DYNAMICS OF ELECTRODONTODIAGNOSTICS INDICATORS IN THE PROCESS OF COMPLEX TREATMENT OF MANDIBULAR FRACTURES

Introduction: The proportion of fractures of the bones of the maxillofacial region is steadily increasing and averages 6-8% of the total number of injuries. In turn, fractures of the mandible prevail in the structure of injuries of the maxillofacial region. Often, with fractures of the lower jaw, the lower alveolar nerve is damaged, which leads to various degrees of paresthesia and disruption of the innervation of the dentition. These requires improvement of treatment plan especially drug therapy.

Most doctors limit themselves to prescribing analgesic and nonsteroidal anti-inflammatory drugs. There are also often cases of self-treatment when patients take various medications (mainly antibiotics, calcium-containing drugs, etc.) without taking into account the indications and individual dosage of the drug. At the same time, an integrated approach to the approach of management tactics of these groups of patients is important, based on a special specific clinical situation.

The purpose of this study was to assess the effect of Traumel® S on electrododontodiagnosics (EOD) indicators the healing process of fractures of the mandible.

Materials and methods. 68 patients (47 (69.1%) men and 21 (30.9%) women aged 18 to 65 years) with mandibular fractures were treated in the department of maxillofacial surgery of the Tashkent State Dental Institute. Mostly patients aged 30-39 years prevailed (34 (50%) people).

Depending on the type of complex of therapeutic measures carried out, patients were divided into 3 groups by random sampling: 1st group – 20 patients – treatment included the reposition of fragments, immobilization, osteosynthesis, if necessary, and traditional drug therapy (with a solution of furacillin in a dilution of 1:5000). Drug therapy included, according to indications, taking antibiotics, probiotics, sulfonamide preparations, analgesics, desensitizing drugs; 2nd group – 18 patients – treatment included the reposition of fragments, immobilization, osteosynthesis, if necessary, and traditional drug therapy and taking the active calcium preparation A.A.G. (Active Asia Gold, Uzbekistan) 1 tablespoon 3 times a day, the course of treatment – 1 month; 3rd group – 30 patients – treatment included the reposition of fragments, immobilization, traditional drug therapy, as well as the administration of the drug Traumel® S (Biologische Heilmittel Heel, Germany) in the form of injections (2.2 ml) 1 time a day for 5 days. Depending on the place of injection, this group was divided into two subgroups: 3a – 15 patients, into the mucous membrane in the projection of the fracture line; 3b – 15 patients, intramuscularly.

The control group included 20 people without injuries of the maxillofacial region, somatically healthy without pathology of the central and peripheral nervous system.

EOD of the teeth of the upper and lower jaw with preserved pulp in the area innervated by the damaged nerve and on the healthy side were carried out using the EOD – Pultest-Pro IVN-1 apparatus (Russia). Values were obtained before and a month after treatment. Statistical data analysis was carried out using the StatSoft Statistica 6.0 program.

Results. EOD on the day of admission was performed on all teeth in patients with fractures of the lower jaw, except for teeth in the fracture gap, which were removed according to indications, depulpated, as well as covered with artificial crowns of teeth.
With EOD of the lower dentition, the following types of dental sensitivity disorders were identified in fractures of the lower jaw: isolated (increased excitability threshold of 1-2 teeth – damage to the neurovascular bundle of the tooth) and multiple (increased excitability threshold of more than 2 teeth – damage to the lower alveolar nerve). In isolated disorders of sensitivity, the EOD of teeth in the fracture gap showed an increase in the threshold of excitability to $110.35 \pm 4.22$ CU, adjacent teeth – to $89.18 \pm 3.18$ CU.

With multiple sensitivity disorders, the following data were obtained: on the healthy side, with a pronounced displacement of bone fragments of the damaged side, an increase in the threshold of excitability of teeth to $41.05 \pm 0.85$ CU was determined; with a slight displacement of fragments or in its absence, normal indicators were obtained – within $17.38 \pm 1.42$ CU.

The average EOD index of teeth of patients of the 1st group before treatment was $109.89 \pm 2.88$ CU, after traditional therapy – $85.92 \pm 2.55$ CU. After treatment, EOD indicators improved by 21.8%, but at the same time in 14 (70%) patients the parameters exceeded normal values. The results of repeated EOD a month after the traditional treatment showed that in 6 (30%) patients the indicators returned to normal, in 9 (45%) – an increase in the threshold of excitability remained, in 5 (25%) – there was no positive dynamics.

Thus, the indicators of electrical excitability of teeth in patients with fractures of the lower jaw after traditional treatment decreased slightly, but exceeded normal values, which indicates a persistent violation of the sensory function of the lower alveolar nerve.

The average EOD of the teeth of patients of the 2nd group at the time of hospitalization was $110.92 \pm 1.28$ CU, after treatment – $70.24 \pm 1.15$ CU. After treatment, EOD indicators improved by 36.7%, but at the same time in 12 (66.7%) patients, the indicators exceeded normal values. With repeated EOD of patients of the second group a month after treatment, it was revealed that in 6 (33.3%) patients, the indicators returned to normal, in 7 (38.9%) – an increase in the threshold of excitability remained, in 5 (27.8%) – there was no positive dynamics.

The average EOD of the teeth of group 3a patients at the time of hospitalization was $118.95 \pm 2.81$ CU, after treatment – $55.28 \pm 1.04$ CU. After treatment, EOD indicators improved by 53.5%, but at the same time in 5 (33.3%) patients, the indicators exceeded normal values. Repeated EOD of group 3a patients a month after treatment showed that in 10 (66.7%) patients, the indicators returned to normal, in 4 (26.7%) – an increase in the threshold of excitability remained, in 1 (6.6%) – there was no positive dynamics.

The average EOD of the teeth of patients of group 3b at the time of hospitalization was $115.33 \pm 2.58$ CU, after treatment – $60.08 \pm 1.12$ CU. After treatment, EOD indicators improved by 47.9%, but at the same time in 8 (53.3%) patients, the indicators exceeded normal values. The results of repeated EOD of group 3b patients a month after treatment showed that in 7 (46.7%) patients, the indicators returned to normal, in 6 (40%) – an increase in the threshold of excitability remained, in 2 (13.3%) – there was no positive dynamics.

**Conclusion.** The EOD values obtained a month after the start of treatment indicated a positive effect of injections of the drug Traumel® S on the restoration of sensory function of nerve fibers damaged during fracture. The data obtained indicate a more pronounced positive effect of Traumel® S injections into the mucous membrane in the projection of a fracture compared with intramuscular injection.

**References:**