

COMPREHENSIVE TREATMENT OF ARTHROSIS OF THE TEMPOROMANDIBULAR JOINT

F. A. Khamitova

Z. D. Rakhimova

Bukhara State Medical University

Department of Surgical Dentistry

Treatment of osteoarthritis of the temporomandibular joints (TMJ) is one of the problems in orthopedic dentistry. This pathology accounts for 60-70% of all joint diseases [1]. Currently, treatment of TMJ arthrosis is carried out in various directions. Some clinicians [4,5] consider orthopedic treatment as the main pathogenetic method of treating TMJ arthrosis, since it is aimed at normalizing the position of the lower jaw, eliminating deformation of the occlusal surface of the dentition and premature occlusal contacts, restoring partial or complete defects of the dentition, and restructuring the bite. Other authors [1,2] believe that the treatment of TMJ arthrosis cannot be limited or focused only on the elimination of occlusive predisposing factors. It is necessary to improve joint function, stimulate metabolic processes in cartilage and bone tissue, normalize intraosseous and regional blood flow, and eliminate pain. However, physical therapy did not always give the expected results. For the treatment of deforming osteoarthritis of the TMJ [6], drug and physiotherapy treatment has been proposed. But at the same time, there was an allergic reaction to medications or refusal to use them according to indications, unstable therapeutic effect, relapses of the disease, long-term treatment. In order to eliminate the load on the articular surfaces of the TMJ [3, 5], a therapeutic mouth guard was used with subsequent orthodontic reconstruction of the dentition. Along with the existing conservative treatment, surgical methods of treatment were also used — arthrocentesis with intraarticular lavage and arthroscopy with the removal of exostoses on the surface of the articular head [3]. After surgical interventions, complications were observed: damage to the facial nerve, formation of hematomas, and incongruous scars. In this regard, it became necessary to develop new approaches to the treatment of TMJ arthrosis.

The purpose of this study is to compare the results of complex treatment of deforming TMJ arthrosis against the background of the use of transcranial electrical stimulation (TES therapy) with traditional methods of treatment of this pathology.

Material and methods: Studies were conducted in 42 patients with deforming TMJ arthrosis. The age of the patients ranged from 18 to 75 years. The main group included 22 patients, including 19 (86%) women and 3 (14%) men, who were treated with TES therapy. The comparison group consisted of 20 patients: 18 (90%) women and 2 (10%) men who underwent traditional treatment using medications and well-known physiotherapeutic methods of treatment. The control group consisted of 10 practically healthy people without TMJ pathology. An immunological blood test to detect the level of serum cytokines — interleukins (IL)-1 β , -6, -10 and β -endorphin was performed on an ANTHOS analyzer (Austria) using VectorBest test kits (Russia); Peninsula Laboratories, LLC (USA). Venous blood sampling in patients was carried out before treatment, on days 3, 6 and 9. TES therapy was performed using the Transair-01 device (St. Petersburg). The first session of TES therapy lasted no more than 30 minutes, at a current strength of 0.5 mA. Subsequent sessions of 40 minutes each. The current strength was increased by 0.3 mA with each session. By the 10th session of TES therapy, the current strength was adjusted to 3 mA.

Results and discussion After the diagnosis of "deforming osteoarthritis of the TMJ", a mouth guard was made and fixed, increasing the bite by 2-3 mm, on the upper or lower jaw. The mouth guard was recommended to be worn day and night for 1-2 months. From the very first days after the fixation of the mouth guard, TES therapy was prescribed for 10-15 sessions. To relieve severe pain syndrome, TES therapy was prescribed 2 times a day, morning and evening for a week, bringing the current strength to 3 mA. In addition, the patient was prescribed therapeutic myohymnastics and mechanotherapy before opening his mouth within the physiological norm (40-42 mm). Evaluation of the concentration of proinflammatory cytokines showed, that with deforming arthrosis of the TMJ, there is a significant increase (10 times) in the concentration of proinflammatory IL-6 relative to the average age range, and the serum concentration of IL-1 β corresponds to the control. In the dynamics of traditional therapy and TES therapy of the disease, a unidirectional decrease in the concentration of IL-6 was revealed, but it was more pronounced with testotherapy (see the table). On the 9th day after TES therapy, the IL-6 content was 9.56 ± 1.13 pg/ml versus 4.35 ± 0.38 pg/ml in the control, and at the same time after traditional therapy - 15.44 ± 1.83 pg/ml. TES therapy normalizes the initially low concentration of anti-inflammatory IL-10 by the 9th day of follow-up, while with traditional therapy it remains almost 5 times lower than normal at all times after that. Computed tomography of the TMJ performed in 40 patients with deforming TMJ arthrosis showed that TES

therapy improves the processes of reparative tissue regeneration. When comparing the data obtained, the proposed treatment method showed a significant advantage over the methods used to treat TMJ arthrosis.

Conclusion Thus, myogymnastics and mechanotherapy make it possible to restore the degree of mouth opening to the physiological norm. The use of a relaxing, uncoupling mouth guard, which increases the bite by 2-3 mm, creates conditions for diastasis between the articular surfaces of the TMJ and normalization of the position of the articular heads in the articular pits. TES therapy has an immunomodulatory, analgesic, anti-inflammatory effect, improves bone regeneration. The immunotropic effects of testotherapy consist in a decrease in the initially high concentration of proinflammatory IL-6, an increase in the concentration of anti-inflammatory IL-10, as well as an adequate increase in the concentration of β -endorphin. The proposed method of complex treatment of deforming arthrosis without the use of drugs is more effective than known methods of treatment of this pathology, which allows to reduce the rehabilitation period of patients by 2 times.

REFERENCES:

1. F. A. Khamitova, & Z. D. Rakhimova. (2024). Features of the use of platelet autoplasm in the treatment of dysfunction of the temporomandibular joint. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 4(1), 20–23. Retrieved from <https://inovatus.es/index.php/ejmmp/article/view/2296>
2. Artikovna, Kh. F. (2023). Biochemical Blood Indicators in Temporomandibular Joint Pain Dysfunction Syndrome. Research Journal of Injury and Disability Studies, 2(5), 180–184. Retrieved from <http://journals.academiczone.net/index.php/rjtds/article/view/870>.
3. Artikova, K. F. (2023). Diagnostics and Complex Treatment of Pain Dysfunction Syndrome of Temporomandibular Joint. Modern Journal of Social Sciences and Humanities, 16,43–46. Retrieved from
4. Artikovna, Khamitova Firuza. "Improving the Complex Treatment of Deforming Arthrosis of the Temporomandibular Joints." Central Asian Journal of Medical and Natural Science 4.5 (2023): 701-704. <https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/1894>
5. Vertkin A.L., Talibov O.B. Treatment of osteoarthritis: the role of chondroprotectors. Attending physician 2000; 9: 40-43.
6. Kostina I.N. Clinic, diagnosis, treatment of early stages of osteoarthritis of the temporomandibular joint: Abstract. diss. ... candidate of Medical Sciences. Yekaterinburg 2002; 22.