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PRINCIPLES OF REHABILITATION FOR YOUNG PEOPLE AFTER ISCHEMIC STROKE (literature review)

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The article presents the basic principles of rehabilitation of young patients who have suffered an ischemic stroke. According to WHO, "...mortality from stroke continues to occupy 2nd place in the list of leading causes of death, accounting for 11% of the total number of all deaths...". Worldwide, the incidence of stroke is 10.3 million per year, with approximately 6.5–6.7 million deaths. Taking into account the above, the goal of rehabilitation is the return of the victim to social and everyday activities, the creation of optimal conditions for his active participation in the life of society. Lack of timely restorative treatment leads to irreversible anatomical and functional changes in the patient's body.

Key words: ischemic stroke, young age, rehabilitation, stages of rehabilitation, rehabilitation methods.

The article presents the basic principles of rehabilitation of young patients who have suffered an ischemic stroke. According to WHO, "...mortality from stroke continues to occupy 2nd place in the list of leading causes of death, accounting for 11% of the total number of all deaths...". Worldwide, the incidence of stroke is 10.3 million per year, with approximately 6.5–6.7 million deaths [1,2,3]. In Uzbekistan, the incidence of this pathology ranges from 1-4 cases per 1000 population. 63 thousand cases of stroke are registered annually, with 8-15% ending in death, 10-15% of patients returning to a full life and 55% remaining disabled [1,4,5]. Considering the high rates of morbidity, mortality, disability and the persistent upward trend in AI at a young age, this pathology remains one of the most pressing medical and social problems [3,6,7].

Taking into account the above, the goal of rehabilitation is the return of the victim to social and everyday activities, the creation of optimal conditions for his active participation in the life of society. Lack of timely restorative treatment leads to irreversible anatomical and functional changes in the patient's body [8].

At the same time, the conditions for the success of rehabilitation measures are:

1. Compliance with the multidisciplinary principle of managing patients who have suffered a stroke, for the implementation of which it is necessary to have multidisciplinary teams (MDTs) in acute stroke departments, inpatient, outpatient and home rehabilitation, which should unite various specialists functioning as a single team, carrying out clearly coordinated and coordinated actions, ensuring thus a problematic and targeted approach to the rehabilitation of post-stroke patients. 2. Adequate definition of treatment goals, which should be distinguished by such characteristics as goal consistency (setting treatment goals jointly by all

DHS specialists); specificity of goals (first of all, the wishes of the patient and his relatives are taken into account); realistic goals (the patient's functional state and resources are taken into account in order to avoid ambitious goals); measurability of goals (the ability for specialists to accurately say whether goals have been achieved or not); temporal certainty of goals (the period of time during which the goal will be achieved is determined): long-term goals (achieved within weeks-months), short-term goals (achieved within several days or weeks). 3. Standardized assessment of the dynamics of the patient's condition and the degree of functional recovery using various validated scales: Rivermead, Barthel, NIHSS, etc. 4. Involving the patient and his relatives in the treatment process: teaching them how to properly care for the patient; analysis of achieved goals or reasons for failure together with the patient and his relatives [5,7,9,10].

The success of rehabilitation also depends on compliance with the following rules and principles:

- It is necessary to strive to ensure that the patient spends as little time as possible lying on his back.
- If it is necessary for the patient to remain in a supine position for a short time, certain positioning rules must be followed.
- The patient should not eat while lying in bed.
- Activate the patient as early as possible - transfer to a sitting position.
- Position the patient in a bedside chair with a pillow under the elbow.
- Early transfer of the patient to an upright position.
- Determining the dominant posture in a sitting position and giving the torso motor symmetry.

A prerequisite for the rehabilitation process is maintaining a certain posture. Dominant postures can be of three types:

- Symmetrical - patient maintains alignment, slight asymmetry is allowed.
- Pull syndrome - the patient "pulls" himself to the healthy side, the predominant area of support is the gluteal region of the healthy side; often combined with hyperactivity of the healthy side.
- Push syndrome - the patient deviates and pushes his hand to the affected side, does not transfer body weight to the healthy leg when trying to verticalize it; formed in the presence of visual-spatial disorders, neglect syndrome.

Motor symmetry with different types of dominant postures is achieved as follows:

- In Pull syndrome - a decrease in muscle tone of the healthy side by smooth movements of the patient's hand with "reaching" to the affected side; in the early stages of rehabilitation, stationary support on the healthy side should be avoided when standing and walking.
- In Push syndrome, the patient develops the ability to stretch his "healthy" arm to the healthy side.

Rehabilitation of patients who have suffered a stroke takes place in 3 stages [11,12,14]:

- Stage I - during the acute period of the disease (acute period - up to 21 days) or injury is carried out in the intensive care unit and early rehabilitation wards of the neurological department of the hospital.
- Stage II is carried out in the inpatient conditions of the rehabilitation department in the early recovery period of the disease (early recovery period from 21 days to 6 months inclusive) in the presence of rehabilitation potential.
- Stage III - in the late recovery period (late recovery period - 6 months - 2 years), carried out in outpatient and sanatorium conditions.

