

MODERN APPROACHES TO REHABILITATION OF PATIENTS AFTER STROKE THE THESIS

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In recent decades, the prevalence of cerebrovascular diseases, including strokes, has been increasing, remaining a leading cause of disability in elderly individuals [4, 46]. Within a year after a stroke, approximately 30% of patients lose the ability to live independently [14, 47]. One of the priorities of healthcare in Russia is to slow the growth of disability through the development of rehabilitation, including neurorehabilitation.

Neurorehabilitation is a dynamic process aimed at restoring the patient's physical, cognitive, emotional, and social functioning [33]. It requires a multidisciplinary team, selection of appropriate rehabilitation tools, and pharmacological support.

After a stroke, most patients develop a complex neurological deficit, and recovery relies on neuroplasticity — the ability of nervous tissue to reorganize, which supports the restoration of motor and cognitive functions, memory, and skills [2, 8]. Cognitive impairment limits patient engagement in rehabilitation and reduces quality of life, while a higher cognitive status contributes to better recovery [13, 35, 45].

Cognitive rehabilitation accelerates information processing, helps patients understand their preserved functions, and improves adaptation. Neurotrophic drugs (cerebrolysin, citicoline, actovegin, mexidol) may facilitate recovery, although evidence remains limited [42].

In Russia, rehabilitation after stroke follows a three-stage system:

Acute stage (Stage I) — vascular departments; primary assessment of cognitive functions (MMSE, MoCA, clock drawing test, verbal associations, etc.) and initiation of treatment if deficits are identified.

Early recovery period (Stage II) — specialized inpatient care; reassessment, prescription of neuroprotective, cholinergic, and glutamatergic drugs, and cognitive rehabilitation (training, biofeedback, TMS).

Late recovery period (Stage III) — outpatient clinics and rehabilitation centers; continuation of pharmacological treatment and cognitive rehabilitation.





Cognitive function assessment uses MMSE, MoCA, tests for frontal lobe dysfunction, standardized neuropsychological evaluation by A.R. Luria, and other methods requiring a neuropsychologist's involvement [10, 12, 19].

Thus, functional recovery after stroke is a complex process requiring an understanding of the mechanisms of cognitive deficits to develop effective treatment and rehabilitation strategies.

Results. The distribution of identified brain infarcts according to vascular territory, lateralization, and side of lesion is shown in Table 1. In both groups, strategic zones corresponded to the territories of the middle and posterior cerebral arteries. The severity of cognitive impairment before memantine treatment was similar in both groups across all scales (Table 2). Moderate cognitive impairment (MCI) predominated in both groups.

Three months after starting the neurorehabilitation program with Acatinol Memantine, patients in Group 1 showed a reduction in cognitive deficits, although the difference was not statistically significant, likely due to the small sample size ($p > 0.05$). At six months, cognitive improvement became significant ($p < 0.05$). No significant changes were observed in Group 2 (Table 3).

Significant differences between groups were observed: in Group 1, improved cognitive function was accompanied by increased engagement in rehabilitation and higher motivation for therapy in the long-term period after stroke — six months later, as shown by CGI scores completed by relatives or caregivers.

Thus, inclusion of Acatinol Memantine in the cognitive rehabilitation program after acute cerebrovascular events may enhance not only cognitive function but also patient motivation for active participation in rehabilitation. However, large-scale randomized clinical trials are needed to reliably assess efficacy and determine optimal therapeutic doses.

Conclusion. Rehabilitation of patients with complex neurological deficits after stroke requires a multi-stage, highly professional system considering clinical features and continuity of care. Special attention should be given to cognitive recovery using modern therapeutic methods (sessions with a neuropsychologist, EEG-based biofeedback training) and effective drugs such as memantine, which enhance patient engagement in rehabilitation.

Key principles of managing patients with post-stroke cognitive impairment:

Knowledge of predictors (stroke in strategic brain zones, pre-stroke memory and attention deficits, comorbidities);

Early detection using MMSE, MoCA, clock drawing test, and timely initiation of rehabilitation;





Multidisciplinary approach with neuropsychologist involvement;
Comprehensive cognitive rehabilitation methods, including remote sessions;
Use of modern effective drugs, such as Acatinol Memantine, to correct post-stroke cognitive deficits.

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