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## The problem of stroke in the representation of residents

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### ABSTRACT

**Background.** Acute cerebrovascular accident is the leading cause of disability and disability.

**Materials and methods.** the article presents an analysis of testing the initial and control knowledge of 785 residents of various specialities of the first year of study at Bashkir State Medical University before and after passing the Stroke classes from March to April 2023 of the Department of Neurology at the Bashkir State Medical University.

**Results.** a quantitative and qualitative analysis of respondents' responses showed that residents are poorly aware of the risk factors for stroke, the strategy of primary and secondary prevention of stroke, the first signs of stroke, and first aid for stroke. After passing the Stroke classes, the results of residents improved significantly.

**Conclusions.** Thus, the results of the study indicate the need for educational programs on Acute cerebral circulation disorder for residents of all specialities.

**Keywords:** Stroke, risk factors, prevention, reperfusion.

### INTRODUCTION

In the Republic of Bashkortostan in 2022, the incidence of the population for cerebrovascular diseases amounted to 475,8 per 100,000 population. Acute stroke is the leading cause of disability and mortality [1,2,3,4].

In 2004, WHO declared stroke a global epidemic threatening the life and health of the world's population. According to WHO estimates, about 6 million cases of cerebral stroke are recorded annually in the world, and one in four of them is fatal. The socio-economic consequences of acute stroke are extremely high. According to

the National Stroke Register, 31% of patients after a stroke need outside help to take care of themselves, and 20% cannot walk on their own [5].

The mortality rate with stroke in the Russian Federation in 2022 amounted to 36,9%, and for 3 months of 2023 – 37,9%.

Disability due to stroke ranks first among all causes of primary disability and occurs in 56-81% of patients. Of these, only 16% fully recover, but 50% have recurrent strokes in the next 5 years of life.

Also in the modern world, there is a tendency to increase the frequency of strokes among young people.

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Over the past few years, the third part of the total number of patients with stroke has been made up of young people [6].

Diagnosis, treatment, rehabilitation and secondary prevention of stroke require large public expenditures. In Russia (2007), the cost of treatment for one stroke patient, including inpatient treatment, medical and social rehabilitation and secondary prevention, amounted to 127 thousand rubles per year. To reduce the morbidity, disability and mortality of stroke, every specialist needs to know the measures of prevention, first aid and specific therapy for stroke [7,8].

Due to the significant relevance of cardiovascular pathology, this work was carried out.

Purpose of the study: to assess the level of awareness of stroke among residents in order to improve the effectiveness of preventive and medical care for patients with cardiovascular diseases.

## MATERIALS AND METHODS

Testing was carried out on 785 residents of various specialities of the first year of study at the Bashkir State Medical University before and after undergoing the Stroke classes in the period from March to April 2023 at the Department of Neurology of the Institute of Postgraduate Education of the Federal State Budgetary Educational Institution of Higher Education «Bashkir State Medical University» of the Ministry of Health of Russia. Testing was carried out on the first and last days of the Stroke classes and was aimed at identifying residents' awareness of the procedure for providing care to patients with stroke. Tests included residents' awareness of stroke risk factors, early signs of stroke, prehospital first aid, specific reperfusion therapy for ischemic stroke, and stroke prevention.

Statistical processing was carried out using SPSS version 26. To check the normality of distribution, the Kolmogorov-Smirnov tests were used. Statistically significant differences between groups were assessed using Student's t-test and one-way analysis of variance; in the case of a non-normal distribution, the Kruskal-Wallis and Mann-Whitney tests were used. Results were considered statistically significant at  $p < 0,05$ .

## RESULTS

When testing baseline knowledge of generally accepted modifiable risk factors for stroke, residents chose the following incorrect responses: history of stroke (23,4%), lower extremity vein thrombosis (14,7%), rheumatoid arthritis (10,5%), anaemia (17,5%) and female gender (31%).

The total number of correct responses by stroke risk factors at the beginning of the Stroke classes was 160 (20,4%) residents, and after passing the Stroke classes - 702 (94,5%),  $p < 0,001$ . The figures improved by 74,1%.

According to the results of initial testing, 256 (32,6%) residents offered aspirin as first aid for acute stroke, 131 (16,7%) residents offered piracetam and Cavinton, and 551 (70,2%) offered to reduce blood pressure to standard values. At the prehospital stage, 47(6%) residents chose nitrates as antihypertensive drugs, 33(4,2%) - furosemide, 56 (7,7%) - nifedipine. Cerebrolysin, dexamethasone, and eufillin, which are not included in the standards of stroke care, were also indicated. 233(29,8%) residents had the correct answers before the Stroke classes on the choice of antihypertensive drugs at the prehospital stage and after the Stroke classes - 755 (96,2%), which is 66,4% more,  $p = 0,002$ .

The first signs of stroke (FAST test) were aware of 549(70%) residents at baseline and 773 (98,7%) in the control test. The indicator increased by 28,7%,  $p < 0,05$ .

At baseline, 626 (79,8%) residents correctly answered the question of hospitalization of a patient with a stroke in a specialized department, bypassing the admission rest, in the final test - 745 (94,9%). The difference was 15,1%,  $p < 0,05$ .

