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Master's thesis

**The role of a nurse  
in providing medical care  
to patients with stroke**

223 – Nursing

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## Introduction

The relevance of research. Currently, the rehabilitation of patients with acute cerebrovascular accident is an important medical and social problem. This is due to the increased frequency of cerebral vascular lesions and its complications. In the United States, more than 795 thousand acute cerebrovascular accidents are registered annually, the incidence of stroke in the United States is 4.5 - 5 cases per 1000 population per year [1].

Currently, stroke is considered as a clinical syndrome of acute vascular brain damage. It is the outcome of various pathological lesions of the circulatory system: blood vessels, heart, blood. The ratio of hemorrhagic and ischemic strokes is 1: 4 - 1: 5 [2].

Mortality from acute cerebrovascular accident in the United States ranks second (21.4%) in the structure of total mortality. The incidence of stroke has increased over the past two decades from 1.3 to 7.7 cases per 1000 adults, especially in large administrative centers. The incidence of stroke increases with age. So, according to world data, the annual incidence rate at the age of 40 - 49 years is 2 cases per 1000, and at the age of 50 to 60 years - 0.9, and over 60 years - 15.4 [1.3].

Disability due to stroke (3.2 per 10,000 population per year) ranks first (40-50%) among pathologies that cause disability. At the moment, in the United States, there are about 1 million people with disabilities with the consequences of acute cerebrovascular accident, and only no more than 20% of stroke survivors return to work. At the same time, the losses of the state from one patient who received a disability amount to \$ 47,000 per year [4]. According to [5], rehabilitation measures contribute to the restoration of lost functions in 47.8% of patients, and in the absence of rehabilitation measures, full self-care is restored only in 20.3%.

Despite the positive results in assessing the quality and effectiveness of rehabilitation treatment for patients who have suffered a stroke, the existing rehabilitation system for such a contingent does not provide all the need for it. The

nursing process in the stage-by-stage rehabilitation of post-stroke patients determines the main directions of measures that contribute to the improvement of their patient's quality of life. This justifies purposeful and systematic work, which is fully calculated to meet the needs and problems of the patient [WHO Regional Office for Europe - March 1996], as well as to change the role of the nurse, taking into account its more rational use, full functioning in modern conditions [6].

In accordance with the above-stated aspects, a working hypothesis was formulated that the use of modern technologies for organizing the nursing process in the rehabilitation of patients with acute cerebrovascular accidents contributes to the early restoration of the functional independence of patients, increases the quality and efficiency of nursing care.

**The aim of our study** is to identify the role of a nurse in the provision of medical care to patients with acute cerebrovascular accident.

To achieve this goal, **the following tasks were solved:**

1. Conduct an analysis of the main problems of stroke patients with whom nursing staff work.
2. Determine the scope of nursing care in the rehabilitation of stroke patients.
3. Scientifically substantiate the most effective forms of nursing care for patients with acute cerebrovascular accident.

**Object of research:** the activities of a nurse of the neurological department. The work consists in assessing the organization of nursing care in neurorehabilitation, systematizing the experience, identifying the main problems of patients with whom nursing staff work during the rehabilitation of patients who have suffered a stroke in order to preserve the quality of life and functional activity of patients.

**Subject of research:** nursing process in the provision of medical care to patients with acute cerebrovascular accident in a neurological hospital.

Research methods:

- information analysis

- analytical,
- observation of the research object,
- comparison.

**Practical significance** - lies in the fact that the main functional and psychological problems of patients with acute cerebrovascular accident, their dynamics when using new technologies of nursing care were studied, the satisfaction of patients with medical (nursing) care was assessed.

Work structure. The work consists of an introduction, 4 chapters, a conclusion, a List of used literature.

## **Chapter 1. Etiology and pathogenesis of acute cerebrovascular accident**

Stroke is an acute violation of blood circulation in the brain with the development of persistent symptoms of damage caused by a heart attack or hemorrhage into the medulla. Transient ischemic attack is a transient violation of cerebral circulation, in which neurological symptoms regress within 24 hours [1,7]. Common stroke risk factors for the disease are arterial hypertension, old age, smoking, overweight, as well as a number of factors that are specific to different types of stroke [8]. The list of diseases and conditions that cause acute cerebrovascular accident is quite extensive. It includes primary and secondary arterial hypertension, cerebral atherosclerosis, arterial hypotension, heart disease (myocardial infarction, endocarditis, valve apparatus lesions, rhythm disturbances), cerebral dysplasia, vascular aneurysms, vasculitis and vasculopathy (angiopathy), blood diseases. Taking drugs with fibrinolytic properties and anticoagulants (Heparin, Aspirin, etc.). The use of oral contraceptives and estrogen therapy in menopausal women leads to an increase in high-density lipids in blood plasma and a decrease in

low-density lipids, while simultaneously activating hemostasis and blood hypercoagulation [9].

Transient ischemic attack. The pathogenesis of a transient ischemic attack is based on reversible local cerebral ischemia (without the formation of a heart attack) as a result of cardiogenic or arterio-arterial embolism. Less often, a transient ischemic attack is caused by hemodynamic circulatory failure in stenoses of large arteries - carotid in the neck or vertebrates [10].

Ischemic stroke. The etiological factors of ischemic stroke are diseases that lead to narrowing of the lumen of cerebral arteries as a result of thrombosis, embolism, stenosis or compression of the vessel [3, 11]. As a result, hypoperfusion develops, manifested by local ischemia of a part of the brain in the basin of the corresponding large or small artery. This leads to necrosis of a portion of the brain tissue with the formation of a cerebral infarction, and is the key point in the pathogenesis of ischemic brain lesions. The cause of 50–55% of ischemic strokes is arterio-arterial embolism or thrombosis due to atherosclerotic lesions of the aortic arch, brachiocephalic arteries or large intracranial arteries [5,12].

Intracerebral hemorrhage. For the development of intracerebral hemorrhage, as a rule, it is necessary to combine arterial hypertension with a lesion of the artery wall, which can lead to rupture of an artery or aneurysm (with subsequent formation of a thrombus), and the development of hemorrhage of the type of hematoma or hemorrhagic impregnation. In 70 - 80% of cases, cerebral hemorrhage occurs due to arterial hypertension [3,13].

Spontaneous subarachnoid hemorrhage in 60–85% of cases is caused by rupture of an arterial aneurysm of the brain with outflow of blood into the subarachnoid space [10, 14].

## **1.1. Classification and clinical picture of acute cerebrovascular accident**

Classification:

-Acute disorders of cerebral circulation

Transient disorders of cerebral circulation

-Strokes

-Transient ischemic attack

-Acute hypertensive encephalopathy

-Ischemic stroke

-Hemorrhagic stroke

-Subarachnoid, intracerebral and combined hemorrhage, subdural and epidural hematomas

-Combined (mixed)

Clinic and complications.

A stroke clinic is characterized by an acute, sudden development (within minutes and hours) of focal neurological symptoms, in accordance with the affected and involved areas of the brain. Also, depending on the nature, localization of the stroke and the degree of its severity, cerebral and meningeal symptoms are observed [10, 13].

A transient ischemic attack is characterized by a sudden development of focal symptomatology, with its complete regression, usually within 5 to 20 minutes from the onset of the attack [15].

As a rule, with ischemic strokes, cerebral symptoms are moderate or absent. With intracranial hemorrhages, cerebral symptoms are expressed (headache in half of patients, vomiting in one third, epileptic seizures in every tenth patient) and often meningeal. Also, cerebral hemorrhage is more characterized by a rapid increase in symptoms with the formation of a gross neurological deficit (paralysis) [12, 15].

Strokes of the cerebral hemispheres (basin of the carotid arteries) are characterized by sudden development [4, 16]:

1. Paralysis (paresis) in the arm and leg on one side of the body (hemiparesis or hemiplegia).
2. Sensory disturbances in the arm and leg on one side of the body.
3. Sudden blindness in one eye.
4. Homonymous visual field defects (ie, in both eyes or in the right or left halves of the visual field).
5. Neuropsychological disorders (aphasia (speech impairment), apraxia (impaired complex, purposeful movements), half-space neglect syndrome, etc.).

Acute cerebrovascular accident in the vertebrobasilar basin is characterized by [13]:

1. Dizziness.
2. Disorders of balance or coordination of movements (ataxia.)
3. Bilateral motor and sensory disorders.
4. Defects in visual fields.
5. Diplopia (double vision).
6. Swallowing disorders.
7. Alternating syndromes (in the form of peripheral lesions of the cranial nerve on the side of the focus and central paralysis or conduction disorders of sensitivity on the opposite side of the body).

Spontaneous subarachnoid hemorrhage is characterized by a sudden, unexplained, intense headache, pronounced meningeal syndrome. Specific treatments for stroke:

Hemorrhagic stroke.

In every second case, the cause of intracerebral nontraumatic hemorrhage is arterial hypertension, about 10-12% is due to cerebral amyloid angiopathy, approximately 10% is due to the intake of anticoagulants, 8% is due to tumors, all

other causes account for about 20%. Pathogenetic intracerebral hemorrhages can develop either as a result of vessel rupture or by diapedesis, usually against the background of previous arterial hypertension [17].

The most common type is ischemic stroke, caused by decreased cerebral blood flow. The clinical picture develops sharply, suddenly, characterized by the appearance of cerebral focal symptoms, meningeal neurological symptoms, paresis, impairments of various forms of sensitivity, depending on the severity of the condition, meningeal symptoms of Kernig and Bekhterev appear [18].

The etiology and pathogenesis of acute cerebrovascular accident is very diverse and is often directly related to the functioning of the cardiovascular system and the absence of its pathologies [16]. Stroke is more often fatal than other diseases; in addition, it is one of the most common causes of disability and permanent loss of working capacity. With a stroke, prevention plays a role almost on a par with treatment, since a person is able, according to many criteria, except perhaps heredity, to take care of himself and prevent many risk factors. Even statistics show that in countries with anti-stroke prevention, the incidence rate is much lower than in others [19].

## **1.2. Diagnostics**

Signs of a stroke:

When the patient develops sudden weakness or loss of sensitivity on the face, arm or leg, especially if it is on one side of the body. If you have sudden visual impairment or blindness in one or both eyes. If you develop difficulty speaking or understanding words and simple sentences. With sudden onset of dizziness, loss of balance, or impaired coordination of movements, especially when combined with other symptoms such as impaired speech, double vision, numbness, or weakness [20].

When the patient suddenly develops a depression of consciousness up to a coma with weakening or absence of movements in the arm and leg of one side of the body. With the development of a sudden, unexplained, intense headache. Most often,

acutely developed focal neurological symptoms are caused by a cerebrovascular pathological process [5]. Additional examinations can confirm the diagnosis and carry out differential diagnostics of types of acute cerebrovascular accident. Reliable diagnosis of acute cerebrovascular accident is possible with the use of neuroimaging methods - CT or MRI of the brain. In general, in the United States, the equipment of hospitals with neuroimaging equipment is extremely low, and the share of modern devices is not high. Emergency CT and MRI are performed in single hospitals. In these conditions, to clarify the diagnosis, methods such as echoencephalography, analysis of cerebrospinal fluid are used, which, when combined with a clinical picture, give up to 20% errors in differentiating the nature of stroke, and in particular cannot be used to determine indications for drug thrombolysis [10].

