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MAGNESIUM IN CLINICAL PRACTICE OF DISEASES OF THE NERVOUS SYSTEM

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Abstract: To date, a large number of publications are devoted to the study of the action of magnesium in clinical practice for the prevention and treatment of pathologies of various systems and organs. Particular attention of the world scientific community is drawn to the role of magnesium as one of the key factors in the treatment of diseases of the nervous system. It has been established that this circumstance is directly related to the deficiency of this macroelement in most neuropsychiatric disorders, including depressive and anxiety states, stroke, convulsive syndromes, and also autonomic dysfunction syndrome.

Keywords: magnesium, macronutrient deficiency, nervous system, nervous system pathology, depression

Magnesium affects the functional state of almost all organs and systems. Moreover, in clinical practice, the doctor often faces the negative consequences of a lack of magnesium in the body, which are expressed in a particular disease of the nervous system.

An analysis of a number of studies [1, p.122] is devoted to the use of magnesium-containing drugs for various pathologies, which were accompanied by a subjective feeling of anxiety and chronic stress. The intake of magnesium in 46 patients over the age of 70 years at a dose of 500 mg per day for 2 months significantly reduced the concentration of cortisol and an increase in the concentration of renin in the blood serum, as well as significantly reduced the severity index of insomnia, which convincingly proves the positive effect of magnesium in anxiety states.

The research results show the ability of magnesium in brain injuries to affect all the primary elements of the post-traumatic pathophysiological cascade, including sharp depolarization of neurons, the release of exciting neurotransmitters, ionic shifts, and changes in cerebral blood flow [2, p.152].

Despite significant progress in the treatment of depressive conditions, known in the modern world as the diagnosis of a depressive episode, resistance to traditional treatment is growing annually. Modern antidepressants have a positive therapeutic effect in only half of patients, and this is without taking into account side effects and the development of drug dependence. Numerous data confirm that in many cases the incidence of depressive and neurological disorders, such as myopathies and neuropathies are directly related to magnesium deficiency [3, p.412], Which forces clinicians to turn their attention to this macroelement again [4, p.551].

In the studies of Tarleton et al. [5] demonstrated the results of the use of the oral form of the magnesium preparation for 6 weeks in patients with mild or moderate depression. The authors noted the effectiveness of action and good tolerance of magnesium, which indicates an improvement in the symptoms of the disease by 5.5 points according to the results of PHQ-9 (Patient Depression Questionnaire-9) and a decrease in the manifestations of anxiety disorders by 4 points on the scale of Generalized Anxiety Disorders-7. It is established that after the end of the drug, the effect persists for 2 weeks.

Randomized placebo-controlled studies demonstrate the effectiveness of intravenous administration of magnesium sulfate in ischemic stroke, which reduces the severity of its manifestations and limits the focus of brain damage [6, p.413]. According to the

results of C. Yang studies conducted among 17133 patients who died from a stroke in the period 1989-1993, it was noted that an insufficient amount of magnesium in drinking water leads to an increased incidence of stroke.

Magnesium has established itself as an effective drug for diseases of the peripheral nervous system. In the studies of O.V. Novikova showed a significant effect of magnesium orotate when stopping night cramps in the leg muscles [7, p.91]. During the study, 23 out of 25 patients who used magnesium orotat in the complex treatment of neurological diseases recorded a decrease in the severity of manifestations of irritative muscular-tonic syndromes along with improved sleep. Orotic acid, as an endogenous metabolite in our body, is a precursor of the pyrimidine bases necessary for the synthesis of nucleic acids and ATP. Therefore, the use of organic magnesium salts allows not only to enhance the positive effect of this combination, but also to reduce side effects. In a number of works, the neuroprotective, anabolic, and detoxifying effects of orotic acid are noted, which contributes to the improvement of such cognitive functions as the memory and learning process [7, p. 92, 8, p.1271].

The results of a clinical meta-analysis of 603 patients who took magnesium orotat at a dose of 1878 ± 823 mg / day for 4-6 months allow us to reliably judge a decrease in the frequency of dizziness by 72%, the development of autonomic dystonia syndrome by 92%, headaches, including the number of morning ones by 84%. These facts allow us to argue about the undeniable effectiveness of magnesium orotate in the treatment of pathology of the autonomic nervous system and open up broad prospects for its use in neurological practice [8, p.1272].

Thus, a deficiency or disturbance of magnesium metabolism in the body leads to the development of numerous complications, including the appearance of neuropsychiatric diseases. Numerous publications with the results of clinical studies indicate a positive effect after taking magnesium preparations in the treatment of diseases of the nervous system.

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