

PREVENTION OF INSULT IN SCREENING WITH STATIONARY PHYSICIANS

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Abstract. *The results of the conducted screening to study the risk factors of cerebrovascular diseases and stroke are presented. A special questionnaire was used to determine the degree of risk of development, which included the Fedin ambulatory scale, Mini KOH test, as well as blood cholesterol and sugar, blood pressure, body mass index, and carotid auscultation. Low risk of CVD and stroke was found in 48%, intermediate risk in 36%, and high risk in 16% of the subjects.*

Keywords: *CVD, stroke, risk factors, screening.*

Cerebrovascular diseases (CVD) are the most important medical and social problem of modern neurology, as they have the highest morbidity, mortality and disability rates in almost all countries of the world. According to studies, about 5 million people die annually from cerebrovascular diseases (CVD) [4]. In Uzbekistan, more than 60 thousand cases of stroke (acute cerebral circulation disorder) are registered annually. At the same time, the disability rate after stroke is 83.8%, and the percentage of hospital lethality is 17.3%. The modern concept of risk factors for the development of the disease includes a set of various biochemical, clinical, behavioral and other properties characteristic of a certain person or a certain population. In addition, risk factors also include external influences-indicators that indicate an increased risk of developing specific pathologies [1-3]. The aetiology of CVD is extremely complex and involves complex interactions between numerous factors. According to WHO, more than 300 risk factors associated with stroke have been identified, which are summarized into four categories:

- major modifiable risk factors (high blood pressure, atherosclerosis, smoking, hypodynamia, obesity, unhealthy diet, diabetes);
- other modifiable factors (social status, mental disorders, emotional stress, alcohol abuse, certain medications);
- non-modifiable risk factors (age, heredity, ethnicity, gender);
- "new" risk factors (hyperhomocysteinaemia, inflammation, abnormal blood clotting).

A characteristic feature to date has been a significant "rejuvenation" of arterial hypertension (AH) and atherosclerosis. Manifestation of diseases of atherosclerotic genesis has become frequent even at 30-40 years of age [5]. Of no less pathogenetic importance is the state of chronic psycho-emotional stress characteristic of significant categories of the population, which, in combination with nutritional disorders and disordered lifestyle, as well as adverse environmental factors, leads to the early development of changes typical of brain aging (weakening of protein biosynthesis in brain neurons, impaired permeability of cell membranes, destabilization of neurotransmitter systems, etc.) [6]. [6]. The importance of identifying and correcting modifiable risk factors is difficult to overestimate. Information about non-modifiable factors is also extremely significant, because it allows us to identify individuals in the population with an increased probability of cerebrovascular diseases and direct our efforts to their active prevention.

Objective of the study. To study the risk factors for CVD and stroke among physicians through screening.

Material and methods of the study: A one-stage epidemiological study - continuous screening among physicians (men and women from 29-80 years old) was carried out. As a result of screening a cohort of 64 people was formed, including 17 men (27%) and 47 women (73%). By age decades (29-39, 40-49, 50-59,60-69,70-79,80 and older), the examined men and women were relatively evenly distributed (Table 1). During the examination, in addition to general clinical and neurological methods of assessment of the patients' condition, we used the outpatient scale of CIM of A.I. Fedin. The outpatient CIM scale of A.I. Fedin (2016) is subdivided into subscales: "general cerebral and asthenic syndromes", "cranial nerves", "motor system (in the absence of limb paresis)", "speech and other cognitive functions", "affective disorders", which allows to evaluate each of these syndromes in points and make a general assessment of the severity of neurological disorders.

For screening assessment of the level of cognitive functions, the Mini-COG test (screening questionnaire for cognitive impairment) was used. It consists of memorising 3 items and a clock drawing test. If the score is less than 3, dementia is suspected. However, many patients with clinically significant cognitive impairment score more than two points. Therefore, for greater sensitivity of the test, it is recommended to consider a score of less than 4 as indicating the need for more in-depth examination [7].