Diagnostic goals:

1. Confirm the diagnosis of stroke.
2. To differentiate ischemic and hemorrhagic types of stroke, as well as pathogenetic subtypes of ischemic stroke for the initiation of specific pathogenetic therapy at 3-6 hours from the onset of stroke ("therapeutic window").
3. Determine the indications for drug thrombolysis in the first 1-6 hours from the onset of stroke.
4. Determine the affected vascular pool, the size and localization of the focus of brain damage, the severity of cerebral edema, the presence of blood in the ventricles, the severity of the displacement of the median structures of the brain and dislocation syndromes.

Diagnostic methods. History and neurological examination

The presence of stroke risk factors in the patient (arterial hypertension, old age, smoking, hypercholesterolemia), overweight, is an additional argument in favor of the diagnosis of acute cerebrovascular accident, and their absence makes one think about the non-cerebrovascular nature of the process.

Clinical neurological examination of a patient with a stroke aims to differentiate the nature of the stroke on the basis of the identified symptoms, determine the arterial pool and localization of the lesion in the brain, and also suggest the pathogenetic subtype of ischemic stroke. For ischemic strokes, the symptomatology of a lesion of a particular vascular basin or a zone of blood supply of a particular artery is more characteristic (with the exception of infarctions of watershed zones at the junction of vascular basins), while in case of cerebral hemorrhage, the lesion is formed as an “oil spot” and does not have a clearly expressed attachment to the areas of blood supply. In practice, these criteria are often quite difficult to use, differentiation causes difficulties, especially in the case of the development of massive hemorrhage, extensive ischemic brain damage, gross damage to the brain stem or cerebral hemorrhage in the absence of general cerebral symptoms.

Diagnosis of types of stroke on the basis of only the clinical picture gives about 15-20% of errors in differentiation, since there are no signs or syndromes that are absolutely characteristic of different types of stroke. We can only say that depression of consciousness, increasing gross neurological deficit, headache, vomiting, convulsions, meningeal syndrome are much more often observed with cerebral hemorrhage than with ischemic stroke, but headache with cerebral hemorrhage is observed less often than with spontaneous subarachnoid hemorrhage.

The key criterion for diagnosing a transient ischemic attack is the duration of an episode of reversible neurological deficit, which is usually 5 - 20 minutes, less often it is longer.

Nevertheless, according to a number of studies, computed tomography of patients with clinically diagnosed transient ischemic attack in 10 - 15% of cases reveals cerebral infarction, which confirms the need for neuroimaging in such patients.

Neuroimaging techniques (CT, MRI). Computed tomography and magnetic resonance imaging (MRI) of the brain are highly reliable methods for diagnosing strokes. Neuroimaging methods are most often performed for the following diagnostic and differential diagnostic purposes:

1. To distinguish between stroke and other diseases (primarily volumetric processes).
2. To differentiate the ischemic and hemorrhagic nature of stroke (heart attack and cerebral hemorrhage).
3. To clarify the size, localization of stroke, development of hemorrhagic transformation, accumulation of blood in the subarachnoid space, detection of hemorrhage in the ventricles of the brain, the severity of edema, dislocation of the brain.
4. To identify occlusions and stenoses of extra - and intracranial cerebral arteries.
5. Identification of aneurysms and subarachnoid hemorrhages.
6. Diagnosis of specific arteriopathies, such as arterial dissection, fibromuscular dysplasia, mycotic aneurysms in arteritis.
7. Diagnostics of thrombosis of veins and venous sinuses.

Usually, computed tomography is a more affordable method, and has some advantage over MRI performed on devices of previous generations. If modern computed tomography and MRI equipment are used, the diagnostic capabilities of both methods are approximately the same. computed tomography has some advantage in the study of bone structures, better reveals fresh hemorrhage, while MRI is more adequate for assessing the structural pathology of the brain parenchyma and detecting perifocal edema and the development of cerebral impaction [6].

Echoencephalography. EchoES in the first hours from the onset of a stroke to the development of cerebral edema or dislocation syndromes is usually not informative. Nevertheless, in the acute period, signs of displacement of the median

structures of the brain within the framework of a volumetric formation in a tumor, hemorrhage into a tumor, massive hemorrhage into the brain, brain abscess, subdural hematoma can be detected. In general, the information content of the method is very low. Cerebrospinal fluid examination.

The study of cerebrospinal fluid by lumbar puncture in stroke is carried out in the absence of the possibility of computed tomography or MRI to exclude cerebral hemorrhage, subarachnoid hemorrhage, meningitis. Its implementation is possible with the exclusion of a volumetric formation of the brain, which in routine conditions provides echoencephalography, which, however, does not completely exclude the indicated condition. Usually, no more than 3 ml of cerebrospinal fluid is carefully removed with the mandrel not removed from the puncture needle. Cerebrospinal fluid in ischemic strokes is usually normal or moderate lymphocytosis and not a sharp increase in protein content in it can be detected. With a cerebral hemorrhage or spontaneous subarachnoid hemorrhage, it is possible to identify an impurity of blood in the cerebrospinal fluid. It is also possible to determine the inflammatory changes in meningitis.

In the presence of computed tomography, MRI examination of cerebrospinal fluid is used if, according to the clinical picture, the patient has spontaneous subarachnoid hemorrhage, and according to neuroimaging data, signs of blood in the subarachnoid space are not detected. Doppler ultrasound of the extracranial (neck vessels) and intracranial arteries reveals a decrease or cessation of blood flow, the degree of stenosis or occlusion of the affected artery, the presence of collateral circulation, angiospasm, fistulas and angiomas, arteritis and arrest of cerebral circulation in brain death, and also allows you to monitor the movement of the embolus ... It is not very informative for the detection or exclusion of aneurysms and diseases of the veins and sinuses of the brain. Duplex sonography can determine the presence of an atherosclerotic plaque, its condition, the degree of occlusion, and the condition of the plaque surface and vessel wall.

Cerebral angiography. Emergency cerebral angiography is usually performed when it is necessary to make a decision about drug thrombolysis. If technically feasible, angiography is preferred over MRI or computed tomography as less invasive techniques. Urgent angiography is usually done to diagnose arterial aneurysm in subarachnoid hemorrhage. In a planned manner, cerebral angiography in most cases serves to verify and more accurately characterize pathological processes identified using neuroimaging and ultrasound of cerebral vessels.

Echocardiography. Echocardiography is indicated in the diagnosis of cardioembolic stroke if history and physical examination indicate the possibility of heart disease, or if clinical symptoms, computed tomography or MRI findings suggest cardiogenic embolism.

Diagnostic plan for acute cerebrovascular accident. For all types of acute cerebrovascular accident, it is necessary to urgently (within 30 - 60 minutes from the patient's admission to the hospital), a clinical examination (history and neurological examination), computed tomography or MRI of the brain, perform tests such as blood glucose, serum electrolytes, indicators of renal function, ECG, markers of myocardial ischemia, blood count, including platelet count, prothrombin index, international normalized ratio (INR), activated partial thromboplastin time, blood oxygen saturation.

In the absence of the possibility of urgent neuroimaging, EchoEG is performed to diagnose intracranial space-occupying lesions (massive hemorrhage, massive infarction, tumor). If the intracranial mass effect is excluded, cerebrospinal fluid is analyzed to differentiate cerebral infarction and intracranial hemorrhage.

Conclusion: First of all, when diagnosing, it is necessary to examine the patient to determine the violation of the functioning of vital functions: consciousness, respiration, blood circulation. Particular attention should be paid to the neurological status, since its indicators can provide important information for the first hours about

the patient's condition. Then you should proceed to differential diagnosis, which includes indicators of both the general condition of the patient and contains additions to the examination of the neurological status of the patient and the conduct of certain hardware examinations, such as mri and computed tomography. Only after this is the final diagnosis established.

The periods of the course of the disease.

1. The most acute period.
2. Acute period - up to 21 days.
3. Early recovery period - up to 6 months.
4. Late recovery period - up to 2 years.
5. Period of persistent consequences.

The tactics of managing a patient with acute cerebrovascular accident depends on the cause and localization of the disorder, and the clinical manifestations of the disease. Patients usually spend the acute period of stroke in specialized intensive care and neurological departments of hospitals. The most common problems in stroke patients are disorders of motor and coordination functions, speech, vision and sensitivity; loss of walking and self-care skills. It is with these consequences that patients face after discharge from the hospital. In the recovery period, after the patient is discharged from the hospital, the main goal of medical measures is to prevent recurrent stroke and complications, as well as to fully restore the body and its functions.

Statistics show that a patient after a stroke should be activated as early as possible, because the best results from rehabilitation measures are achieved in the first six months after a stroke. The permitted movement regime is set individually for each patient, but even with the most severe strokes, it is recommended to turn the patient in bed every two hours and position treatment. As the patient's condition improves, the treatment regimen is gradually expanded and therapeutic massage, elements of passive gymnastics and active movements are added to prevent

contractures in the arms and legs. Careful adherence and timely expansion of the regimen is an important component of rehabilitation after a stroke and allows you to prevent complications, eliminate movement disorders and restore the ability to self-care. During the recovery period of functions disturbed after a stroke, general strengthening and breathing exercises, posture treatment, passive and active movements, and massage are carried out. Later, physiotherapy exercises, an active motor regimen, and physiotherapy are added to the complex of rehabilitation measures. Manual and hardware massage is used to restore muscle tone, improve tissue trophism and prevent contractures of the joints of the affected limbs.

Therapeutic gymnastics is carried out according to an individually developed program and includes breathing exercises, passive and active exercises with training and gymnastic equipment (medballs, dumbbells), applied sports and game exercises. Therapeutic gymnastics sessions are supervised by an exercise therapy doctor. Hygiene measures are performed daily and around the clock and include skin, hair, nail care; change of underwear and bed linen; assistance with physiological discharges and other care procedures according to the list of nursing care measures.

Conclusion: depending on the period of the disease, different therapy is prescribed. Therapies range from basic medication to directly independent nursing interventions. Moreover, the more time passes from the onset of the disease, the role of the nurse increases and the degree of need for medical intervention decreases.

### **1.3. Treatment**

Indications for hospitalization All patients with suspected acute cerebrovascular accident should be hospitalized in a specialized department for the treatment of patients with stroke, patients with a disease duration of less than 6 hours - in the intensive care unit (neuroresuscitation) of the department for patients with stroke. Transportation is carried out on a stretcher with the head end raised to 30 °. Relative contraindications for hospitalization:

- terminal coma;

- dementia with severe disability before stroke development;
- terminal stage of oncological diseases.

