

REFERENCES:

1. Bartusik D, Aebisher D. ^{19}F applications in drug development and imaging - a review. *Biomedicine and Pharmacotherapy* 2014; 68(6):813-17.
2. Bartusik, D, Aebisher, D. Multinuclear Magnetic Resonance Evaluation of Tumor Tissue. *Journal of Applied Biomedicine* 2015; 13(2): 69-78.

*Ivanyts'ka O., Ivanyts'kiy I.,
Rybalov O., Avetikov D.
Higher State Educational Establishment
of Ukraine «Ukrainian Medical Stomatological
Academy», Poltava*

SOME CLINICAL AND FUNCTIONAL FEATURES OF TRIGEMINAL NEURALGIA

The relevance of the problem of studying the trigeminal neuralgia (TGN) of peripheral genesis is explained by the current tendency to a steady increase in the number of patients seeking medical help due to sensitivity disorders in the maxillofacial area [2]. Severe clinical manifestations of TGN in the form of attacks of spontaneous, intense, firing pain in the zones of innervations of the trigeminal nerve deprive patients of the opportunity to work, significantly reduce their quality of life and can cause serious mental disorders [1, 3]. In addition, despite the presence of a significant arsenal of methods and ways of treatment, it is necessary to note a rather low effectiveness of TGN and a high incidence of relapses [4, 5, 6]. Therefore, the development of effective methods for the treatment of TGN requires a detailed study of its pathogenesis and clinical manifestations, especially in cases of prolonged course.

The aim of our research was to study comprehensively the features of clinical and functional manifestations in peripheral neuralgia of the trigeminal nerve in case of its prolonged course.

Objects and methods of the research. Our research was based on the results of examination of 35 patients with TGN (24 women and 11 men) aged from 42 to 75. The

duration of the disease exceeded 4 years. All patients were examined jointly by neurologists and dentists. In-depth study of the patients' dental and neurological status included assessment of pain sensations by the visual analogue scale (VAS), determination of the Green-Vermillion hygienic index, papillary-alveolar (PMA) index by C. Parma, periodontal index (CPITN). Clinical examinations were supplemented with magnetic resonance imaging of the brain and electromyography of the proper muscles of mastication.

Results of our own research. All patients, as the main complaint, reported unilateral paroxysms of acute, sharp, burning pain in the zone of innervation of the second and / or third branches of the trigeminal nerve, which occurred spontaneously or as a result of stimulation of the trigger zones. In 23 patients (65,7%) pain was localized to the right, in 12 (34,3%) – to the left.

The study of the history of trigeminal neuralgia showed that 11 patients (31.4%) believed that emotional stress was caused as a result of both social and psychological factors (family and professional disorders, the presence of severe concomitant diseases, the loss of relatives, etc.). Seven people (20%) associated development of the disease with dental manipulations (local anesthesia, tooth extraction, inadequate prosthetics), 4 (11.4%) - with maxillo-facial trauma, other patients (13 persons - 37, 2%) could not explain the occurrence of the disease for any particular cause. After the first manifestations of the disease, the patients repeatedly sought medical assistance from various specialists, but the results of their previous treatment were not sufficiently effective. A significant number of patients with a history of life had previous surgical interventions in the maxillofacial area, frequent colds and general concomitant diseases, as hypertension, ischemic heart disease, diabetes mellitus, stomach ulcer and duodenal ulcer, which, in our opinion, could contribute to a more severe course of TGN.

In the neurological examination of the symptoms of focal lesion of the nervous system was not detected. In the 16 patients (44.7%), the defeat of the second and third branches was detected; in 11 cases (31.4%) only the third branch was involved in the pathological process; in 8 patients (22.9%), changes were observed mainly in the second branch trigeminal nerve. Attention was paid to the behavior of the patient when

the physician attempted to irritate the trigger zone. Patients sharply evade the doctor's hands, avoiding touching the trigger zone.