Statistical analysis of the data was performed using STATISTICA 8.0 software. Data were analyzed in the total cohort (29-80 years) and in groups divided by age (29-39, 40-49, 50-59,60-69,70-79, 80 and older) and sex. Arithmetic mean and standard deviation were used to describe the age of the population and the number of risk factors in the groups. Differences were considered significant at $p < 0.05$.

Results and Discussion: The mean age of the study population was 50.5 ± 11.2 years. Thus, this population sample was mainly represented by working individuals.

Table 1. Distribution of patients by sex and age.

Age, years	All patients (%)	Men(%)	Women(%)
29-39 Years	7 (10)	1 (1,5)	6 (8,5)
40-49 Years	22 (34)	7 (11)	15 (23)
50-59 Years	28 (44)	8 (13)	20 (31)
60-69 Years	3 (5)	1 (1,5)	2 (3,5)
70-79 Years	3 (5)	-	3 (5)
Over 80 years old	1 (2)	-	1 (2)
Total	64 (100)	17 (27)	47 (73)

Screening provides, on the basis of the results obtained, the determination of the degree of risk of developing CVD (Table 2).

1.Low risk assessment criteria.

1.Presence of mildly symptomatic cerebral complaints on the Fedin ambulatory scale.2. Mild (or no) cognitive function on the Mini-COG test. 3.Slight carotid pulsation. 4. Slightly elevated blood cholesterol levels. 5.Slightly elevated blood sugar level. 6.Slightly increased blood pressure. 7.Slight change in body weight.

2.Medium risk assessment criteria.

1.Presence of moderately severe symptomatology of cerebral complaints according to Fedin ambulatory scale.2. Moderately severe cognitive functions according to Mini-COG test. 3.Moderate decrease in carotid pulsation. 4.Moderately elevated blood cholesterol level. 5. Moderately elevated blood sugar level. 6.Moderate increase in blood pressure. 7.Moderate change in body weight.

3.High risk criteria.

1.Presence of marked symptomatology of cerebral complaints according to the Fedin ambulatory scale. 2.Expressed cognitive functions according to the Mini-COG test. 3.A marked decrease in carotid pulsation. 4. Elevated blood cholesterol levels. 5. Elevated blood sugar levels. 6.A marked increase in blood pressure. 7.A marked change in body weight.

Table 2. Determination of the risk of developing CVD.

	Examination method	LOW	Medium	High
1	Study of patients' complaints according to Fedin A.I. outpatient scale.	Less than 10 points (weakly expressed symptomatology)	10-20 points. (Moderately expressed symptomatology)	More than 20 points. (Expressed symptomatology.)
2	Study of cognitive functions by Mini KOH test	3 points (1 point). Normal.	2 points (2 points) Moderate cognitive decline.	0-1 point (3 points) Severe cognitive decline.
3	Auscultation of the carotid artery in the area of its bifurcation in the neck.	1 point Decrease in pulsation is insignificant	2 points Moderate decrease in pulsation	3 points Severe decrease in pulsation
4	Determination of blood cholesterol by express method.	5,2-5,5 (1 point)	5,5-7 (2 points)	Above 7 (3 points)
5	Determination of blood sugar by rapid method.	5-6 (1 point)	6-7 (2 points)	Above 7 (points)
6	Measuring blood pressure.	130-140 (1 point)	140-160 (2 points)	160 и выше (3 points)
7	Measurement of body mass index. (BMI)	25-29 (1 point)	30-35 (2 points)	35-40 (3 points)
8	Deriving the degree of risk of developing Cerebrovascular Disease.	16 points	22-32 points	38 points

The results of risk factor assessment taking into account gender differences are shown in Table 3.

The data presented in Table 3 show that the changes in Fedin's outpatient scale scores differed significantly between men and women. 3 data shows that changes in Fedin's outpatient scale indices differed significantly between men and women.