Specific treatments for stroke:

**Hemorrhagic stroke** In every second case, the cause of intracerebral non-traumatic hemorrhage is arterial hypertension, about 10-12 percent. accounted for by cerebral amyloid angiopathy, about 10 percent. due to the intake of anticoagulants, 8 percent. - tumors, all other causes account for about 20 percent. Pathogenetic intracerebral hemorrhages can develop either due to rupture of a vessel or by diapedesis, usually against a background of previous arterial hypertension.

Currently, there are no specific medical methods for treating hemorrhagic stroke; antihypoxants and antioxidants are used. The treatment is based on general measures to maintain homeostasis and correct the main complications (see above). Epsilon-aminocaproic acid is not indicated, as its hemostatic effect does not reach the target, while the danger of PE increases. An important and often decisive method of treating hemorrhagic stroke is surgical intervention - removal of a hematoma by an open or stereotaxic method, taking into account its volume, localization and impact on brain structures.

**Ischemic stroke** Treatment of ischemic stroke is much more complicated than hemorrhagic stroke. First of all, this is due to the diversity (heterogeneity) of the pathogenetic mechanisms underlying it. According to the mechanism of their development, cerebral infarctions are divided into atherothrombotic, cardioembolic, hemodynamic, lacunar, hemorheological and others. Different subtypes of ischemic strokes differ from each other in frequency, causes of their causing, clinical picture of development, prognosis and, of course, treatment.

At the heart of cerebral infarctions is developing ischemia associated with complex cascades of interaction of blood components, endothelium, neurons, glia and extracellular spaces of the brain. The depth of such interactions gives rise to varying degrees of traumatization of brain structures and, accordingly, the degree of

neurological deficit, and their duration determines the time limits for adequate therapy, i.e. "Window of therapeutic opportunities". From this it follows that drugs that are different in mechanisms and points of application also have different time limits for their effect on the affected areas of the brain. The basis of specific therapy for ischemic stroke are two strategic directions: reperfusion and neuronal protection, aimed at protecting weakly or almost non-functioning, but still viable neurons located around the heart attack (zone of "ischemic penumbra"). Reperfusion is possible by thrombolysis, vasodilation, increased perfusion pressure and improved rheological properties of blood.

Antiplatelet agents Aspirin is an effective proven treatment in the acute period of cerebral infarction. It can be used in two modes - 150-300 mg or in small doses of 1 mg / kg of body weight daily. There is practically no risk of hemorrhage. However, very often aspirin cannot be used in patients with gastrointestinal problems. In these cases, its special dosage forms (thrombolysis, etc.) are used. The feasibility of using antiplatelet agents of a different action in the acute period, including ticlopidine and dipyridamole (curantil), is still being studied, as well as pentoxifylline (trental).

Direct anticoagulants There is still no clear evidence for the widespread use of anticoagulants in acute stroke, even in patients with atrial fibrillation. Anticoagulant therapy is not directly associated with a decrease in mortality and disability in patients. At the same time, there is strong evidence that heparin (low molecular weight heparin) actually prevents deep venous thrombosis and therefore the risk of PE (see above).

Neuroprotection This is the second strategic direction in the treatment of ischemic strokes. Severe metabolic disorders, rapid membrane depolarization, uncontrolled release of excitatory amino acids and neurotransmitters, free radicals, the development of acidosis, a sharp entry of calcium into cells, changes in gene expression - this is not a complete list of points of application for neuroprotective drugs in cerebral ischemia.

Currently, there is a whole range of drugs with neuroprotective properties: postsynaptic glutamate antagonists; presynaptic glutamate inhibitors (lubeluzole); calcium channel blockers (nimodipine, calcibindin); antioxidants (emoxipin, L-tocopherol); nootropics (piracetam, cerebrolyzin) and others. The feasibility of their use has been proven under experimental conditions. In general, there is no doubt that neuroprotection is highly promising as a treatment method.

Surgical methods of treatment for cerebellar infarction against the background of acute obstructive hydrocephalus, as well as drainage of the ventricles of the brain are currently used with high efficiency. The feasibility of other surgical interventions in the acute period of ischemic stroke requires additional evidence.

Prevention of repeated disorders of cerebral circulation. Due to the wide variety of causes underlying strokes, it is necessary in the first days of the disease, along with the mentioned methods of treatment, to take measures aimed at preventing recurrence of acute cerebrovascular accident.

Indirect anticoagulants are recommended for cardioembolic strokes due to atrial fibrillation. If there are contraindications to their use, it is recommended to use aspirin. The optimal timing for initiating anticoagulant therapy after an acute episode has not yet been determined. To reduce the risk of cerebral hemorrhage, it is believed that initial treatment should start with aspirin and continue until the underlying deficiency caused by the stroke has resolved, or, if it is a severe stroke, about two weeks after its onset. Indirect anticoagulants and aspirin are rarely used together. Of course, the selection of cardiac therapy itself is necessary.

For arterio-arterial embolism, occlusive pathology of the main arteries of the head, aspirin, ticlopidine, dipyridamole are effective. The most optimal is individual testing of the patient's blood reaction to one or another prescribed drug. This method has been successfully used in our clinic for several years. Treatment and prevention of recurrent cerebral hemorrhages is based primarily on carefully selected

antihypertensive therapy, and prevention of recurrent ischemic strokes is based on ECG and blood pressure monitoring.

In conclusion, it should be emphasized once again that with strokes there is no and cannot be a single universal remedy or method of treatment that radically changes the course of the disease.

The prognosis for life and recovery is determined by a combination of timely and full-fledged general and specific measures in the first days of the disease, including, among others, constant correction of homeostasis - a determining factor, without which normalization all subsequent treatment becomes ineffective, as well as active neurosurgical manipulations along with early physical and psychological rehabilitation ...

First of all, this applies to strokes of moderate and high severity. A clear understanding of the pathogenetic mechanisms underlying strokes is precisely the key with which it is possible to select a reasonable and effective treatment already in the first hours after the onset of the development of vascular brain damage, to ensure a favorable prognosis.

All patients with suspicion of acute cerebrovascular accident are subject to hospitalization, since the time to start treatment (if possible, it should be started as early as possible) depends on the outcome and prognosis of the patient's further condition. Treatment is carried out using both specific and basic therapy. In addition, a very important role of the nurse is to constantly monitor such a patient in order to avoid complications.

#### **1.4. Forecast**

Prognosis for ischemic stroke. Death in the first month of the disease in 15 - 25% of patients (mainly with atherothrombotic and cardioembolic subtypes). With lacunar stroke, the mortality rate is 2%. Causes of death:

- In the first week: more often - edema and dislocation of the brain with damage to vital centers (40% of all deaths in the first 30 days), less often - cardiac pathology.

- At 2 - 4 weeks: pulmonary embolism, pneumonia, acute heart failure.

Survival of patients:

- By the end of the first year 60 - 70%.

- After 5 years - 50% (unfavorable prognostic signs: advanced age, myocardial infarction, atrial fibrillation, heart failure).

- After 10 years - 25%.

- In the future, mortality is 16 - 18% per year.

Disability disorders:

- By the end of the first month in 60 - 70% of patients.

- After 6 months, 40%.

- After a year in 30% of patients.

Movement recovery:

- Most noticeable in the first 3 months.

- Paresis in the leg often recovers better than in the arm.

- Hemiplegia by the end of the 1st month, plegia in the hand - unfavorable prognostic signs.

- Low probability of regression of neurological deficit after a year or more (exceptions are in patients with aphasia - speech is restored for several years).

Poor prognostic factors:

- Coma.

- Hemiplegia.

- Hyperglycemia.

- Over 70 years of age.

- The volume of the hematoma is more than 60 ml.

- Breakthrough of blood into the ventricles.

With cerebral hemorrhage.

The most important task in the prevention of repeated cerebral hemorrhage is the control of blood pressure. Cessation of smoking, alcohol and cocaine abuse is also recommended.

Acute cerebrovascular accident can be transient and persistent, with focal brain damage (cerebral stroke).

Acute cerebral circulatory insufficiency is more often fatal than other diseases, in addition, stroke is one of the most common causes of disability and persistent loss of working capacity. With a stroke, prevention plays a role almost on a par with treatment, since a person is able, according to many criteria, except perhaps heredity, to take care of himself and prevent many risk factors. Even statistics show that in countries with anti-stroke prevention, the incidence rate is much lower than in others.

## Chapter 2.

### Conducting Stroke Awareness Research in Chicago's Adult Population

The study was conducted on the basis of visitors to the Elite Home Health Care, Chicago, where visitors were offered a questionnaire consisting of questions related to vascular pathology (Tabl 1).

Table 1

Consolidated form of the results of the survey of the awareness of the population of Chicago about stroke

№	Questions	№	Answer options	Number of respondents (people)	Distribution (%)
1	What is your age?	A	up to 30 years old.	9	10%
		B	30-40 years old.	30	33,4%
		C	40-50 years old.	21	23,3%
		D	50-60 years old.	18	20%
		E	older	12	13,3%
2	2) What is your gender?	A	Male.	51	56,7%
		B	Female.	39	43,3%
3	Do you know what constitutes a stroke?	A	Yes	63	70%
		B	No	27	30%
		C	I am at a loss to answer	0	0%
4	Are you familiar with the rules of first aid for stroke?	A	Yes	15	16,7%
		B	No	66	73,3%
		C	I am at a loss to answer	9	10%
5	Do you know the symptoms of a stroke, can you recognize it?	A	Yes	33	36,7%
		B	No	45	50%
		C	I am at a loss to answer	12	13,3%
6	Are there any of the listed risk factors that	A	Age over 55.	36	40%
		B	High blood pressure.	30	33,3%

	increase the likelihood of developing a stroke?	C	High blood cholesterol levels.	27	30%
		D	Pathology of the heart and blood vessels (ischemic heart disease, rhythm disturbances, circulatory failure).	24	26,7%
		E	Diabetes.	39	43,3%
		F	Obesity and overweight.	45	50%
		G	Cardiovascular diseases.	36	40%
		H	Smoking.	60	66,7%
		I	Drinking alcohol.	66	73,3%
		J	Stress.	45	50%
		K	There are no risk factors.	3	3,3%
		L	I am at a loss to answer.	18	20%
7	Do you try to take measures to prevent stroke in your daily life?	A	Yes	36	40%
		B	No	39	43,3%
		C	I am at a loss to answer	15	16,7%
8	Do you have any diseases of the cardiovascular system?	A	Yes	27	30%
		B	No	45	50%
		C	I am at a loss to answer	18	20%
9	Do you think a sedentary lifestyle can be attributed to one of the possible risk factors for stroke?	A	Yes	48	53,3%
		B	No	21	23,3%
		C	I am at a loss to answer	21	23,3%
10	Select the main initial symptoms of a stroke:	A	Numbness or weakness in the arm and / or leg.	30	33,3%
		B	Facial asymmetry.	24	26,7%
		C	Dizziness.	27	30%
		D	Violation of speech.	39	43,3%
		E	I am at a loss to answer.	33	36,7%
1	What should be done	A	Call an ambulance.	66	73,3%

1	when the initial symptoms of a stroke occur?	B	See your local doctor.	9	10%
		C	I am at a loss to answer	15	16,7%
1 2	What should be done when the initial symptoms of a stroke occur?	A	Control blood sugar.	18	20%
		B	No smoking.	36	40%
		C	Do not abuse alcohol.	39	43,3%
		D	Control blood pressure.	33	36,7%
		E	Be physically active	30	33,3%
		F	Control blood cholesterol	27	30%
		G	Control your weight	36	40%
		H	Increase resistance to stress	27	30%

The analysis of awareness of risk factors for stroke in Elite Home Health Care, Chicago was carried out on the basis of a questionnaire. The questionnaire is an anonymous questionnaire containing a series of questions about the patients' knowledge of the risk factors for stroke. The respondents were asked to choose from a number of presented pathological conditions and diseases those that, in their opinion, contribute to the development of acute cerebrovascular accident. This row presents a list of randomly arranged stroke risk factors (modifiable and non-modifiable) and diseases, pathological conditions, physical phenomena that do not affect the risk of stroke.