The main difficulties raised questions about reperfusion therapy for ischemic stroke. When asked about the specific treatment of ischemic stroke, only 75 (9,6%) of 785 residents answered correctly, choosing the drug alteplase. Many residents (77,4%) chose drugs such as urokinase and streptokinase. After completing the Stroke classes, in the final test, they answered correctly - 758 (96,6%). The results of the final control increased by 87%,  $p < 0,001$ .

337 (42,9%) residents incorrectly answered questions regarding stroke prevention, believing that surgical interventions (stenting, endarterectomy), blood pressure control, physical activity, diet, and lipid profile control - are not primary stroke prevention.

Before the Stroke classes, the accuracy of the responses was 448 (57,1%), and after the cycle, 718 (91,5%) answered correctly, which is 48,6% more,  $p < 0,001$ .

Thus, the baseline responses in 78.9% of residents were «satisfactory», and in the final tests, 92.6% of residents responded to «excellent»,  $p < 0,05$ .

Figure 1 shows the percentages of correct answers in the initial and final tests.

From the data given, it can be seen that after the Stroke classes, the residents improved their knowledge, which confirmed the control testing.

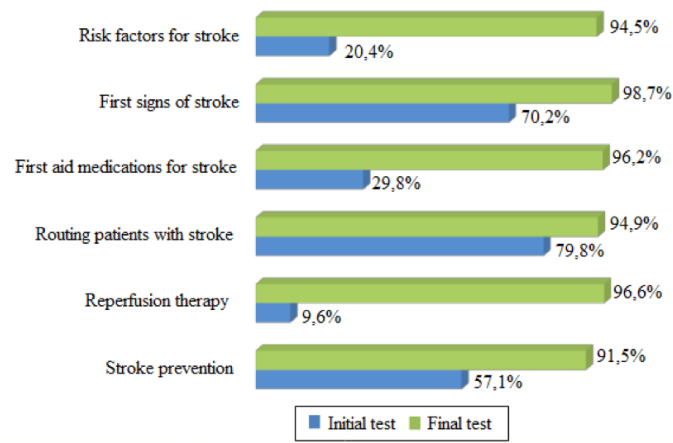


Fig. 1. Results of resident testing

## CONCLUSION

Quantitative and qualitative analysis of respondents' responses showed that residents are poorly informed about risk factors for stroke, the first signs of stroke and strategies for primary and secondary prevention of stroke. The results of the study indicate the need for educational programs on strokes for residents of all specialties. The greatest difficulties in residents raised questions about risk factors, reperfusion therapy and stroke prevention. The general questions about the first signs of stroke and patient routing were answered correctly by a larger number of residents both before the Stroke classes and after. The active introduction of such educational programs will increase the effectiveness of preventive and medical care for patients with stroke, and increase the life expectancy of the population, while reducing budget costs.

**Conflict of interest:** the authors declare that there is no conflict of interest.

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The study was approved by the local ethics committee (protocol №4).

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## INSULT MUAMMOSI ORDINATORLARNI NIGOHIDA

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### ABSTRAKT

**Dolzarbligi:** insultlar mehnat qobiliyatini yo'qotish va nogironlashtirishning etakchi sababi hisoblanadi.

**Material va metodlar:** maqolada Boshqir davlat tibbiyot universitetining 2023 yil mart – aprel oylarida Boshqir davlat tibbiyot universitetining nevrologiya kafedrasida insult bo'yicha cikldan o'tganga qadar va o'tgandan so'ng 785 turli mutaxassislik ordinatorlarining asosiy va nazoriy bilimizni test tahisidan taqdirlangan.

**Natijalar:** respondentlarning javoblarini sonli va sifatli tahlil qilish, ordinatorlar insultning xavf omillari, insultning dastlabki va ikkilamchi profilaktikasi strategiyasi, insultning birinchi belgilari, insultda birinchi yordam ko'rsatish to'g'risida yaqindan xabardor ekanligini ko'rdi. Insult bo'yicha cikl o'tgandan so'ng ordinatorlar natijalari sezilarli darajada yaxshilandi.

**Xulosalar:** shunday qilib, o'tkazilgan tadqiqot natijalari barcha mutaxassisliklar ordinatorlari uchun ta'lim dasturlari zarurligini ko'rsatadi.

**Kalit so'zlar:** insult, xavf omillari, profilaktika, reperfuziya.

## ПРОБЛЕМА ИНСУЛЬТА В ПРЕДСТАВЛЕНИИ ОРДИНАТОРОВ

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### АБСТРАКТ

**Актуальность:** острые нарушения мозгового кровообращения являются ведущей причиной потери трудоспособности и инвалидизации.

**Материалы и методы:** в статье представлен анализ тестирования исходных и контрольных знаний 785 ординаторов различных специальностей первого года обучения Башкирского государственного медицинского университета до и после прохождения цикла ОНМК в период с марта по апрель 2023 года на кафедре неврологии ИДПО Башкирского государственного медицинского университета.

**Результаты:** количественный и качественный анализ ответов респондентов показал, что ординаторы плохо осведомлены о факторах риска инсульта, стратегии первичной и вторичной профилактики инсульта, о первых признаках инсульта, оказания первой помощи при инсульте. После прохождения цикла ОНМК результаты ординаторов значительно улучшились.

**Выводы:** таким образом, результаты проведенного исследования говорят о необходимости образовательных программ по ОНМК для ординаторов всех специальностей.

**Ключевые слова:** инсульт, факторы риска, профилактика, реперфузия.