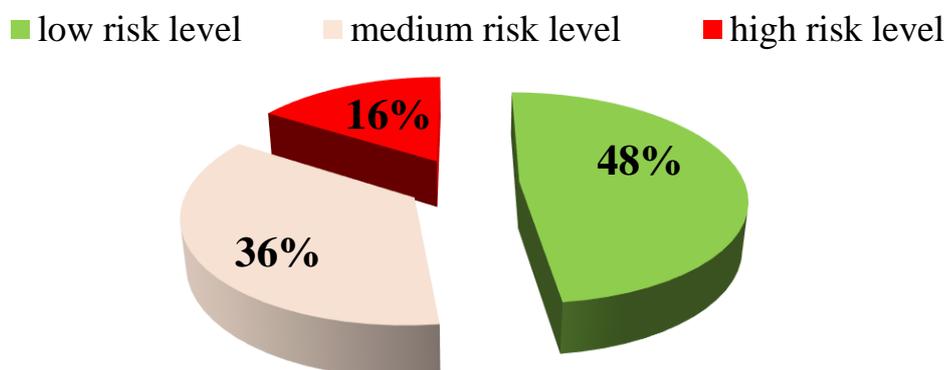
Table 3: Assessment of CVD risk factors among physicians.

	Evaluation criteria	All patients	Men	Women
1	Study of patients' complaints according to Fedin A.I. outpatient scale.	7,8±5,6	6,6±4,8	8,2±5,9
2	Study of cognitive functions by Mini KOH test	1,6±0,7	1,6±0,6	1,6±0,7
3	Auscultation of the carotid artery in the area of its bifurcation in the neck.	1,1±0,9	1,2±1	1,1±0,8
4	Determination of blood cholesterol by express method.	1,4±0,7	1,2±0,7	1,5±0,7
5	Determination of blood sugar by rapid method.	1,4±0,8	2±0,9	1,2±0,6
6	Measuring blood pressure.	1,1±0,7	1,1±0,7	1,1±0,7
7	Measurement of body mass index. (BMI)	1,3±0,6	1,4±0,7	1,2±0,5

Among men this index was 6.6±4.8, and among women - 8.2±5.9. The mean Mini KOH test score among men was 1.2±1 and among women was 1.6±0.7. Auscultation of the carotid artery in the area of its bifurcation in the neck among men was 1.2±1 point, among women was 1.1±0.8 points. Blood cholesterol in both gender groups was 5.5±0.9, which was 1.4±0.7 points. Blood sugar in both male and female gender groups averaged 5.6±1 which was 1.4±0.8 points. Blood pressure in men and in women was 1.1±0.7 which was 1.1±0.7 points. BMI in men was 1.4±0.7 points and in women 1.2±0.5 points.

It should be noted that the screening among doctors showed that the risk of cerebrovascular diseases is also high among doctors, i.e. the part of the population that belongs to the healthy contingent. The results of the screening among doctors were as follows: low risk in 48% of those present, medium risk in 36%, high risk in 16% of those examined (Fig.1).

Figure 1: Risk level of cerebrovascular diseases.



Thus, persons with a high risk of CVD will be referred for further examination: ultrasound Dopplerography, EchoCG, vascular surgeon consultation, angioneurologist, with assessment of the possibility of surgical intervention.

Conclusions: Thus, despite the active work of medical and social services, the problem of cerebrovascular diseases remains relevant both in our country and abroad. A wide prevalence of risk factors for cardiovascular and cerebrovascular diseases was observed in the able-bodied population aged 39-59 years. Among men and women statistically significant were differences in the values of the Fedin's CHEM scale. The dynamics of cognitive tests did not reveal statistically significant differences between these groups ($p>0.05$). It should be noted that the screening among doctors showed that low risk was detected in 48% of those present, average - in 36%, high - in 16% of those examined. The obtained data indicate the need to continue constant active information and educational work among the whole population and to improve the system of detection and dispensary monitoring of persons with risk factors. At the same time, special attention should be paid to the category of middle working age, in whom the first significant jump in the prevalence of risk factors for CVD occurs at the age of 50. The use of a special questionnaire is optimal for solving the set tasks, as it has a number of undoubted advantages in comparison with other modern scales.

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