Results of the survey. Of the respondents, 10% are persons under 30 years old and persons from 30-40 years old- 33.4%. 40-50 years old is 23.3%, and from 50-60 years old 20%. Over 60 years-13.3% (Fig. 1).

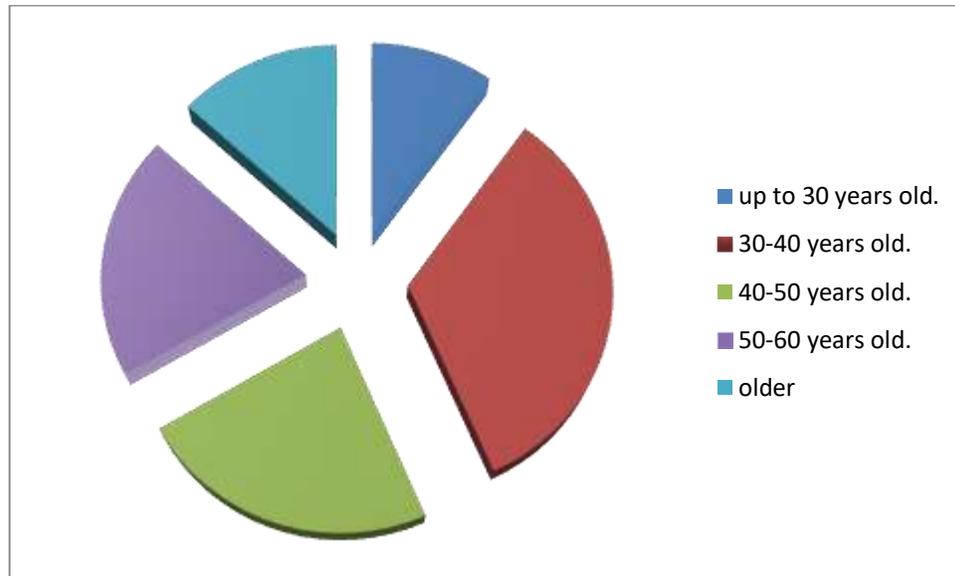


Fig. 1. Distribution of respondents by age

Of the respondents, a larger number of men are 51 people (56.7%). 39 women (43.3%) (Fig. 2).

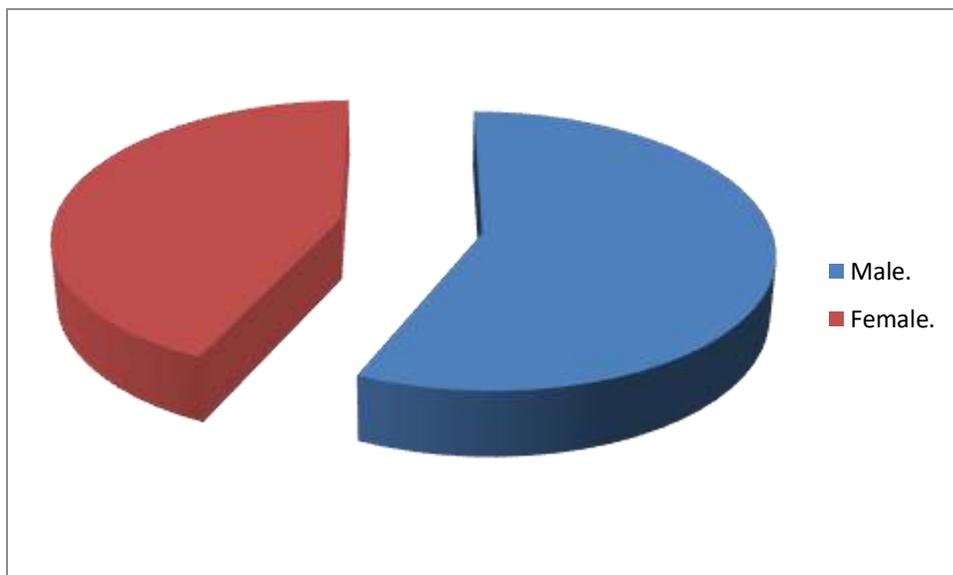


Fig. 2. Distribution of respondents by gender

Twenty-one of the respondents were aware of what constitutes a stroke. This amounted to 70%. No - 9 people answered (30%). Nobody chose the answer "I find it difficult to answer" (Fig. 3).

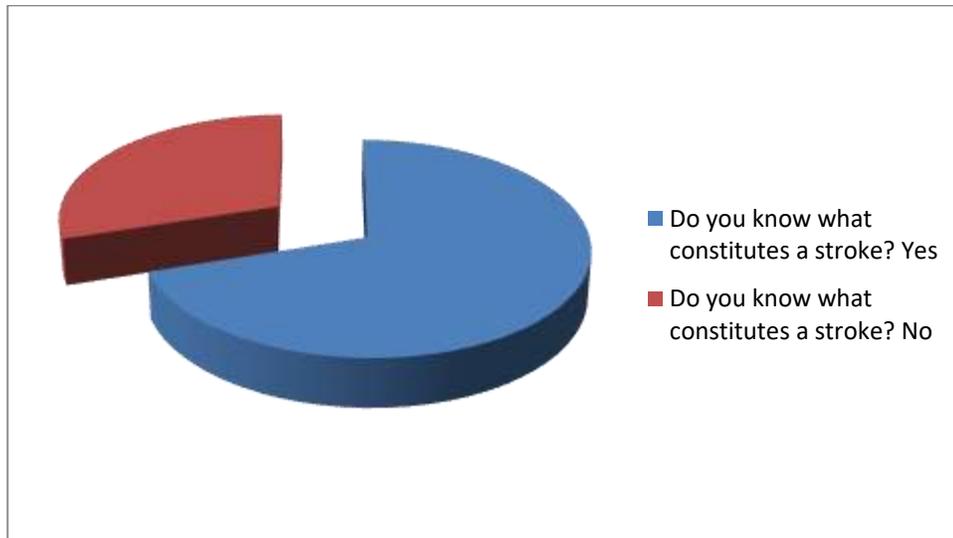


Fig. 3. Do you know what a stroke is?

15 people (16.7%) are familiar with the rules of first aid for stroke, 66 people are not familiar (73.3%). An unambiguous answer was not given - 9 people (10%) (Fig. 4).

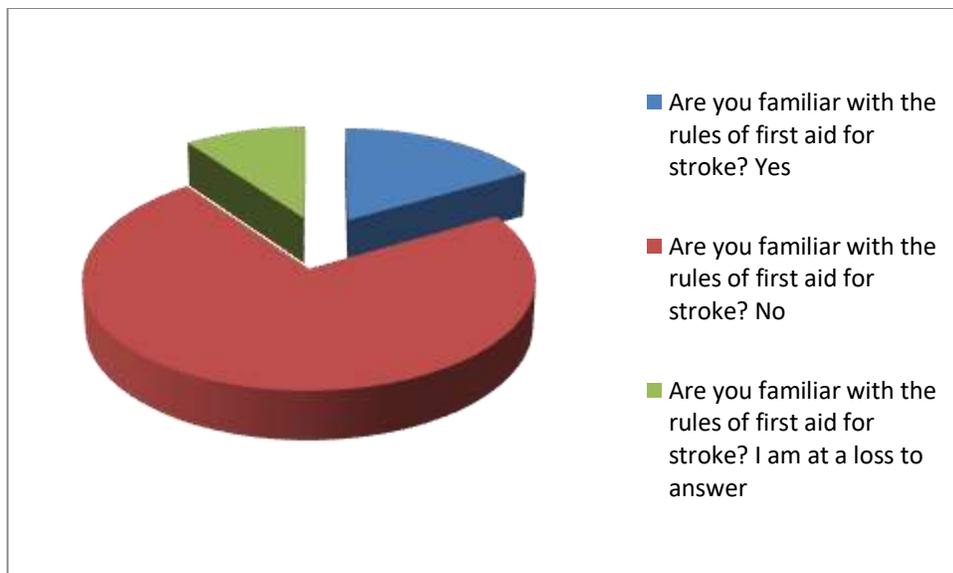


Fig. 4. Are you familiar with the rules of first aid for stroke?

33 people (36.7%) are familiar with the symptoms of stroke and are ready to recognize them, 45 people are not familiar (50%). Difficult to answer - 12 people (10%) (Fig. 5).

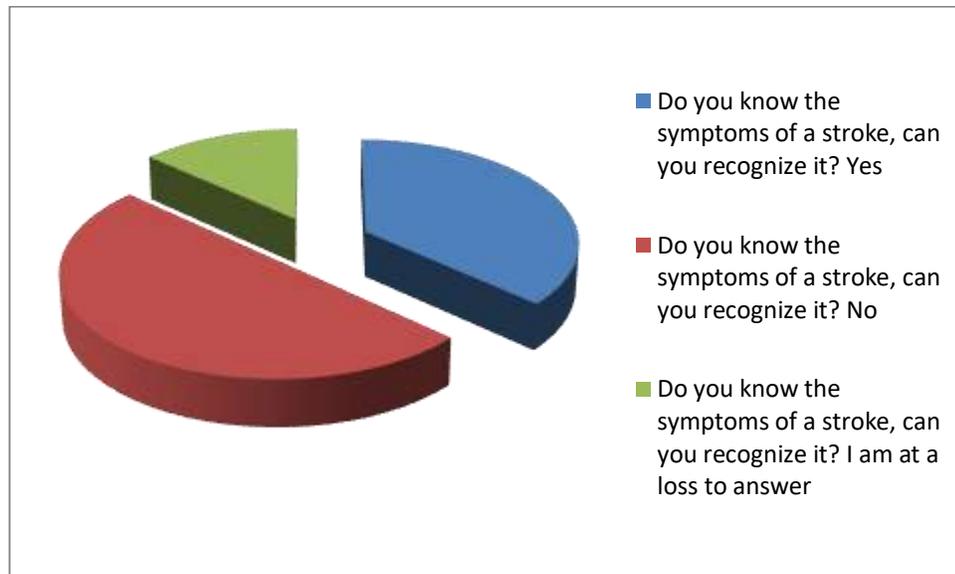


Fig. 5. Do you know the symptoms of a stroke, can you recognize it?

