International Journal of Pediatrics and Genetics
Vol. 4 No. 04 (2026)
ISSN: 2995-5483

Examination Methods After Ischemic Stroke

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Abstrak. Vascular diseases of the brain are one of the most urgent medical and social problems. Ischemic stroke leads to long-term disability, and only a small number of patients return to work. Therefore, improving rehabilitation methods is very important. Examination after ischemic stroke is aimed at determining the type of stroke, localization of the lesion, identifying the cause, and preventing recurrence. The main examination methods include neuroimaging (CT, MRI), vascular ultrasound, electrocardiography, and laboratory tests. Rehabilitation includes physical, neuropsychological, social methods, and drug therapy, but the effectiveness of many treatments remains controversial. Quality of life is an important indicator in evaluating patient recovery. Special attention is given to patients with neglect syndrome, which complicates rehabilitation. The study analyzes the effectiveness of neurometabolic and vasoactive drugs, as well as combined rehabilitation methods, in restoring motor, sensory, coordination, and cognitive functions. Despite progress, further research is still required.

Keywords: Ischemic stroke; Examination; Neuroimaging; Rehabilitation; Quality of life; Neglect syndrome; Drug therapy; Diagnostics

Relevance. Vascular diseases of the brain are one of the most urgent medical and social problems of modern society. Cerebral stroke contributes to long-term maladaptation of patients and is the main cause of disability. There are over one million people with disabilities in our country after a stroke. Disability one year after a stroke is 76%-85%, no more than 20% of post-stroke patients return to work, and 20-30% remain severely disabled until the end of their lives. These data indicate the need to find ways to improve the rehabilitation of stroke patients. Of course, the use of various methods of physical, neuropsychological and social rehabilitation, proper care to prevent possible complications, as well as the multidisciplinary management of this category of patients significantly affects the recovery of various functions of patients after a stroke. However, according to many scientists, the timely and adequate use of medications plays an important role in the comprehensive rehabilitation treatment of patients after stroke. To improve the results of post-stroke rehabilitation, a significant arsenal of medicines is used, such as drugs that improve metabolism and plasticity of nervous tissue, cholinergic agents, drugs that normalize muscle tone, antiplatelet agents, vasoactive and other drugs. At the same time, scientists' opinions about the effectiveness of many medicines are very contradictory.

Examination after an ischemic stroke is aimed at determining the type of stroke, localization of the lesion, searching for the cause (thrombus, atherosclerosis) and prevention of repeated cases. The main methods are neuroimaging (CT/MRI), vascular ultrasound, electrocardiography (ECG) and blood tests. Basic diagnostic methods: • Neuroimaging (gold standard): o Computed tomography (CT) of the brain: Performed urgently to differentiate ischemic stroke from hemorrhagic (hemorrhage). o Magnetic resonance imaging (MRI): It is more accurate for detecting areas of ischemia (insufficient blood supply) and small foci. o CT or MR angiography: Assessment of the condition of the vessels of the brain and neck, search for blood clots, stenoses (constrictions) or aneurysms. • Vascular research: Ultrasound of the vessels of the head and neck (UZDG): Duplex scanning of the carotid and vertebral arteries to detect atherosclerotic plaques. • Cardiological examination (search for the source of thromboembolism): o Electrocardiography (ECG): Detection of arrhythmias, in particular atrial

fibrillation. o Echocardiography (ultrasound of the heart): Evaluation of the valves and chambers of the heart. Holter ECG monitoring: Daily recording to search for hidden arrhythmias. • Laboratory tests: o General blood count with platelet count and ESR. o Coagulogram: Prothrombin time, INR, APTT, fibrinogen, D-dimer (coagulation assessment). o Lipid profile: Cholesterol, LDL (low-density lipoproteins). o Blood glucose: To exclude diabetes mellitus.

WHO experts consider quality of life as an integrative subjective and objective indicator of an individual's satisfaction with their physical, mental and social functioning, as well as a reliable method for analyzing a patient's condition and the effectiveness of ongoing rehabilitation treatment. In clinical practice, as a rule, the quality of life related to health is investigated. For this purpose, both disease-specific (Newcastle stroke-specific quality of life measure, Stroke-Specific Quality-of-Life Scale, etc.) and non-specific scales and questionnaires are used in post-stroke patients. It is known that for a screening, simplified assessment of the patient's quality of life (from "as bad as possible" to "as good as possible"), some experts recommend a 10 or 100-point visual analog scale (VAS). However, other researchers point to the limitations and difficulties of using self-assessment techniques of this kind in patients with acute cerebrovascular accident. Nevertheless, the scientific literature presents cases of successful use of VAS in post-stroke patients. One of the most important and unresolved problems in the rehabilitation of patients after stroke is the recovery of patients suffering from neglect syndrome (HF), which, according to C.P. Warlow, M.S. Dennis, J. van Gijn et al. and E.A. Mishina, is one of the main factors hindering the adequate recovery of neurological functions of patients, who suffered a stroke. Thus, despite the significant efforts of the international community aimed at combating stroke and its consequences, and the significant achievements in this field, a number of questions regarding the effectiveness of various types and methods of physical, neuropsychological, drug and social rehabilitation and their combination still remain unclear and require further study. The circumstances listed above served as an incentive to carry out this study.

The work provides a detailed comparative characteristic of the effectiveness of neurometabolic brain protection drugs and vasoactive drugs in restoring motor, sensory, coordination and cognitive functions in stroke patients. For the first time, the results of a study of the effectiveness of a specially developed technology for the combined use of certain types and methods of rehabilitation of patients with ischemic stroke (IS) in relation to the recovery of patients with HF, which is one of the main constraints to effective rehabilitation, are presented. Unknown etiology, which determines the features of drug therapy, tactics for the prevention of recurrent strokes and the patient's rehabilitation prognosis. The symptoms of ischemic stroke may vary depending on the location of the lesion.

Conclusion. Ischemic stroke in the vertebrobasilar basin (i.e. in the system of the basilar artery or in the system of the posterior cerebral artery) is characterized by systemic dizziness, motor disorders (mainly according to the hemitype), unsteady gait, impaired coordination of movements, tremor of the extremities (when performing active movements), impaired sensitivity (mainly according to the hemitype), nystagmus, respiratory disorder. In ischemic stroke in the carotid basin (i.e. in the system of the anterior cerebral or middle cerebral artery), in addition to motor and sensory impairments (mainly by hematype), speech disorders (for example, dysarthria, sensory and/or motor aphasia), eye movement disorders, loss of visual fields, and gaze paresis are recorded. The following periods of stroke are distinguished: acute (the first 3-5 days), acute - up to 21 days; early recovery period - up to 6 months; The late recovery period is from 6 months to 2 years, and persistent residual effects occur after 2 years or more from the moment of the development of acute cerebrovascular accident, according to which clinicians determine the nature and scope of medical care and rehabilitation intervention.

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