

# POSSIBILITIES OF ORGANIZING PHARMACEUTICAL CARE FOR THE PRIMARY PREVENTION OF ISCHEMIC STROKE IN HEART RHYTHM DISORDERS

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**Abstract.** *Cerebral circulatory failure associated with thromboembolism is called ischemic stroke. Blockage of an artery by a blood clot cuts off blood flow to the brain. Without nutrition, tissue softens, cell necrosis occurs, which ends with organ infarction.*

**Keywords:** *Causes of ischemic stroke, hemorrhagic stroke, Atherosclerosis of the brain, Ischemic stroke of the brain, Thrombotic stroke.*

Pathological changes in arteries occur gradually. The impetus for apoplexy is the characteristics of the body or adverse external conditions.

## Internal factors

- Vascular thrombosis is the main cause of cerebral ischemia and infarction. Risk groups include patients with diseases that cause complications in Arteries and veins:
- High blood pressure;
- Cerebral atherosclerosis;
- Atrial fibrillation, which provokes the appearance of cardiogenic embolism;
- High prothrombin index;
- Obstruction of cephalic vessels;
- Diabetes mellitus, obesity.

Warning for women: long-term use of hormonal contraceptives causes hypercoagulation of red blood cells and thrombosis.

Weather-dependent people react to magnetic storms, changes in atmospheric pressure and temperature by changing the biochemical composition of blood and heartbeat. Adverse climatic conditions affect cerebral circulation. According to statistics, the number of strokes increases when the weather changes sharply in spring and winter. A nervous environment at work or at home causes constant stress - the cause of pathological changes in the walls of blood vessels.

## Symptoms

- Common signs for all blood vessels:
- Visual impairment with partial blindness, double vision;
- Speech and comprehension disorders;
- Numbness of limbs, facial paresthesia;
- Dizziness, tinnitus.
- Often worms and headaches are associated with the hemorrhagic type.

The clinical presentation of brain disorders depends on the location of the lesion. Blockage of the anterior cerebral artery is characterized by an abnormal grasping reflex, inability to stand upright, and obsessive repetition of phrases. Obstruction of the posterior artery is expressed in

paralysis of the optic nerve, hemiparesis and loss of coordination of movements. Temporal region infarction leads to depression and lack of logical movement.

### **Classification of blood vessels**

The second most common type of cerebral apoplexy is hemorrhagic stroke, which is caused by bleeding, swelling and tissue death after the rupture of blood vessels. Causes pathology:

- Aneurysm;
- Injuries;
- Hypertension;
- Stress and overexertion.

Thrombotic stroke. It occurs as a result of blocking the vessel with atherosclerotic plaque, the formation of a blood clot. Neurological diseases, which undergo thrombosis of small arteries, manifest themselves in the form of ischemic attacks with precursors of strokes. Lacunar cerebral infarction. Clogging of small vessels in the cerebellum and brainstem results in tissue damage less than 1.5 cm in diameter. Microinfarcts are dangerous because of gradual death of reflexes and dementia. The formation of cerebral lacunae is associated with hypertension and diabetes. Cardioembolic type of ischemia. Thrombosis in the cavities of the heart occurs due to the following factors:

- Valve replacement;
- Atrial arrhythmia;
- Myocardial infarction;
- Rheumatism of the heart valve;
- Endocarditis.

Blood clots break away from the walls of the heart and pass through the bloodstream. Particles reach the brain and settle in the blood vessels, causing neurological diseases. Rheological stroke. It accounts for 9% of all cases. This is explained by changes in blood parameters - increased viscosity, level of platelet aggregation, pathology of blood flow structure.

Typology according to duration of disorders

Transient ischemic attacks with recovery of function after two to twenty days.

Progressive cerebral ischemia with deterioration in the first three days. Generalized stroke with signs of life-threatening cerebral infarction. The acute stage of the disease is the first three days, after which the diagnosis of "ischemic attack" is distinguished. The patient will spend about a month in the intensive care unit to restore the basic functions of the brain. The rehabilitation period lasts from six months to two years.

### **Diagnostics**

An initial stroke test is performed by emergency physicians. The patient shows three main symptoms characteristic of ischemia:

- Asymmetry of the face when trying to smile;
- Inability to hold both arms raised at 90°;
- Unintelligible speech.

Blood pressure measurement and heart electrocardiogram also show characteristic disturbances. An accurate diagnosis is made based on additional examinations: Detailed biochemical blood test. A high risk of stroke is indicated by an increase in the level of cholesterol, C-reactive protein and prothrombin. Computed and magnetic resonance imaging. CT and MRI rule out bleeding and give an idea of the state of the cerebral vessels. Dual learning. It shows the

structure and speed of blood flow, vasoconstriction. Electroencephalography. EEG provides differentiation from lacunar stroke, which is normal. Angiography of cerebral vessels. X-ray examination with a contrast agent detects thrombosis, aneurysm, tumors. Puncture of cerebrospinal fluid. The presence of blood in the analysis supports the diagnosis of hemorrhagic stroke. Drug therapy complements measures to normalize vital functions.

**Anticoagulants.** The effect of drugs is to stop the formation of blood clots. Use only in hospitals, as it is necessary to constantly monitor blood clotting.

Antiplatelet agents. The representative of the class is streptokinase, which prevents platelets from sticking together and forming clots. This group includes clopidogrel and atopaxar, which have different mechanisms of action. If there are contraindications to the use of anticoagulants, it is mandatory to prescribe antiplatelet agents.

Anti-inflammatory therapy. The patient's condition is improved by mannitol drops, which have a diuretic effect. Reopoliglucin reduces blood viscosity and improves red blood cell circulation.

Thrombolysis. It is based on the use of thrombolytics that activate plasminogen, which is the basis of the body's anticoagulant system.

The procedure is included in emergency hospitalization therapy and is prescribed immediately after the diagnosis of stroke.

### **Prevention of stroke**

Early detection of impending cerebral ischemia is low, so prevention of stroke is of great importance.

- Primary prevention
- It is valid for everyone and includes the following activities:
- Scheduled medical examinations;
- Control blood glucose and cholesterol levels;
- Giving up bad habits;
- A healthy lifestyle.

Vigorous physical activity, proper nutrition and rest protect against neurological diseases.

### **Secondary prevention**

According to statistics, in 30% of cases, the stroke is repeated. In addition to primary prevention for at-risk patients, they offer additional options for disease prevention. Antithrombotic therapy with individual selection of drugs. Endarterectomy is the surgical removal of atherosclerotic plaques. Angioplasty and stenting of the carotid artery. Plaque clearance in the vein eliminates thrombosis, the most common cause of ischemia.

### **Life prognosis after ischemic stroke**

An unfavorable scenario develops in 20% of cases - patients die. Irreversibility of processes within a month after cerebral ischemia leads to disability in 60% of patients. The duration of the next period depends on the location and area of the lesion, concomitant diseases and age. A harbinger of the return of disorders is the positive dynamics of the recovery of motor functions within three months. Adherence to secondary prevention and continuous rehabilitation measures prolongs the patient's life by at least 10 years.

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