The majority of respondents correctly indicated the risk factors: age over 55 years - 36 people (40%), high blood pressure - 30 (33.3%), high blood cholesterol - 27 people (30%), pathology of the heart and blood vessels - 24 people (26.7%), diabetes - 39 people (43.3%), obesity and overweight - 45 people (50%), cardiovascular diseases - 36 people (40%), smoking - 60 people (66.7%), alcohol consumption - 66 people (73.3%), stress - 45 people (50%), there is no risk factor - 3 (3.3%). Difficult to answer - 18 (20%) (Fig. 6).

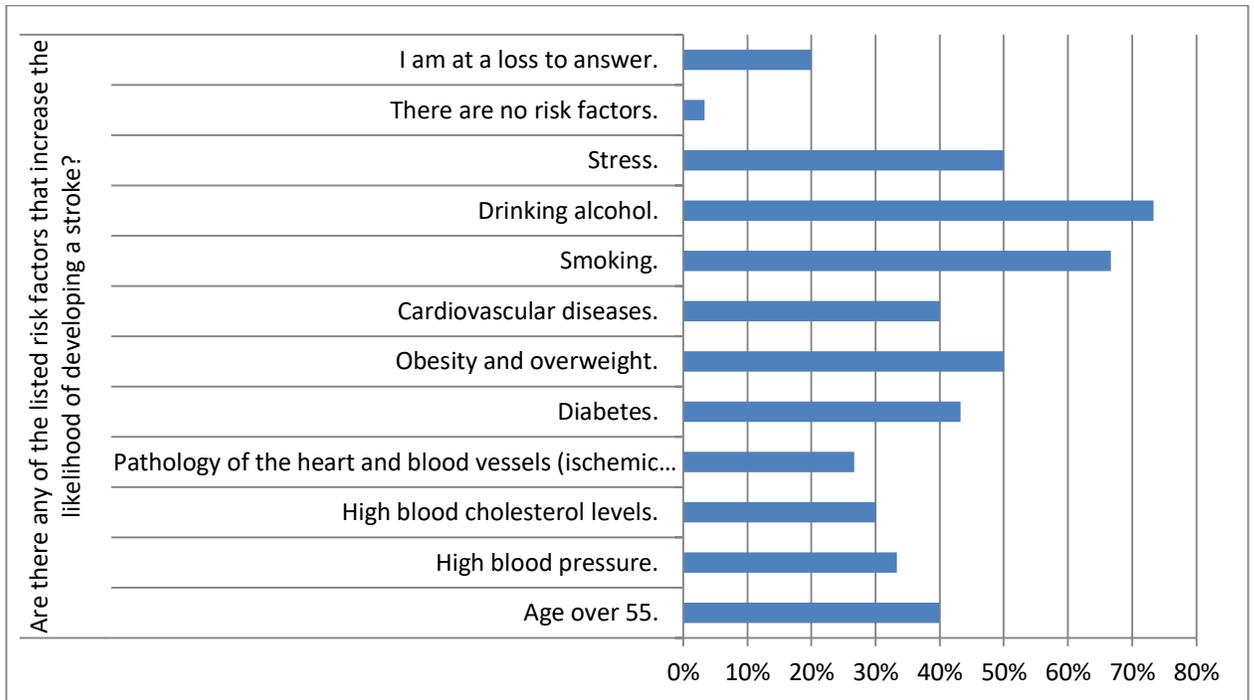


Fig. 6. Are there any of the listed risk factors that increase the likelihood of developing a stroke?

36 people (40%) do not neglect measures to prevent the risk of developing a stroke. The answer was negative - 39 people (43.3%). An unambiguous answer was not given - 15 people (16.7%) (Fig. 7).

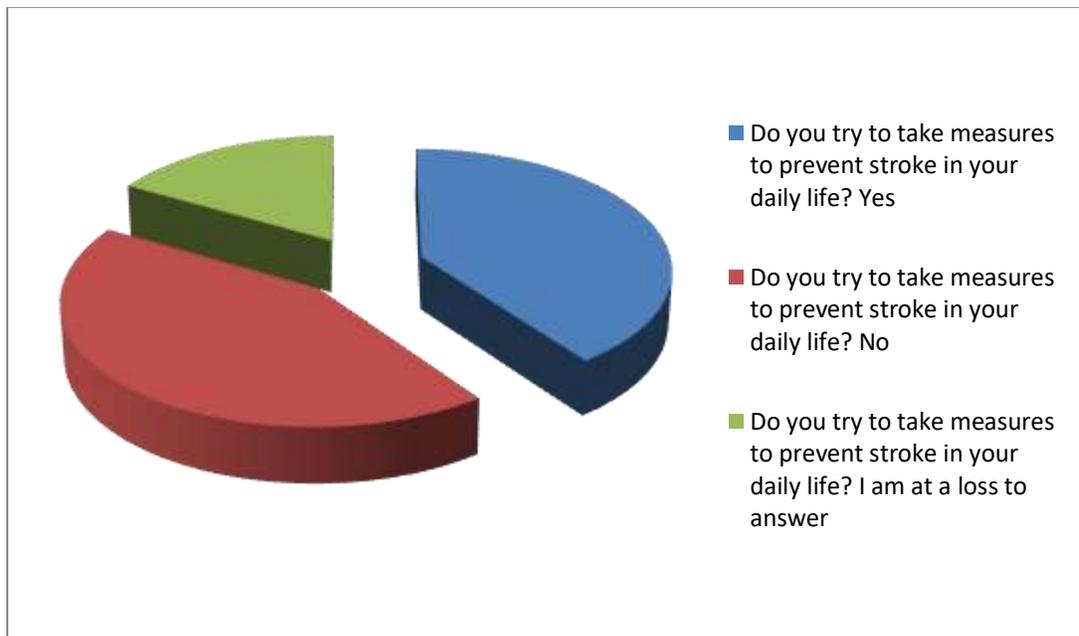


Fig. 7. Do you try to take measures to prevent stroke in your daily life?

There are already diseases of the cardiovascular system among the respondents in 27 people (30%). Do not have these diseases - 45 people (50%). The question caused difficulties for 18 people (20%) (Fig. 8).

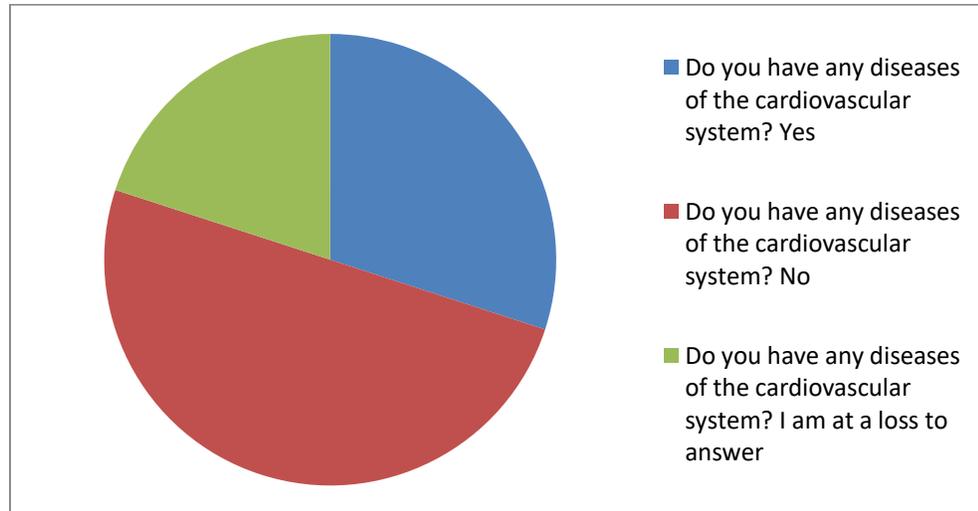


Fig. 8. Distribution of respondents by the presence of diseases of the cardiovascular system.

A sedentary lifestyle as one of the factors in the development of stroke was attributed to 48 people (53.3%). 21 (23.3%) people answered negatively. Found it difficult to answer - 21 people (23.3%) (Fig. 9).

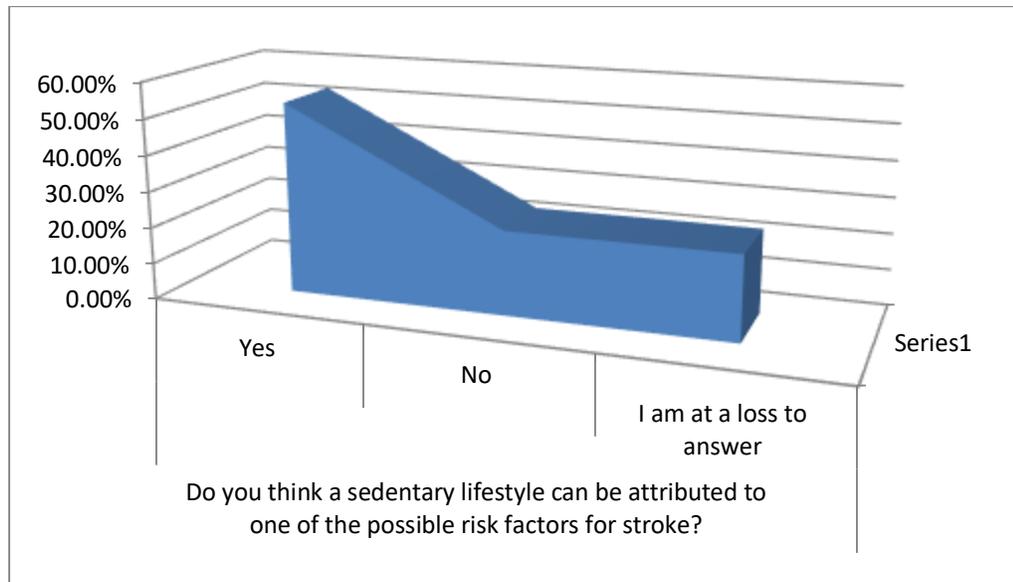


Fig. 9. In your opinion, can a sedentary lifestyle be attributed to one of the possible risk factors for stroke?

The survey showed that the respondents are not sufficiently familiar with the initial symptoms of stroke: Numbness or weakness in the arm and / or leg - 30 people (33.3%). Facial asymmetry - 24 people (26.7%). Dizziness - 27 people (30%). Violation of speech - 39 people (43.3%). 33 people (36.7%) did not give an unambiguous answer (Fig. 10).

