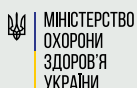


# IV НАЦІОНАЛЬНИЙ КОНГРЕС ФІЗИЧНОЇ ТА РЕАБІЛІТАЦІЙНОЇ МЕДИЦИНИ

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# ЗБІРНИК ТЕЗ

**IMPROVEMENT OF PHYSICAL  
REHABILITATION OF PATIENTS  
WITH ISCHEMIC STROKE TAKING  
INTO ACCOUNT PATHOGENETIC  
MECHANISMS OF ITS OCCURRENCE**

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**Introduction.** Ischemic stroke (IS) is one of the significant social and medical problems in Ukraine and the whole world. About 140,000 cases of strokes occur in Ukraine annually. 40% of people with a stroke die within 30 days. In our country, twice as many patients die of stroke compared to the countries of Western Europe. The creation of a state stroke treatment program will be one of the focuses of the Ministry of Health of Ukraine in the coming years. Despite the theoretical achievements in medicine, the clinical issue of ischemic stroke remains an unsolved problem. It is known that thrombolysis and thromboextraction are performed in developed countries only in 10-15% of patients with IS, which leads to improvement of the results of treatment of this contingent of patients by only 20-30%.

**The purpose of the study.** To determine the peculiarity of the interdisciplinary approach in the rehabilitation of patients after an ischemic stroke, taking into account the dynamics of sanogenesis.

**Materials and method.** Analysis of Ukrainian and foreign scientific literature and generalization of modern recommendations for effective rehabilitation of patients after ischemic stroke, taking into account the dynamics of sanogenesis.

**Results.** In our opinion, until now, the lack of a systemic vision of this pathology is an important shortcoming of solving the ways of effective rehabilitation of patients after a stroke. It is obvious that one of the important reasons for the delay in the development of this area of medicine is the narrow specialization and insufficient communication of specialists of experimental and clinical medicine in the study of stroke problems. Today, we have a number of issues of the pathophysiology and pathomorphology of post-stroke ischemia and neuroinflammation studied in detail, but the main effective clinical direction of stroke treatment, as we can see, remains only at the level of eliminating mechanical obstruction to vascular blood circulation in a certain part of patients. As for physical rehabilitation, the generalized principles of this direction (early start, stages, complexity, systematicity and feedback with the patient and his environment) are still not well specified and adapted to the modern understanding of the mechanisms of sanogenesis IS. And the past general position of rehabilitology about the main components of sanogenesis: restitution, regeneration, compensation, immunity and microcirculation, do not quite coincide with the dynamics of sanogenesis in IS.

Therefore, a promising direction for improving the treatment and rehabilitation of IS stroke patients today is the systematic integration of fundamental achievements in the study of the pathogenesis and expediency of all links of the sanogenesis system in acute cerebral blood circulation disorders, in particular in atherothrombotic IS.

From the point of view of the systemic integration of the achievements of IS clinical pathophysiology to improve the rehabilitation of patients, we consider it expedient to further interdisciplinary consideration of a number of such debatable issues.

Firstly, Consider the most common form of atherothrombotic IS not as a vascular disease, but as a vascular complication of the metabolic syndrome. As you know, the metabolic syndrome now includes hypertension, abdominal obesity, insulin resistance or type 2 diabetes, dyslipidemia, and gout. Metabolic syndrome takes its most persistent and widespread form during the period of reduced sexual





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function in individuals with a genetic predisposition and an unhealthy lifestyle. These disorders arise due to a change in steroidogenesis towards the synthesis of corticosteroids mainly at the age of 50-70 years. Therefore, people with metabolic syndrome are more sensitive to stress and vascular complications. The biological effects of hypercorticism also include blood hypercoagulation, osteoporosis, low-intensity persistent inflammation, etc. Therefore, all these clinical manifestations of the metabolic syndrome occur with atherothrombotic IS, and they are not comorbid diseases. And the most sanogenetically directed method of treatment of metabolic syndrome is timely physical therapy as prevention of its vascular complications. After 70 years, the function of the adrenal glands gradually decreases, but the occlusion of the vessels remains due to the formed atherosclerosis.

Secondly. The introduction into practical medicine of the achievements of fundamental science about the post-stroke process, which includes: a) the state of the penumbra, when the organism's sanogenetic reaction to the area of brain ischemia occurs (interpretation of apoptosis and the formation of the infarct nucleus as a forced, but appropriate reaction of microglia); b) neuroinflammation, which has 3 stages for the restoration of biological homeostasis through the elimination of the focus of necrosis, reparative regeneration, neoplasticity and restoration of functions.

The third. Decide on the tactics of treating patients within the limits of the «therapeutic window» to extend its time, the possibility of collaterals (supporting metabolism due to oxygenation, water-electrolyte balance, acid-base balance, the use of physiotherapy for energy support) or, conversely, the transition to hypometabolism due to hypothermia, blocking of intracellular Ca<sup>2+</sup> transport, glutamate excitotoxicity, oxidative stress.

The fourth. Determine the directions and tactics of treating neuroinflammation during its three phases: inflammation, regeneration, and restoration of functions. Take into account that pro-inflammatory cytokines contribute to the activity of phagocytosis and lead to suppression of other functions of the body that are not involved in its maintenance. Among the means of physical therapy at this time, sanogenetically directed magnetic-laser anti-edema therapy, respiratory gymnastics and passive physical exercises are appropriate. Thus, the logical path to reparative repair and restoration of CNS function in post-stroke neuroinflammation should be medication and physical measures aimed at successfully completing its first phase, which can last up to 10-14 days.

Fifth. Based on fundamental studies of phases 2 and 3 of post-stroke neuroinflammation in patients with metabolic syndrome, improve the use of physical therapy for more effective rehabilitation.

**Conclusions.** Our analysis of modern experimental and clinical achievements in the study of stroke allows us to draw a conclusion about the need for interdisciplinary scientific consideration of the problem of rehabilitation of this contingent of patients.

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