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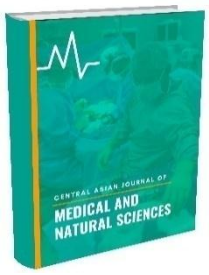

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Optimization of the Correction of Post-Implantation Complications using Homeopathic Remedies

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Abstract: Today, absolute and relative contraindications to dental implantation are already well known. These include diseases such as insulin-dependent diabetes mellitus, severe hypertension, diseases of the oral mucosa, and others.

Keywords: dental implantation; homeopathic remedies; Traumeel S; mucositis; complication; anti-inflammatory drugs .

Introduction. Today, absolute and relative contraindications to dental implantation are already well known. These include diseases such as insulin-dependent diabetes mellitus, severe hypertension, diseases of the oral mucosa, and others [4, 7, 10]. In these and many other diseases and pathological processes, the risk of unsuccessful implantation is associated with the following reasons: insufficient general and local immune protection; violation of microcirculation in the tissues of the oral cavity, osteoporosis, causing violations of the biomechanical relationship of the implant-jaw - implant-jaw orthopedic design [1,6]. Of the various factors affecting the effectiveness of dental implantation, an important role belongs to the biocenosis of the oral cavity, the state of which is often associated with the presence of concomitant somatic pathology in patients [1, 3, 8]. In order to prevent complications during dental implantation, various methods are used [5]. They include preventive measures to comply with asepsis and antisepsis, the use of antibiotic therapy in the postoperative period, membranes that prevent the ingrowth of the epithelium, surface treatment, which improves osseointegration [2,9].

The aim of the study. Development of an algorithm for preventive measures taken by patients with general somatic pathology before dental implantation, and its evaluation according to the criteria of clinical, economic efficiency and safety

Materials and research methods. Treatment and observation of patients with complications after dental implantation was carried out on the basis of the Department of Advanced Training of Orthopedists of the Tashkent State Dental Institute.

Materials for the study were the results of 80 patients, including 34 men and 46 women with diagnoses of "Peri-implantitis" and "Mucositis" aged 19 to 65 years. The diagnosis was made according to the classification of complications at various stages of dental implantation using radiographic criteria for assessing the severity of the complication in compliance with ethical standards and rules.

Criteria for inclusion in the study: availability of voluntary informed consent, age from 19 to 65 years, verified diagnosis and severity of complications.

The exclusion criteria were: refusal of the patient to participate in the study, blood diseases, infectious diseases (HIV, hepatitis, etc.), aggravated allergic history, decompensated general somatic diseases (including cardiovascular pathology), early period of chronic diseases, period pregnancy and breastfeeding, malignant neoplasms, mental disorders.

All patients were divided into 2 groups: group 1 - the main one (42 patients), who will use the developed method of dental implantation using the DICOM program to prevent early (hematoma, bleeding, soreness) and late (peri-implantitis, mucositis) complications using homeopathic drug Traumeel S.

Group 2 - comparison group (38 patients), who will use the standard method of dental implantation using data processing programs. Ketorol Pro, a non-steroidal anti-inflammatory drug, was used to prevent both early and late complications.

Research results. The characteristics of the pain syndrome in patients who completed the surgical stage of dental implantation included a dynamic assessment of the frequency, severity and duration of complications.

The distribution of patients with peri-implantation mucositis by age and gender is presented in Table. 1.

Table 1. Distribution of patients with peri-implantation mucositis by age and gender.

Pol	19-30	31-50	51-60	Total
men	4	5	6	15
women	3	12	9	24

The distribution of patients with dental peri-implantitis is presented in Table 2.

Table 2. Distribution of patients with dental peri-implantitis.

Pol	19-30	31-50	51-60	Total
men	5	6	8	19
women	2	13	7	22

Among patients with peri-implantation mucositis, women aged 31-50 years (30.7%) significantly prevailed $\chi 2$ (Wilconson's test) = 6.23, $p<0.05$.

Among patients with dental peri-implantitis, women aged 31-50 years significantly prevailed (31.7%) $\chi 2=5.972$, $p<0.05$.

In patients of the main group, after dental implantation, a course of electrophoresis was performed on the 2nd-3rd day of the postoperative period of pain in 13.6% of patients, and in a mild form; only 1 patient (2.4%) indicated the presence of severe pain.

5-7 days after the operation, mild pain persisted in 10.8%. After 8-10 days, only 1 patient complained of "trace" sensations of pain in the surgical area.

In patients of the control group, pain syndrome 2-3 days after the operation of dental implantation significantly ($p<0.01$) manifested itself more often in 76.5% of patients than in the main group, and in the vast majority of patients (73.4%) there were strong and moderate pain. By 5-7 days of the postoperative period, the frequency of detection of pain syndrome decreased by 26.6%, and in the structure of the pain syndrome in 53.2% of patients by this time, mild and moderate forms were detected equally often (26.6% each). After 8-10 days of dental implantation, 9.5% retained a mild pain syndrome, in 2 patients (5.3%) moderate pain radiating along the branches of the trigeminal nerve, pain in the area of implantation in the lower jaw persisted throughout the entire period. weeks after implant placement.

Every second of the patients in the control group with a moderately severe pain syndrome was forced to change their "pain" behavior by taking an analgesic (Ketonal), limiting functional loads, oral hygiene, and the usual diet.

Significantly less frequent occurrence, more pronounced manifestation, duration and active positive restructuring of the pain syndrome, noted in the early postoperative period in the main group, within the given study design, objectified the pronounced analgesic effect of ultraphonophoresis.