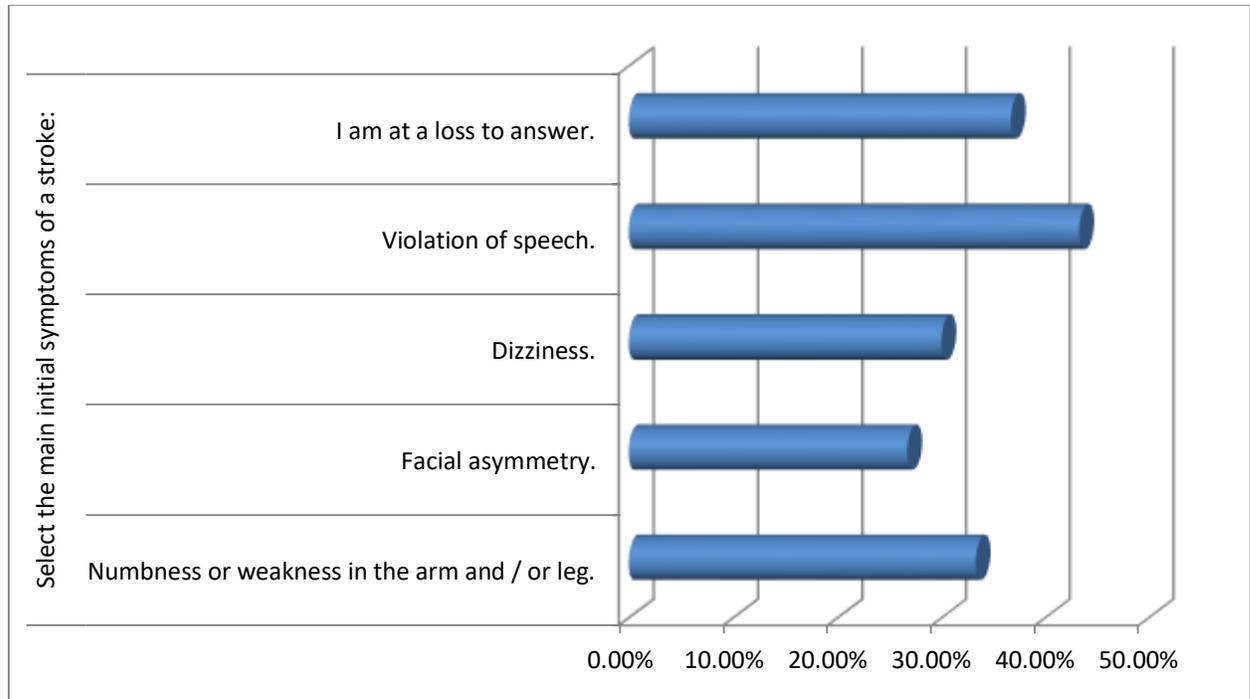


Fig. 10. Distribution of respondents answers to knowledge of the main initial symptoms of stroke.

When the first symptoms of a stroke occur, 66 (73.3%) of the 90 respondents will call an ambulance team, 9 people (10%) will go to the local doctor. 15(16.7%) people could not decide on the answer (Fig. 11).

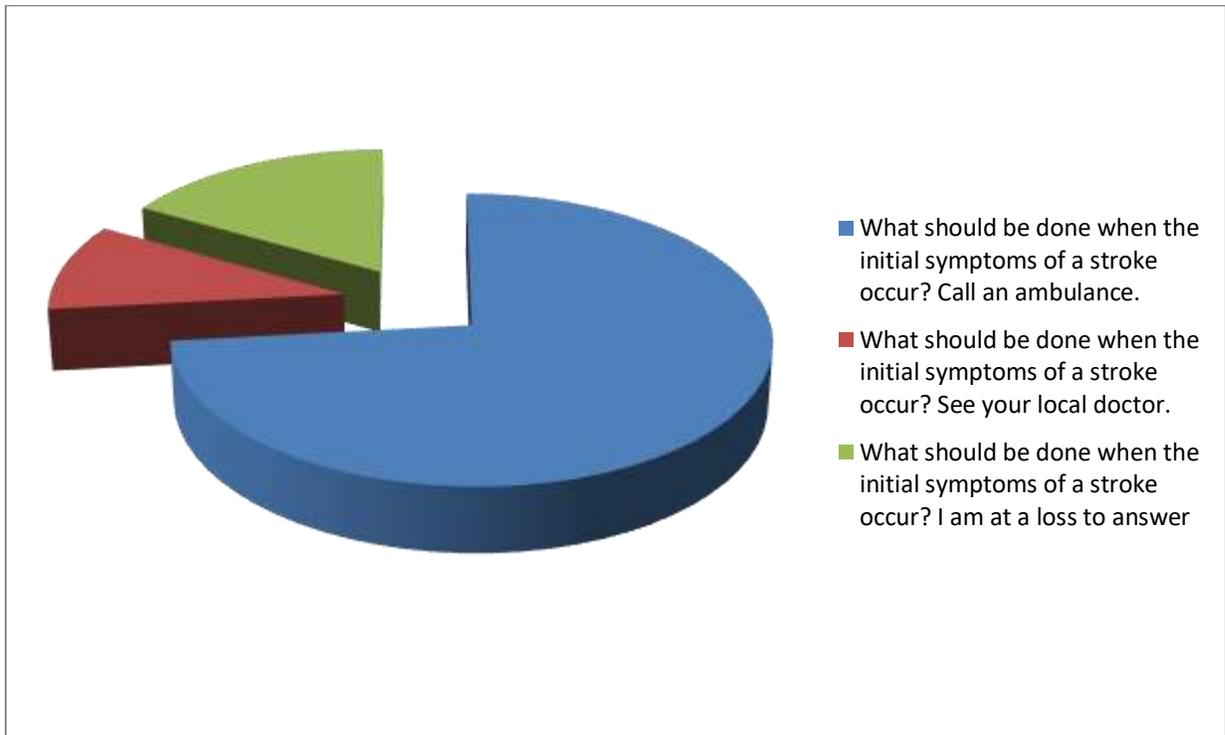


Fig. 11. What should be done when the initial symptoms of a stroke occur?

The survey showed that not all respondents are familiar with measures of prevention and prevention of stroke: control blood sugar - 18 people (20%), do not

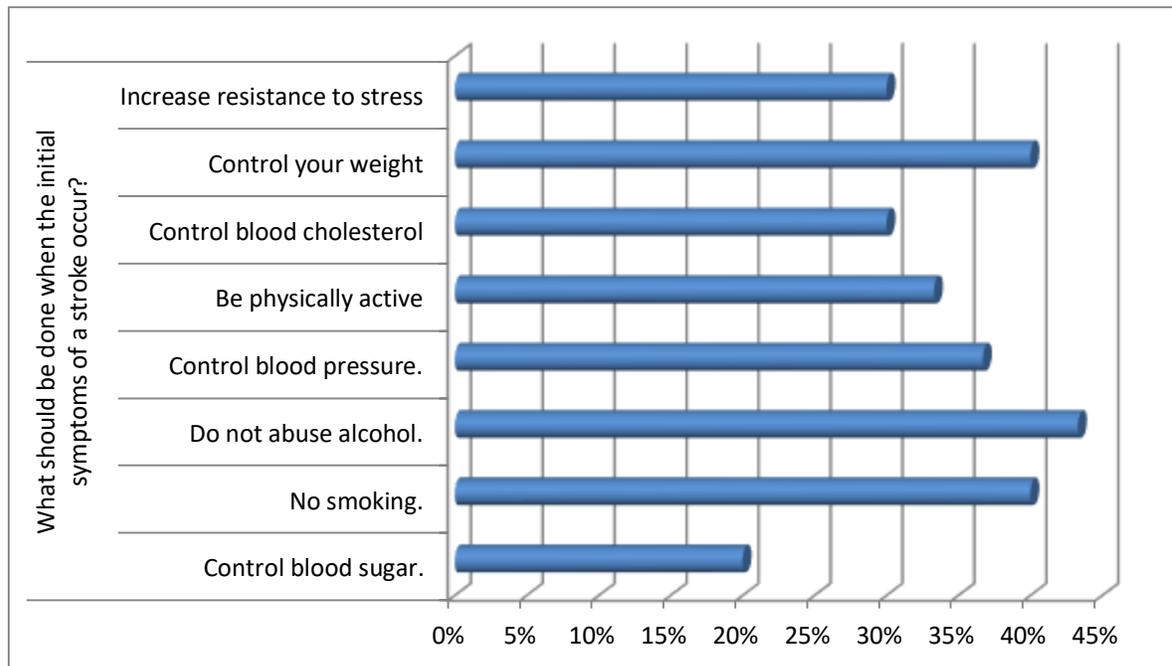


Fig. 12. What should be done to prevent stroke?

smoke - 36 people (40%), do not abuse alcohol - 39 people (43.3%), control blood pressure - 33 people (36.7%), be physically active - 30 people (33.3%), control blood cholesterol - 27 people (30%), control your weight - 36 people (40%), increase stress resistance - 27 people (30%) (Fig. 12).

Conclusion on the practical side. In recent years, there has been a trend towards an increase in the number of cases of acute cerebrovascular accident in persons under 45 years of age. The results obtained indicate a lack of awareness of the population about risk factors, methods of treatment and prevention of stroke. In addition, according to the results of the survey, it can be judged that not all respondents are familiar with the measures of prevention and prevention of stroke. Which, in turn, also negatively affects the possibility of developing the disease. In this regard, carrying out sanitary and educational activities seems to be extremely relevant in the complex of measures for the primary prevention of acute cerebrovascular accident.

As a result of working with statistical data, we can make a general conclusion that at present, stroke is one of the most dangerous diseases in terms of mortality. In conclusion, it should be emphasized once again that with strokes there is not and cannot be a single universal remedy or method of treatment that radically changes the course of the disease. The prognosis for life and recovery is determined by a combination of timely and full-fledged general and specific measures in the first days of the disease. A clear understanding of the pathogenetic mechanisms underlying strokes is exactly the key with which it is possible to choose a reasonable and effective treatment already in the first hours after the onset of the development of vascular brain damage, to ensure a favorable prognosis.

In addition, acute cerebrovascular accident is also one of the most common causes of disability and incapacity for work of people who have undergone it. The obtained results of the study provide the most complete information about the

epidemiological situation in relation to various forms of stroke in the world and in the United States.

The etiology and pathogenesis of stroke are diverse enough to confirm the statistics that in recent years the incidence of stroke has also increased among the younger part of the population. In addition, it can be concluded also about the role of the nurse in the rehabilitation of stroke patients. The participation of a nurse in the treatment process is present in every period of the course of the disease.

The survey showed that many people are aware of the disease such as stroke. Only not everyone knows the symptoms, preventive measures and first aid for this disease. This is an indicator that it is necessary to increase the number of preventive conversations with the population about this disease, including conversations about the dangers of drinking alcohol, smoking, since these habits affect the number of strokes. Based on the results of the study, we have developed a memo "Prevention of acute cerebrovascular accident".

