



## NEUROHUMORAL ASPECTS OF TRIGEMINAL NEURALGIA

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**Relevance of the topic.** Trigeminal neuralgia is the most common and best known type of prosopalgia. In terms of frequency of occurrence, trigeminal neuralgia is second only to facial nerve pathology, accounting for 7-12% of all cases of facial pain. The high incidence of the disease, the intensity of the pain syndrome, the complexity of diagnosis and treatment, especially in outpatient practice, determine the significance of this pathology, both in scientific and practical terms (Vein A.M., 1994-1998; Karlov V.A., Savitskaya O.N., 1980-1990; Yakhno N.N., 1998; Loeser J.D., 1998). Over the past decades, numerous studies have been conducted on various aspects of trigeminal neuralgia, but this problem still has many controversial and unresolved issues related primarily to its main sections - etiology, pathogenesis and principles of therapy. Thus, all pathophysiological components of the pain syndrome remain undisclosed, in particular, there is no consensus on the significance of neurohumoral processes and the role of immunological reactions in the implementation of the algic phenomenon (Grechko V.E., 1990 - 2001; Osipova V.V., 1998; Sweet J., 1999; Mathew N.T., 2002). As a consequence of insufficient study, there is often low efficiency of the treatment, therefore, trigeminal neuralgia is characterized by the formation of chronic and resistant forms of the disease (Luzin M.N., 1990 - 2002; Prithoi R; 1998; Talasko N., 2001).



Continuation of the study of the pathogenesis of trigeminal neuralgia, the search for and testing of new methods of correction, optimization of therapeutic effects seem relevant, which created the prerequisites for conducting this study.

**Purpose of the study.**

The purpose of this work is to improve the quality of diagnosis and treatment of patients with trigeminal neuralgia based on the study of the neurohumoral and immunological features of the disease.

Research objectives.

1. Based on a comprehensive examination, identify the features of the clinical manifestations of trigeminal neuralgia in patients with different course of the disease. 2. To study the state of general and local immunity in patients with trigeminal neuralgia and its dynamics during pathogenetic treatment.

3. To study the state of the opioid and sympathoadrenal systems, as well as the level of prostaglandins of group E in trigeminal neuralgia.

4. To develop a comprehensive treatment program for patients with trigeminal neuralgia based on the obtained research results.

5. To evaluate the effectiveness of the developed comprehensive treatment programs in patients with trigeminal neuralgia.

Scientific novelty of the study.

We have clarified the mechanisms of pain formation in patients with trigeminal neuralgia, for the first time revealed the dependence of the nature of the course and severity of the disease on changes in the cellular and humoral immunity system, hormonal spectrum and the content of a number of biologically active substances. For the first time, a close relationship between the state of the immune status and changes in the metabolism of neurotransmitters in patients with trigeminal neuralgia has been shown. The presence of a disorder in the synthesis of prostaglandins of the E series and the state of the sympathoadrenal system in trigeminal neuralgia has been established.



For the first time, a method of complex pathogenetic therapy has been developed, substantiated and applied for the treatment of patients with trigeminal neuralgia. The method is based on the use of drug therapy, including drugs for normalizing the functional state of the central trigeminal structures, psychopharmacotherapy, antihypoxants and vascular therapy, angioprotectors and neurometabolites, immunocorrective therapy of local and general immunity, acupuncture, measures for oral sanitation, rational psychotherapy, which made it possible to influence various links in the pathogenesis of the disease. For the first time, accessible summary indicators have been proposed that allow us to evaluate the immediate results of therapy for trigeminal neuralgia, to clarify the significance of negative predictors of therapy effectiveness for this pathology - the dynamics of the visual analogue scale (VAS) and the results of the "quality of life" test. Practical significance.

The new data obtained on the mechanisms of pain formation in patients with trigeminal neuralgia, changes in the cellular and humoral immunity system and the content of a number of biologically active substances allow us to objectify the diagnosis and can be used as a basic component in the development of individual programs of complex treatment.

The use of complex treatment programs developed on the basis of the obtained examination results helps to improve the quality of treatment of patients with trigeminal neuralgia.

Key provisions submitted for defense.

1. Patients with acute paroxysmal and chronic variants of the course of trigeminal neuralgia are characterized by differences in metabolic shifts: in the paroxysmal course of the disease, there is activation of the opioid, sympathoadrenal systems, arachidonic acid metabolism along the cyclooxygenase pathway towards the formation of prostaglandins of the E series, while in the chronic variant of the course, inhibition of prostaglandin production is observed. 2. In trigeminal



neuralgia, there is a change in the immune status of patients in the form of activation of local immunity with an increase in secretory immunoglobulin A and selective immunodeficiency in the peripheral blood.

3. Between the indicators reflecting the state of the immune system, sympathetic-adrenal and opioid systems in patients with trigeminal neuralgia, there are correlation relationships, indicating a close relationship between the studied processes that carry out metabolic, regulatory and adaptive functions and the state of which obviously affects the nature of the course of the disease and the severity of the pain syndrome.

4. The effectiveness of the treatment of patients with trigeminal neuralgia is based on the use of complex programs, including the use of psychopharmacotherapy, immunomodulators, reflexology while monitoring the indicators of the immune system and neurohumoral indicators.

#### PRACTICAL RECOMMENDATIONS.

1. To diagnose trigeminal neuralgia, a comprehensive examination is required, with mandatory testing of the level of (3-endorphin, PGE, the hormonal spectrum of the pituitary-adrenal and sympathoadrenal systems, and testing of humoral and cellular immunity.

2. Improving the effectiveness and quality of treatment for patients with trigeminal neuralgia is based on the use of comprehensive treatment programs developed based on the results of the examination.

3. When assessing the effectiveness of treatment in patients with trigeminal neuralgia, it is advisable to include the "quality of life" test in the complex of clinical examination methods, since the test result is a summary indicator reflecting changes in the patient's social self-esteem as a result of treatment.

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