At stage 1 they are carried out: 1. *Positional treatment* – placing paralyzed limbs in physiological positions that prevent the development of contractures, pain syndrome and the formation of "vicious postures". 2. *Therapeutic exercises* – a set of passive and active exercises combined with breathing exercises. 3. *Massage* – prescribed from the 3-4th day of illness, daily, as part of the massage-gymnastic procedure, they begin with acupressure using the inhibitory technique - for spasticity, using the tonic technique - for atonic processes, classical massage techniques. The massage should not be long, and the techniques should be performed in a gentle manner. 4. On the 8-10th day, with a stable condition, learning to sit with a gradual transfer from a horizontal to a vertical position (functional bed with a verticalizer, gradual lowering of the legs, the arm is fixed with a scarf) [11,14,15]. Next stage – learning to stand on both legs, alternating standing on a healthy and paretic leg, walking in place (support), walking with the help of rehabilitation aids. 5. *Occupational therapy* – an important stage in teaching the patient self-care, his preparation for returning to home, family and adaptation to life in "everyday life", where the skills he needs for new living conditions continue to be developed and consolidated [15,16]. 6. *Mechanotherapy* - This is a method of kinesiotherapy, which consists of performing physical exercises using special devices designed to develop movements in the joints [17,18]. 7. *Physiotherapy*. In complex treatment, patients are prescribed differentiated physiotherapy techniques [11,15,19]. 8. *Psychotherapy*. In the acute period of a stroke, both patients and their relatives need psychological help. Psychotherapy is aimed at normalizing the emotional-volitional sphere of patients, correcting behavioral disorders, irritation, weakness, etc., developing a rational attitude towards their condition and enhancing participation in rehabilitation activities. 9. *Speech therapy assistance*. A special set of exercises, the implementation of which consists of automatically repeating simple words and sounds [15,20].

Stage 2 of rehabilitation may have different options depending on the severity of the patient's condition:

• first option - the patient with complete restoration of function is discharged for outpatient follow-up treatment or to a rehabilitation sanatorium;

• the second option - patients with a pronounced motor defect, who by the end of the acute period cannot move independently and simply take care of themselves, are transferred to the neurorehabilitation department;

• third option - patients with motor defects who can move independently and take care of themselves are transferred from the neurological or neurosurgical department to a rehabilitation center.

At the second stage, rehabilitation begins with determining the rehabilitation potential, which is an indicator that evaluates the capabilities of the sick organism and the influence of various factors on the restoration of lost functions, household and professional skills and social adaptation. When assessing rehabilitation potential, three main groups of factors are taken into account: [21,22]: 1. Medical (type of cerebrovascular accident, size of the lesion and its location, severity of neurological deficit, degree of decompensation of the underlying disease, concomitant diseases); 2. Psychological (readiness and ability to participate in the rehabilitation process); 3. Social (the level of social independence of a person with disabilities is an indicator of his integration into society).

The program also includes drug therapy, psychotherapy, kinesitherapy, physiotherapy, classes with a speech therapist and other methods.

Stage III is carried out in outpatient and sanatorium conditions [11,14,15].

At the sanatorium stage they include:

Climatic therapy. Aerotherapy involves the patient staying in the fresh air and includes night and daytime sleep in the open air or in a specially equipped climatic pavilion, long stays on balconies, verandas, in the park during walking walks, health path.

Heliotherapy is carried out at REET not lower than 20–21°C, starting with 1/2 biodose with a gradual increase by 1/2 biodose every three procedures, leading to one biodose by the end of the course of treatment.

Balneotherapy. Hydrogen sulfide baths are prescribed in the form of chamber (for a paretic limb or 2–4 chamber) baths at a hydrogen sulfide concentration of 50–75–100 mg/l and a temperature of 36–37°C. General sulfide baths are prescribed only if chamber baths are well tolerated using a stepwise method with a gradual increase in the concentration of hydrogen sulfide (25–50–75–100 mg/l) and lengthening the time of taking the procedure. Radon baths are prescribed at a concentration of 60–120 nCi/l at a temperature of 36–37°C for 8–15 minutes.

Mud therapy is used mainly in the form of local applications to paretic limbs, galvanic mud therapy, electrophoresis of mud solution and mud inductothermy, carried out according to generally accepted methods.

Physiotherapy: medicinal electrophoresis; diadynamo and amplipulse therapy; electrical stimulation; inductothermy; DMV therapy; magnetic therapy; ultrasound therapy; acupuncture/

At the outpatient stage it is carried out [11,14,15,23]:

Social and everyday adaptation:

• information and consultation on issues of social and everyday rehabilitation of the patient and his family members;
• teaching the patient self-care;
• adaptation training for the patient's family;
• adaptation of living quarters to the needs of the sick and disabled;

• training the sick and disabled person in the use of technical means of rehabilitation (creating the patient's everyday independence);
• provision of technical means of rehabilitation;
• audiovisual technology;
• typhlotechnics (allows you to replace missing vision with other types of sensitivity and sharpen the perception of the outside world).

Social and environmental rehabilitation:
• conducting socio-psychological and psychological rehabilitation (psychotherapy, psychocorrection, psychological counseling);
• providing psychological assistance to the family (teaching life skills, personal safety, social communication, social independence);
• assistance in solving personal problems;
• legal advice;
• training in leisure and recreation skills.

Vocational rehabilitation:
• career guidance (professional information, career counseling);
• psychological correction;
• training (retraining);
• creation of a special workplace for disabled people;
• professional and industrial adaptation.

The results of the effectiveness of the rehabilitation measures taken are assessed according to the classification of outcomes of recovery after stroke, which includes 5 grades:
1st grade – complete restoration of ability to work, everyday skills and social activity;
2nd grade – return to previous work with restrictions, some restrictions on everyday opportunities;
3rd grade - the ability to work is lost, the ability to perform previous household duties is significantly limited, almost all types of social activity are reduced;
4th grade – significant dependence in daily life;
5th grade – complete loss of self-care, complete dependence on others.

Thus, the problem of rehabilitation of post-stroke patients is very relevant. In this regard, according to the European Consensus Statement on Stroke, the main goal over the next decade is to achieve functional independence in "activities of daily living" after 3 months in more than 70% of patients who survive the acute phase.

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