DENSITOMETRY PARAMETERS AS A INDICATOR OF MANDIBULAR FRACTURES HEALING AND EFFECTIVENESS OF COMPLEX THERAPY WITH A HOMEOPATHIC DRUG

Introduction: According to various authors, the frequency of fractures of the lower jaw currently ranges from 70 to 85% of the total number of injuries to the bones of the facial skeleton. Despite the continuous improvement of the complex treatment of mandibular fractures, the frequency of inflammatory complications remains high and reaches an average of 37%. 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.

Thus, the issues of further improvement of methods of treatment of facial skull injuries, in particular fractures of the mandible, are relevant, due to their significant frequency and difficulties in choosing the optimal tactics of patient management. 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 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.

Orthopantomography (Fona XPan DG Plus), if necessary, obtaining sighting images using a visiograph (PROX), echosteometry (“EOM-02”) were included to determine the dynamics of changes in bone density in the fracture zone. Statistical data analysis was carried out using the StatSoft Statistica 6.0 program.

**Results.** With densitometry of the fracture slit, the optical density index was on average 91.8±8.58. The optical density index of intact bone tissue was on average 135.2±14.5. According to the formula, the average optical density index on the day of admission was equal to: $I = 0.67±0.2$. A month after the injury, the optical density in the fracture area was on average equal to 110.8±8.56 in patients of the first group, 120.5±6.21 – in the second group, 128.9±9.34 – in group 3a and 121.3±7.88 – in 3b groups. This parameter of intact bone tissue was on average equal to 135.8±15.22. The formula was used to determine the average values of the optical density index (I) a month after the injury: 1st group – 0,82±0,2; 2nd group – 0,89±0,1; 3a group – 0,95±0,2; 3b group – 0,92±0,1.

According to the data obtained, the highest rates of densitometry were achieved in patients of group 3a. Similar values were recorded in patients of groups 2 and 3b, while the lowest bone density was observed in patients who received traditional drug therapy.

Monitoring of the dynamics of changes in bone density at the fracture site was carried out using echosteometry. According to the data obtained, the speed of ultrasound passage through the area of the lower jaw with a fracture was maximized in all observed groups. The most rapid recovery of indicators occurred in patients of the 2nd and 3rd groups, whose echosteometry values were as close as possible to the density of the intact bone tissue of the lower jaw 4 weeks after the injury: 1st group – 2120 m/s, 2nd group – 2398 m/s, 3a group – 2424 m/s, 3b group – 2196 m/s (normal bone – 2483 m/s).

**Conclusion.** Thus, the inclusion of the homeopathic drug Traumel® S in the complex treatment contributes to acceleration of the consolidation of fragments and restoration of bone density to normal parameters, prevention of inflammatory complications. The inclusion of the active calcium preparation A.A.G. also had a positive effect on the dynamics of changes in densitometry indicators. 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:**