### **Chapter 3**

#### **Nursing process in the rehabilitation of patients with acute cerebrovascular accident in the neurological department**

Prevention and patient care plan in hospital and at home. In most cases, patients who have suffered a stroke have a certain degree of recovery of impaired functions. Thus, in our country, disability due to stroke (3.2 per 10,000 population per year) ranks first (40-50%) among the pathologies that cause disability. There are currently about 1 million people with disabilities in the United States due to stroke. At the same time, the state's losses from one patient with a disability amount to 1.247 million rubles a year. Morbidity (disability) changes the "quality of life" of the patient and raises new problems (adaptation to the defect, change of profession, family

behavior and others) [9]. Thus, according to surveys at the time of discharge from the hospital, stroke patients in 34% of cases expressed concern about being a burden in the family, and 12% "did not imagine what would happen next." The most common consequence of stroke, affecting the "quality of life" of patients, are impaired motor functions, which by the end of the acute period (3 weeks from the onset of stroke) are observed in 81.2% of 100 surviving patients. However, acute cerebrovascular accident often leads to depression, cognitive impairment, and sleep disorders, which are in the "shadow" of the main (motor) defect, but sometimes to a greater extent affect the "quality of life" of post-stroke patients [12]. At the same time, they also have a significant impact on the course of rehabilitation treatment and can be "negative predictors" of the effectiveness of rehabilitation measures. Consequently, the state of these functions can serve as a prognostic criterion for the recovery of patients. Speaking of the brain's ability to recover, it is important to note the important role of sleep in this process. If within 7-10 days after an acute disturbance of cerebral circulation there is no restoration of a normal picture of a dream, the forecast is considered unfavorable. As a result, in the rehabilitation treatment of patients who have suffered a stroke, it is necessary to pay close attention to sleep disorders.

The survey, which aimed to find out what patients who have suffered a stroke expect to receive from a doctor and paramedics, showed that almost a third of patients (29.1%) in the acute period of stroke need psychological support, half need information about the disease, 70.8% - in technical assistance and only 8.3% do not require assistance. 41.6% expect emotional help from nurses, 20.8% - informational and 91.6% - technical. So, what are the main features of care for post-stroke patients?

Movement disorders (hemiparesis, hemiplegia), speech and other functions may persist for a long time after a stroke. Recovery of impaired functions is slow, so patients who have suffered a stroke require special attention and careful professional care. In the acute period of the disease, special attention should be paid to the

prevention of respiratory disorders, the development of pneumonia, as well as the prevention of bedsores. It is necessary to turn the patient every two hours in a sideways position. Of great importance are general hygiene measures: skin care, daily wiping with drying disinfectant solutions.

The patient should be washed daily. When using a vessel or duck, an oilcloth covered with a diaper is placed under them. In case of incontinence, it is possible and convenient to use diapers, but if your patient is under constant supervision, it is better to use moisture-absorbing disposable diapers.

It is also necessary to monitor the oral cavity, to prevent it from drying out or damaging the mucous membranes. When feeding the patient, he is seated or his head is raised, depending on the condition. In case of violation of the swallowing reflex, special feeding methods are used (usually tube feeding). Food should be easily digestible, fortified. It is necessary to constantly monitor the work of the intestines, if necessary, put a cleansing enema.

Of great importance is the position of the patient in bed. As after a stroke the characteristic change of a tone of muscles develops, it is necessary to give physiologically correct position to a body, especially to the affected extremities. For this purpose, splints cut from plywood, covered with cotton wool and a bandage are used for the hand. The hand should be unbent at the elbow, the fingers unbent and spread apart, the splint is placed on the palm surface and fixed with a bandage to half of the forearm. The leg should be bent at the knee joint to 15-20 degrees, a roller is placed under the knee, the foot is bent to 90 degrees and should have an emphasis. The patient should be turned and placed in such positions every 2-3 hours.

In the future, such patients need therapeutic exercise, massage of the affected limbs. When speech is impaired - in speech therapy classes. The process of recovery of impaired functions in patients who have suffered a stroke can be very long. So be patient and merciful to them. They absolutely need caring, kind care.

Thus, it can be seen that the main role in the recovery and adaptation of stroke patients falls on the shoulders of the nurse. In addition, it is the nurse who should give the patient's relatives recommendations for his care after discharge, as it is not always possible to keep the patient in the hospital after the relief of the acute period of the disease. So, what recommendations should a nurse give to relatives to improve the patient's quality of life?

First of all, the nurse should talk to the relatives of the patient, because in the process of rehabilitation very often plays a role in the psychological state of the patient. And who is able to support a patient who has suffered such a dangerous disease, if not his relatives. Stroke affects each person differently. In many cases, the extent of brain damage remains unknown for several weeks. Such uncertainty can cause family members or close friends to feel frustrated and hopeless or even frightened. But try to take the place of the patient yourself. Although you are derailed, waiting for an answer to the question of what really happened, this condition after a stroke is quite adequate. After a stroke, it is easiest to see what functions are lost. But to help the patient, you need to focus on those skills and abilities that have survived. Rehabilitation is hard work, and any support speeds up the recovery process. Take a look at the obvious limitations of the past. When you do this, you will find that both you and the patient are really capable of improvement. If the stroke damages the center of speech located in the brain, aphasia can occur (reduced ability to use oral and written speech). Some people are unable to express their thoughts, or they are unable to understand other people's speech. Some people have both types of these disorders. People with aphasia may also utter incorrect sounds or their speech may consist of individual words that are unrelated. Sometimes aphasia manifests itself in the fact that a person loses the ability to read, write and use numbers. Support from family and friends can speed up the patient's recovery process. If he suffers from aphasia, the following tips can make it easier to communicate with him.

Try to spend more time with the patient. Read aloud to him or tell him about how you spent today. Praise the patient for the effort he makes to restore speech. Speak slowly and clearly. Use ordinary words, but do not speak to the patient "from above".

Speak simple sentences. Follow the rule: state any one thought and describe any one action.

Ask questions that can be answered "yes" or "no". Give the patient time to understand the question and respond to it. Do not try to talk to the patient until you are ready to articulate the topic of conversation.

Don't ignore the patient. Keep him informed of your affairs and try to draw attention to them.

Do not speak in front of the patient as if he is not there.

The usual goal of rehabilitation is clear, fluent speech. The patient can learn to control the muscles of the face and mouth by doing exercises that help restore their strength. These exercises are often performed in front of a mirror. Patients may also learn to break words into sounds or try to make such sounds. For example, a patient may learn to:

1. Pronounce every sound in every word.
2. Focus on the correct pronunciation of individual words, rather than trying to say the whole sentence at once.
3. Tap your finger in time with each syllable.

4. Control your breathing during speech. The more a dysarthria patient engages in speech practice, the faster his speech improves. Talk to the patient as you did before the illness, and wait for him to tell you in return.

Follow these tips:

- Practice pronouncing sounds and words with the patient. A speech therapist can provide you with word lists.

- Remind the patient to speak slowly. This will give him time to pronounce all the sounds that make up each word.

- Ask the patient to repeat words you did not understand, or ask them to say a word or phrase in another way.

Swallowing disorders complicate the process of eating and drinking. If the patient has difficulty swallowing, the likelihood of an attack of suffocation increases. Food, fluid or saliva may not even get into the esophagus, but into the lungs. This can cause pneumonia, which is an additional risk that can worsen the patient's condition. One of the signs of swallowing disorders is the appearance of coughing or sneezing immediately after swallowing food. In some cases, after swallowing, the sounds of the patient's voice become wet or gurgling. The patient may be prescribed a special diet until there is an improvement in swallowing. In the beginning, the use of diluted liquids and solid foods may be prohibited. As swallowing becomes safer, the patient's diet changes accordingly. The patient can learn to perform special exercises. They strengthen the muscles of the tongue and increase the volume of its movements. In addition, the patient may tighten his lips. This helps to limit the accumulation of food between the cheeks and gums.

Some behavioral changes are caused by brain damage caused by a stroke, while other behavioral changes are caused by depression. It is useful for the patient's family members to learn to distinguish between these two types of changes. Family members of a patient may be so anxious to help a loved one that they forget about their own needs. A loving and gentle spouse after a stroke can become depressed and overly demanding. Therefore, it is important to find ways to cope with such behavioral changes and help him in the recovery process.

A family member who provides help to a stroke patient helps him to reach the highest possible level of independent existence. Approve the decisions made by the person close to you, and support his desire for active pastime. Try to find types of entertainment that do not require your mandatory presence, for example, encourage

him to walk outside the house. After a stroke, the patient may experience sudden or excessive emotions. Sadness and depression often occur.

How can relatives help? Stay calm. Accept the patient's behavior as it is and continue to do what you did. If the patient asks you for forgiveness after an emotional outburst, then consider his behavior as a result of a stroke. Do not criticize the patient for frequent changes in his mood. Keep the patient active. Play board games with him, watch TV together or listen to music. Ask friends to visit the patient if he wants to see them. Do not tell the patient "do not lose heart", it is better "I'm with you".

You must have confidence that over time in the process of rehabilitation, the condition of a person close to you will begin to improve and gradually there will be a partial or almost complete recovery of lost functions and skills. As you adjust to the changes that have taken place in your life and the lives of those close to you, you may have new feelings. Discuss and plan your future together. Your roles in family life may now be different, but you need to get used to the fact that there are some limitations in your life. The success that someone close to you can achieve in the recovery process largely depends on the optimism with which you look to the future.

Make your apartment safer. With minimal changes, you can make your loved one's home life easier and safer. Try the following tips:

- Install beams and crossbars around the bath or shower.
- Place a stool in the shower and manually grip the shower head.
- Purchase shampoo with an easy-to-open lid and liquid soap with spray.
- Keep a plastic urinal by the patient's bed so that he can use it at night.
- Leave a dim light in the patient's room for the night.
- Make sure that the patient's path of movement is not obstructed by foreign objects.
- Use a cordless or hands-free telephone that the patient can use.

**Taking medications** The patient may be prescribed several types of medications. Each drug should only be taken as directed by the instructions provided

or directly as directed by a physician. You can help be sure that all medications are taken according to a pre-defined schedule. Since the reception time is important, set the buzzer. Keep the tablets you need during the day (at the correct dosage) in the dispensing tray. Ask your doctor what foods or drinks the person should avoid while taking the medication.

Adherence is to a healthy lifestyle.

To speed up the recovery process of a person close to you, he needs to follow the following recommendations:

- Eat foods low in fat and cholesterol.
- Quit smoking.
- Try to be in the fresh air every day for a long time, and in case of recovery of walking to take daily walks, gradually increasing their duration.
- Learn to alternate exercise with rest.
- Limit the number of people who visit it at the same time, as a person close to you, especially at first, can get tired very quickly.

The behavior of a patient with a confused state of consciousness, giving the impression of a person with strangeness, needs to streamline the environment, which allows him to more easily make a choice. A patient with impaired reasoning needs guidance in making important decisions. Sometimes he may have apathy, which may increase if everything around him is too simple and quiet. If you notice such strange behaviors in him, then try to find out their cause and try to make his existence easier, which will benefit you as well. Try to treat the patient with compassion, tolerance and politeness. This can be difficult. The patient expresses his needs through changes in behavior

You may need the help of a professional to learn how to behave in difficult situations. With a positive attitude to the difficulties that arise, it will be easier for you to find ways to overcome them.