The duration of attacks ranged from a few seconds to 1-3 minutes. The intensity of such pain was 7-10 points by VAS. In addition to paroxysmal pain, 22 patients (62,9%) noted the presence of a “tightening” sensation in the muscles, amplified by emotional stress and local hypothermia and mild pain between paroxysms on the “affected” side, which they rated at 3-4 points by VAS.

In these patients, in the area of the proper chewing muscle on the side of TGN, a painful “tight cord” was detected, while pain on the affected side decreased with stretching of the muscles. The clinical presentation of the disease in these patients was accompanied by symptoms of muscular dysfunction, and secondary functional changes in the temporomandibular joints.

In the study of dental status in 19 patients (54.3%), abnormalities of bite and location of individual teeth were established, and 11 patients (31.4%) had secondary adenia. The presence of a carious process and its complications was noted in all patients. The incongruence of orthopedic structures to the requirements imposed on them, recorded in 14 patients (40%). The results of studying the dental status of patients with TGN revealed unsatisfactory hygienic state of the oral cavity and the presence of periodontal diseases. This can be explained by the fact that these patients, in order to prevent pain paroxysm often abstain from dental treatment, also avoid active tooth brushing and take caution with solid food, which causes disrupted self-cleaning of the oral cavity. In this case, exactly the diseases of the maxillofacial region act as a factor that can complicate the course of TGN.

The results of EMG of the proper chewing muscles made it possible to establish the absence of significant changes in electromyograms in patients with TGN, which manifested itself exclusively in paroxysmal pains. As for patients with secondary myofascial pain syndrome, they had a decrease in the amplitude of bioelectric activity on the side of neuralgia and an increase in amplitude on the opposite side.

In our opinion, during the attack of TGN as a result of the sensorimotor reflex, there is a spasm of chewing musculature. Meanwhile, patients' attempts to be as

cautious as possible with the “affected” side, so as not to provoke an attack during chewing, explains that the spastic activity of the masticatory muscles appears against a background of permanent hypofunction. This type of activity affects the muscles and promotes the development of degenerative changes with the formation of typical muscle nodules. In this case, the functions of chewing, swallowing and speech are almost completely performed by the muscles of the opposite side.

Obtained data revealed several features of clinical-functional display of trigeminal neuralgia in case of its long duration. In future, this will make it possible to develop treatments that can adequately influence the main elements of the pathological process. It will help to develop the comprehensive treatment of patients with painful syndromes of the face, including correction of the dental status and normalization of the tone of the masticatory muscles.

REFERENCES:

1. Bangash T.H. Trigeminal Neuralgia: Frequency of Occurrence in Different Nerve Branches / T.H. Bangash // *Pain* – 2011. – №1 (2). – P. 70-76.
2. Montano N. Advances in diagnosis and treatment of trigeminal neuralgia // N. Montano, G. Conforti, R. Di Bonaventura, M. Meglio, E. Fernandez, F. Papacci // *Ther. Clin. Risk. Manag.* – 2015.– 24 (11). – P. 289-299.
3. Hargreaves K. M. Orofacial pain / K.M. Hargreaves // *Pain* – 2011 – №152 (3) – P. 25–32.
4. Hrytsay N.M. Neyrostomatolohiya / N.M. Hrytsay, N.O. Kobzysta. – K.: Zdorov'ya. – 2001. – 144 s.
5. Shah S.A. Trigeminal neuralgia: analysis of pain distribution and nerve involvement / S.A. Shah, N. Murad, A. Salaar, A. Iqbal // *Pakistan Oral Dent J.* – 2008. – №28 (1). – P. 37–41.
6. Skrypnikova T.P. Proyavy neyrostomatolohichnykh zakhvoryuvan' u shchelepno-lytseviy dilyantsi, trudnoshchi diahnostryky, likuvannya / T.P. Skrypnikova, L.YA. Bohashova, A.I. Pan'kevych // *Novyny stomatolohiyi* – 2012. – №3. – С. 17-18.