclerosis (35.3%), obesity (58.8%), dyslipidemia (11.8%), stress (52.9%), diabetes (35.3%), heart disease (17.6%), and hypertension (58.8%). Respondents with primary education more frequently than others selected smoking (100%) and alcoholism (100%) as risk factors. There is a significant correlation between the identified ischemic stroke risk factors and education level, $p = 0.004$.

Rural residents more frequently selected risk factors such as smoking (94.7%), stress (78.9%), and obesity (73.7%) than residents of small towns, while residents of small towns more frequently selected the remaining 8 risk factors. The observed differences, although noticeable, are not statistically significant. There is no significant correlation between the identified ischemic stroke risk factors and place of residence, $p = 0.057$.

The largest number of respondents (21.9%) identified eight ischemic stroke risk factors, while the smallest identified only two (1.9%) or three (1.9%) factors. No one identified all 13 risk factors, while 4.8% of respondents identified 12 risk factors. The number of identified risk factors varied significantly, $p = 0.001$.

Respondents were asked about their knowledge of normal blood pressure values. The majority of respondents (51.4%) reported not knowing these values. Among those who claimed to know, 80.4% knew normal systolic blood pressure values, while 58.8% knew normal diastolic blood pressure values. Among respondents who claimed

to know normal blood pressure values, 30.5% measured their blood pressure several times a week, while 8.6% measured it several times a day and 12.4% did so sporadically or not at all.

53.3% of respondents monitored their blood glucose level, unfortunately, this group consisted of respondents with diabetes. None of the respondents without diabetes monitored their blood glucose level. The obtained test result is statistically significant, $p < 0.001$. 43.8% of respondents declared knowledge of the normal fasting blood glucose level. The knowledge of the respondents was verified, only 63.0% of respondents who claimed to know the normal fasting blood glucose level provided correct values. There is a significant correlation between knowledge of normal fasting blood glucose values and self-assessment of knowledge of normal fasting blood glucose values, $p < 0.001$.

78.1% of respondents declared knowledge of their weight and height, conversely, 79% of respondents declared lack of knowledge of BMI, its calculation method, and normal values. A staggering 98.1% did not know their BMI.

29.5% of respondents abstain from alcohol altogether or drink sporadically, 40.9% of respondents consume alcohol at least a couple of times a month, including 1.9% of respondents who drink alcohol every day. 41% of respondents declared smoking.

Discussion

One form of combating ischemic stroke is implementing prevention within society. Our own study revealed that knowledge about preventing stroke among respondents is low, as less than half (44.8%) of the 105 respondents believed that stroke can be prevented, while

the other half (55.2%) believed prevention is not possible. Similar results were obtained regarding knowledge of ischemic stroke risk factors, with only 53.3% of individuals declaring knowledge on this topic. Rosińczuk et al. obtained very similar results, where only 59% of men and 55% of women had knowledge about preventing strokes [7]. In our study, respondents most frequently identified alcoholism (96.2%), smoking (94.3%), and an unhealthy diet (81.9%) as significant risk factors for ischemic stroke, while oral hormonal contraception (1.9%) and hyperhomocysteinemia (7.6%) were identified least frequently. In the study by Rosińczuk et al., the most commonly mentioned stroke prevention methods were stress avoidance, maintaining normal blood pressure, and proper nutrition [7], while in Cieślak's study, the most commonly mentioned risk factors were an unhealthy diet (76.7%), smoking (75%), alcohol (73.3%), and obesity (73.3%), with diabetes being the least mentioned (6.7%) [13]. Other studies by Chmielecki and Stępnik found that the most commonly mentioned risk factors by respondents from Uniejów and its vicinity were hypertension, stress, and obesity [8]. In our study, no one identified all 13 risk factors, only 4.8% identified 12, and the largest number of individuals (21.9%) identified 8 risk factors. In Rosińczuk's study, respondents showed lower knowledge of risk factors, with approximately 25% identifying one stroke prevention method, 9% of women and 6% of men identifying three methods, and only 11% identifying more than three [7]. There was a significant correlation between the number of mentioned ischemic stroke risk factors and age, with younger individuals mentioning more risk factors than older individuals, and education, with individuals with higher education more frequently mentioning more risk factors than those with lower education, but there was no significant correlation based on gender, place of residence, or marital status. Cieślak's study arrived at different conclusions, with the highest knowledge of stroke being among men, individuals over 60, widows/widowers, and those with vocational education [13]. In our study, 73.4% of respondents measured their blood pressure once a week or more, while 12.4% measured it sporadically or not at all. Similar results were obtained by Rosińczuk et al., where 79% of women and 70% of men measured their blood pressure once a week or more, and 19% of men and 10% of women measured it occasionally [7]. 53.3% of individuals monitored their blood glucose level. Similar results were obtained by Rosińczuk et al., where blood glucose measurements were conducted by 48% of women and 46% of men [7]. Knowledge of normal blood pressure values was also assessed. Approximately half of the respondents (48.6%) declared knowledge of normal blood pressure values, with 80.4% of those individuals knowing normal systolic blood pressure values and only 58.8% knowing normal diastolic

blood pressure values. Rosińczuk's studies yielded better results, with 76% of respondents stating they knew normal blood pressure values [7]. 41% of respondents used tobacco products. In studies conducted by Rosińczuk, the percentage of individuals addicted to nicotine was higher, with 58% of stroke survivors and 52% of individuals who had not previously had a stroke being addicted to nicotine [14], and in a later study by Rosińczuk, the percentage was also high, with 35% of men and 18% of women being addicted to nicotine [15].

Conclusions

1. Patients after a stroke do not possess sufficient knowledge about the risk factors for developing ischemic stroke. None of the respondents identified all mentioned factors.
2. Sociodemographic factors such as age and education influence the level of knowledge among patients after a stroke regarding the risk factors for ischemic stroke. However, factors such as gender, marital status, and place of residence do not affect the knowledge level of the surveyed patients.
3. Patients have low self-awareness of their health, which may result in a lack of control over their health and potentially lead to ischemic stroke in the future for these patients.

Implications for Nursing Practice

Given the continued high number of ischemic strokes occurring in Poland and worldwide, there should be a strong emphasis on prevention, including secondary prevention, and the elimination or mitigation of risk factors for ischemic stroke. It is necessary to implement educational programs on stroke awareness and health promotion among the population, which will translate into lower incidence rates or reduce the adverse effects post-illness. This presents an opportunity for nursing staff to enhance knowledge and awareness about their own health among patients after a stroke.

Effective education for patients and their families caring for individuals with ischemic stroke must include accurate knowledge for providing proper care. This information should be conveyed to patients and families in an understandable manner, taking into account the information and skills they already possess. Understanding prevention methods regarding risk factors for the disease is also crucial.

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