Depression. Depression is the most common condition after a stroke, and it is often overlooked or underestimated. Depression can become insurmountable, affecting the state of mind and self-confidence of everyone it affects. A depressed patient may refuse or ignore medication, and may have no desire to perform exercises that may improve his or her mobility. He may be irritable towards other people. Depression can cool the enthusiasm with which the patient's family helps him in the recovery process, or scare away other people who want to help him. Depression deprives a stroke patient of social contacts that could dispel the depressed state, and as a result, a vicious circle is formed. Constant, stable social contacts are vital to overcoming depression. It is possible that over time, the patient's condition will improve, and depression may disappear on its own. The family's help in overcoming depression can be to stimulate the patient's interest in other people, to approve of any kind of active pastime, to give him the opportunity to participate in activities that require mental activity. In some cases, in order to overcome depression, your doctor may recommend treatment with antidepressants.

## **Chapter 4**

### **Analysis of the results of a study of nursing care for patients with acute cerebrovascular accident (Discussion of results)**

The participation of the nurse in the treatment process is present in each period of the disease. In the acute period, the leading role, of course, belongs to the doctor, but the nurse, assisting him in various manipulations and the introduction of prescribed drugs, certainly plays a very important role in the treatment process. However, the acute and subsequent acute periods last for 21 days, while the recovery periods last from two months to two years. A feature of acute cerebrovascular insufficiency is the relationship between the role of nurse and doctor. The longer the

time elapses since the onset of the disease, the less constant medical attention is required (although patients are, of course, under observation) and the role of the nurse increases. In patients who have suffered a stroke, the quality of life deteriorates sharply, which primarily threatens the deterioration of the psychological state of the patient, manifested by depression and "unwillingness to be a burden". In this aspect of the patient's rehabilitation, the role of the nurse is especially important, because it is she who is near the patient most of the time, especially in the first days after an acute cerebrovascular accident. The role of the nurse is integral both in helping the patient to eat, make trips, observe hygiene, and from a psychological point of view. After all, to put it simply, most people who end up in the hospital with a diagnosis that makes them helpless and causes them to think that their lives will not be the same, are completely unaware of the dangers and features of their disease. In addition, it is the nurse's responsibility to train the patient's relatives to treat him, provide him with physical assistance and moral support. And this is even more important during rehabilitation, another therapy, because the patient's desire to recover as soon as possible, as well as the support of his relatives and friends largely depends on the recovery time of the patient's normal life.

As a rule, people who have suffered from acute cerebral insufficiency are little aware of how and what can help them to restore a normal rhythm and standard of living as soon as possible.

So who can they hope for? Only for a man in a white coat, who takes care of them every day and helps them maintain faith in their own recovery - a nurse.

## Conclusions

So, in the course of the work, there was an expansion of knowledge concerning acute cerebrovascular disorders. In addition, as a result of working with statistics, we can draw a general conclusion:

1. Stroke is one of the most dangerous mortality diseases.
2. At strokes there is no and cannot be a uniform universal means or a method of treatment which cardinally changes a course of a disease.
3. The prognosis for life and recovery is determined by a combination of timely and comprehensive general and specific measures in the first days of the disease, including, among other things, constant correction of homeostasis - a determining factor without which all subsequent treatment becomes ineffective, as well as active neurosurgical manipulations along with early physical and psychological rehabilitation. First of all, this applies to strokes of medium and high severity.
4. A clear understanding of the pathogenetic mechanisms underlying strokes is precisely the key with which it is possible to select a reasonable and effective treatment in the first hours after the onset of vascular lesions of the brain, to ensure a favorable prognosis.
5. In the work of nurses it is necessary to conduct conversations about the prevention of strokes, especially in those who have suffered diseases (due to high recurrence rates), but it is equally important to conduct such interviews among people who do not tolerate acute cerebrovascular accident.
6. Statistics show that the speed of people's lives now rarely gives them the opportunity to think about their health and the prevention of cerebrovascular disorders, along with other life-threatening conditions. But often in the hands of the people themselves the opportunity to protect themselves from many health problems.

### List of used literature

1. Donnan GA, Fisher M, Macleod M, Davis SM (May 2008). "Stroke". *The Lancet*. 371 (9624): 1612–23. doi:10.1016/S0140-6736(08)60694-7. PMID 18468545. S2CID 208787942.
2. Gary Martin (2009). *Palliative Care Nursing: Quality Care to the End of Life*, Third Edition. Springer Publishing Company. p. 290. ISBN 978-0-8261-5792-8. Archived from the original on 2017-08-03.
3. Hu, A; Niu, J; Winkelmayr, WC (November 2018). "Oral Anticoagulation in Patients With End-Stage Kidney Disease on Dialysis and Atrial Fibrillation". *Seminars in Nephrology*. 38 (6): 618–28. doi:10.1016/j.semnephrol.2018.08.006. PMC 6233322. PMID 30413255.
4. Feigin VL, Rinkel GJ, Lawes CM, Algra A, Bennett DA, van Gijn J, Anderson CS (December 2005). "Risk factors for subarachnoid hemorrhage: an updated systematic review of epidemiological studies". *Stroke*. 36 (12): 2773–80. doi:10.1161/01.STR.0000190838.02954.e8. PMID 16282541.
5. Feigin VL, Forouzanfar MH, Krishnamurthi R, Mensah GA, Connor M, Bennett DA, et al. (January 2014). "Global and regional burden of stroke during 1990-2010: findings from the Global Burden of Disease Study 2010". *The Lancet*. 383 (9913): 245–54. doi:10.1016/S0140-6736(13)61953-4. PMC 4181600. PMID 24449944.
6. Kidwell CS, Warach S (December 2003). "Acute ischemic cerebrovascular syndrome: diagnostic criteria". *Stroke*. 34 (12): 2995–8. doi:10.1161/01.STR.0000098902.69855.A9. PMID 14605325.
7. Shuaib A, Hachinski VC (September 1991). "Mechanisms and management of stroke in the elderly". *CMAJ*. 145 (5): 433–43. PMC 1335826. PMID 1878825.

8. Anonymous (6 December 2013). "Types of Stroke". [www.cdc.gov](http://www.cdc.gov). Centers of Disease Control and Prevention. Archived from the original on 27 June 2016. Retrieved 30 June 2016.
9. Shah AS, Lee KK, McAllister DA, Hunter A, Nair H, Whiteley W, et al. (March 2015). "Short term exposure to air pollution and stroke: systematic review and meta-analysis". *BMJ*. 350 (mar23 11): h1295. doi:10.1136/bmj.h1295. PMC 4373601. PMID 25810496.
10. Hart RG, Catanese L, Perera KS, Ntaios G, Connolly SJ (April 2017). "Embolic Stroke of Undetermined Source: A Systematic Review and Clinical Update". *Stroke*. 48 (4): 867–872. doi:10.1161/STROKEAHA.116.016414. PMID 28265016. S2CID 3679562.
11. Deb P, Sharma S, Hassan KM (June 2010). "Pathophysiologic mechanisms of acute ischemic stroke: An overview with emphasis on therapeutic significance beyond thrombolysis". *Pathophysiology*. 17 (3): 197–218. doi:10.1016/j.pathophys.2009.12.001. PMID 20074922.
12. Wilson D, Adams ME, Robertson F, Murphy M, Werring DJ (May 2015). "Investigating intracerebral haemorrhage". *BMJ*. 350(may20 10): h2484. doi:10.1136/bmj.h2484. PMID 25994363. S2CID 26908106.
13. Dupre CM, Libman R, Dupre SI, Katz JM, Rybinnik I, Kwiatkowski T (February 2014) [Available online 15 August 2013]. "Stroke chameleons". *Journal of Stroke and Cerebrovascular Diseases*. 23(2): 374–8. doi:10.1016/j.jstrokecerebrovasdis.2013.07.015. PMID 23954604.
14. Jonas DE, Feltner C, Amick HR, Sheridan S, Zheng ZJ, Watford DJ, et al. (September 2014). "Screening for asymptomatic carotid artery stenosis: a systematic review and meta-analysis for the U.S. Preventive Services Task Force". *Annals of*

Internal Medicine. 161(5): 336–46. doi:10.7326/M14-0530. PMID 25004169. S2CID 8741746.

15. Ciaccio EJ, Lewis SK, Biviano AB, Iyer V, Garan H, Green PH (August 2017). "Cardiovascular involvement in celiac disease". *World Journal of Cardiology (Review)*. 9 (8): 652–666. doi:10.4330/wjc.v9.i8.652. PMC 5583538. PMID 28932354.

16. Kyu HH, Bachman VF, Alexander LT, Mumford JE, Afshin A, Estep K, et al. (August 2016). "Physical activity and risk of breast cancer, colon cancer, diabetes, ischemic heart disease, and ischemic stroke events: systematic review and dose-response meta-analysis for the Global Burden of Disease Study 2013". *BMJ*. 354: i3857. doi:10.1136/bmj.i3857. PMC 4979358. PMID 27510511.

17. De Lima LG, Saconato H, Atallah AN, da Silva EM (October 2014). "Beta-blockers for preventing stroke recurrence". *The Cochrane Database of Systematic Reviews*. 10 (10): CD007890. doi:10.1002/14651858.CD007890.pub3. PMID 25317988.

18. Hao Q, Tampi M, O'Donnell M, Foroutan F, Siemieniuk RA, Guyatt G (December 2018). "Clopidogrel plus aspirin versus aspirin alone for acute minor ischaemic stroke or high risk transient ischaemic attack: systematic review and meta-analysis". *BMJ*. 363: k5108. doi:10.1136/bmj.k5108. PMC 6298178. PMID 30563866.

19. Jump up to: a b Kernan WN, Ovbiagele B, Black HR, Bravata DM, Chimowitz MI, Ezekowitz MD, et al. (July 2014). "Guidelines for the prevention of stroke in patients with stroke and transient ischemic attack: a guideline for healthcare professionals from the American Heart Association/American Stroke Association". *Stroke*. 45 (7): 2160–236. doi:10.1161. PMID 24788967.

20. Armstrong MJ, Gronseth G, Anderson DC, Biller J, Cucchiara B, Dafer R, et al. (May 2013). "Summary of evidence-based guideline: periprocedural management of antithrombotic medications in patients with ischemic cerebrovascular disease: report of the Guideline Development Subcommittee of the American Academy of Neurology". *Neurology*. 80 (22): 2065–9. doi:10.1212/WNL.0b013e318294b32d. PMC 3716407. PMID 23713086.
21. Ziganshina, Liliya Eugenevna; Abakumova, Tatyana; Hoyle, Charles Hv (14 July 2020). "Cerebrolysin for acute ischaemic stroke". *The Cochrane Database of Systematic Reviews*. 7: CD007026. doi:10.1002/14651858.CD007026.pub6. ISSN 1469-493X. PMC 7387239. PMID 32662068.
22. Whiteley WN, Slot KB, Fernandes P, Sandercock P, Wardlaw J (November 2012). "Risk factors for intracranial hemorrhage in acute ischemic stroke patients treated with recombinant tissue plasminogen activator: a systematic review and meta-analysis of 55 studies". *Stroke*. 43 (11): 2904–9. doi:10.1161/STROKEAHA.112.665331. PMID 22996959.