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ANALYSIS OF RISK FACTORS FOR SEVERE STROKES

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Abstract

This article discusses one of the pressing issues in neurology - the analysis of risk factors for severe strokes. In recent years, the incidence of acute cerebrovascular accidents has tended to increase. Therefore, the analysis of their risk factors, mechanisms of development and a review of modern treatment algorithms increase the evidence and effectiveness of diagnostic and preventive measures.

Keywords: Stroke, risk factors, acute cerebrovascular accident.

Introduction

Stroke is a global epidemic that threatens the lives and health of people around the world. According to expert estimates from the World Health Organization, stroke is the second leading cause of death in the world.

In recent years, the incidence of stroke has become 2-3 times higher than the incidence of myocardial infarction, 27-32% of patients die within the first year from the development of stroke.

According to statistics, more than half of patients (52-63%) die in the acute stage of the disease (the first 28 days), and about 70% of patients who have had their first stroke die within five years. About a quarter of strokes (25-32%) are recurrent [1,2].

Along with high mortality, the consequences of strokes are also socially significant - the development of persistent loss of ability to work and disability, repeated cerebrovascular accidents, vascular dementia [3].

All this determines the relevance of the development and implementation of preventive measures to prevent cardiovascular diseases. According to statistics, the probability of stroke is not directly related to professional activity: 30% of stroke survivors were engaged in mental activity before the attack, 31-33% - in physical labor, and 27-29% combined intellectual and physical work.

On the contrary, the age dependence of stroke incidence is clearly visible - after 55 years, its risk increases significantly and doubles every subsequent ten years [4, 5].

Risk factors are various clinical, biochemical, behavioral and other characteristics indicating an increased likelihood of developing the disease [6].

The most important modifiable (correctable) risk factors that increase the risk of stroke are: arterial hypertension, heart disease, including atrial fibrillation, lipid metabolism disorders, diabetes mellitus, pathology of the main (main) arteries of the head, blood clotting disorders. Non-modifiable risk factors (not amenable to correction) are used to assess and predict



individual, group and population risk of developing chronic non-communicable diseases. The main non-modifiable risk factors include gender, age, heredity, and ethnicity.

There are also lifestyle-related factors: smoking, alcohol abuse, poor nutrition, excess body weight, low physical activity, prolonged psycho-emotional stress or acute stress [8].

Objective of the Study:

Analysis and comprehensive assessment of factors influencing the risk of development and severity of the clinical course of acute cerebrovascular accident.

Materials and Methods

70 case histories of patients with a diagnosis of "Acute cerebrovascular accident" who were treated in the neurology department of the Gulistan medical cluster were studied using the selective analysis method. The age of the patients, existing risk factors for stroke development, duration of transportation, type of stroke, state of blood flow in the cerebral arteries according to ultrasound Dopplerography (USDG) and transcranial duplex scanning (TCDS), size and localization of lesions in the brain according to computed tomography (CT) were taken into account. The severity of neurological deficit was assessed using the Rivermead, Rankin and NIHSS scales.

Results:

The average age of the subjects was 64.8 ± 14 years. Patients of retirement and working age accounted for 50% each.

The average age of working-age patients was 49 ± 10 (median - 52) years, patients of retirement age - 73 ± 7.3 (73.5) years ($p < 0.001$).

In the structure of stroke among the subjects, ischemic strokes prevailed by 3.8 times ($p < 0.01$).

Among the risk factors for the development of strokes, arterial hypertension (AH) was most often noted - in 89% of patients, dyslipidemia (DLP) - in 57% of cases ($p < 0.05$).

The average transportation time for residents of Gulistan was 63 minutes; patients delivered from the adjacent territories of the Syrdarya region - 116 minutes ($p = 0.017$). The duration of the disease during hospitalization averaged 5.8 hours. 57% of patients had signs of stenosing atherosclerosis of the BCA.

The median values of the velocity flows were: 54 cm/s in the anterior cerebral arteries, 87.5 cm/s in the middle cerebral arteries, 40 cm/s in the posterior cerebral arteries; 46.5 cm/s in the vertebral arteries.

47% of the subjects showed an increase in the maximum systolic flow velocity in the middle cerebral artery, indicating the presence of stenosis in the artery location zone.

The average size of the lesion in the brain after a stroke was 35 ± 20 (median, 25 and 75 percentiles - 30; 14; 45) mm. 50% of the examined patients had lesions of the brain tissue up to 30 mm in size and lesions exceeding 30 mm in diameter; the average lesions were 16 ± 8 (16.5; 10; 25) mm and 54 ± 21 (45; 40; 60) mm ($p < 0.001$), respectively.

In 60% of cases, lesions were localized in the lobes of the cerebral hemispheres, mainly in the parietal region on the right; in 23% - in the subcortical structures; in 17%, lesions of various mixed localizations were detected ($p < 0.05$).



When assessing the neurological status, hemiparesis was most often detected - in 76% of cases. The volume of neurological deficit according to the NIHSS scale averaged $7.5 \pm 4.1(6)$ points, however, in patients of the older age group, in patients with a brain lesion over 30 mm according to CT and signs of stenosing atherosclerosis on ultrasound Doppler imaging, the indicators were significantly worse and amounted to 9.7 ± 4.8 (8.6) points ($p=0.048$) and 11.6 ± 6.4 (10) points ($p=0.007$), respectively.

Conclusions:

In the study group, such factors as the retirement age of patients, the presence of hypertension and dyslipidemia, long transportation to a medical facility - about 2 hours, the presence of stenotic atherosclerosis of the BCA and cerebral arteries, the size of the lesion of the brain tissue during stroke exceeding 30 mm, had an adverse effect on the course and prognosis of the disease.

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