During a dental examination on the first day of the post-implantation period, 9 patients (21.4%) of the main group in the area of dental implantation showed severe hyperemia of the mucous membrane and edema. Soft tissue edema and associated asymmetry of the face on the side of implantation and difficulty in opening the mouth were detected in isolated cases (1 patient; 2.4%). On the 3rd day of the post-implantation period, there was a significant decrease in edema and hyperemia in 93.4% of patients.

Insignificant bleeding in the area of implantation and sutures, more often occurring after mechanical impact (brushing teeth, eating), was noted in 13.5% of patients. The hemorrhagic symptom was of a transient nature, completely resolved in 2-3 days after the operation. In 2 patients of the main group, the appearance of postoperative hematomas of the oral mucosa, limited to the area of one dentogingival segment, was noted, which was associated with the trauma of the operation.

On the 5th day of the implantation period, all patients of the main group (100%) showed complete leveling of hyperemia and mucosal edema.

In turn, 82.1% of patients in the control group on the 2-3rd day of the postoperative period noted local inflammation (edema, hyperemia) in the area of implantation - signs of mild/moderate perimucositis (46.8% and 21.4%, respectively). Bleeding of the oral mucosa in the area of implant placement was detected in 57.6% of patients; 12.5% revealed the formation of serous fibrinous plaque in the suture area. The frequency of moderate-to-severe mucositis detected in 5 (13.16%) patients, in terms of the area of implantation was 21.4%.

The phenomena of mucositis in 20.6% of cases of implantation were combined with mild or moderately pronounced edema with facial asymmetry, difficulty opening the mouth. By the 7th day of observation, moderately pronounced swelling of the soft tissues of the face persisted in 1 patient (2.6%). Bleeding of the mucosa in the implantation zone by day 8 was stopped in all patients, in 6.2% of patients, surgical wounds healed by secondary intention.

In patients of the control group, postoperative hematomas of the oral mucosa and facial skin developed significantly more often ($p<0.01$) (35.7%) than in the main group, and the lesions were more extensive and often persisted up to 5 days after surgery.

Paresthesia on the skin in the chin area, which persisted for more than 5 days, was noted only in patients in the control group.

Many patients in the control group (65.6%) had bad breath in the early postoperative period. The symptom of halitosis was detected in 64.7% of patients in the control group on the 3rd day after dental implantation, more often it was accompanied by symptoms of inflammation of the mucosa in the area of implantation (mucositis) with edema, hyperemia, the appearance of fibrinous plaque in the area of the sutures, developed against the background of difficult hygienic care for oral cavity.

On fig. 1. There is a sharp decrease in hyperemia and edema in the area of dental implantation already from the 4th day of the post-implantation period against the background of the use of ultraphonophoresis.

Fig. 1. The average dynamics of the severity of hyperemia and edema in patients of the main group in the post-implantation period in the area of dental implantation.

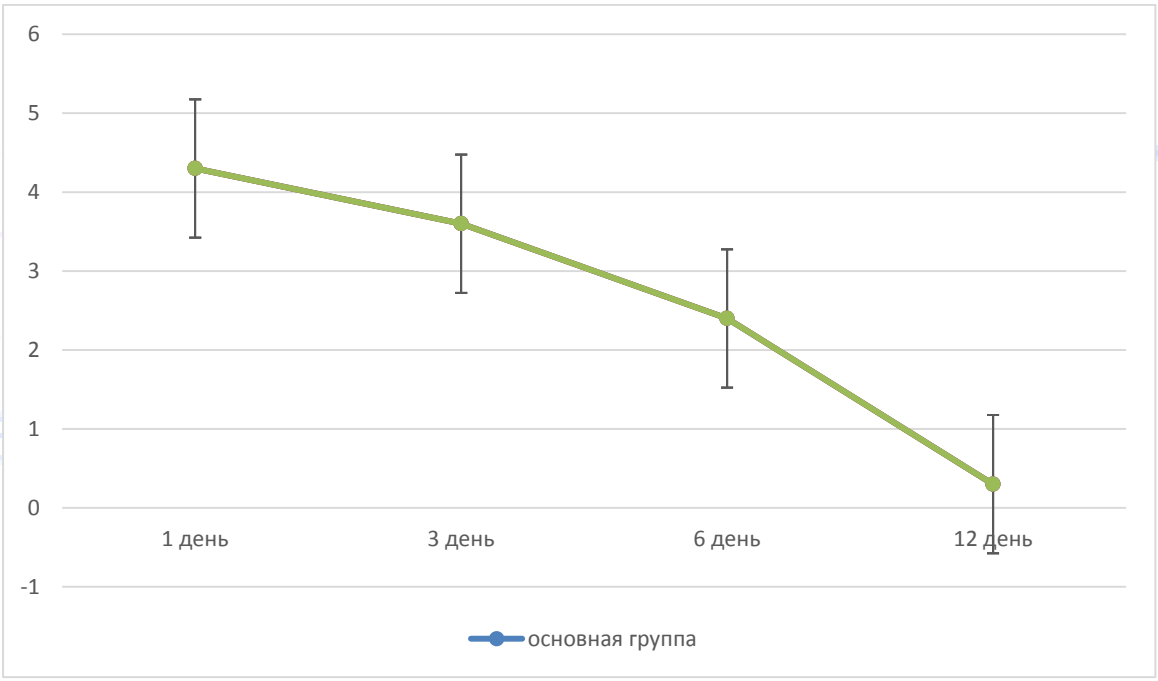
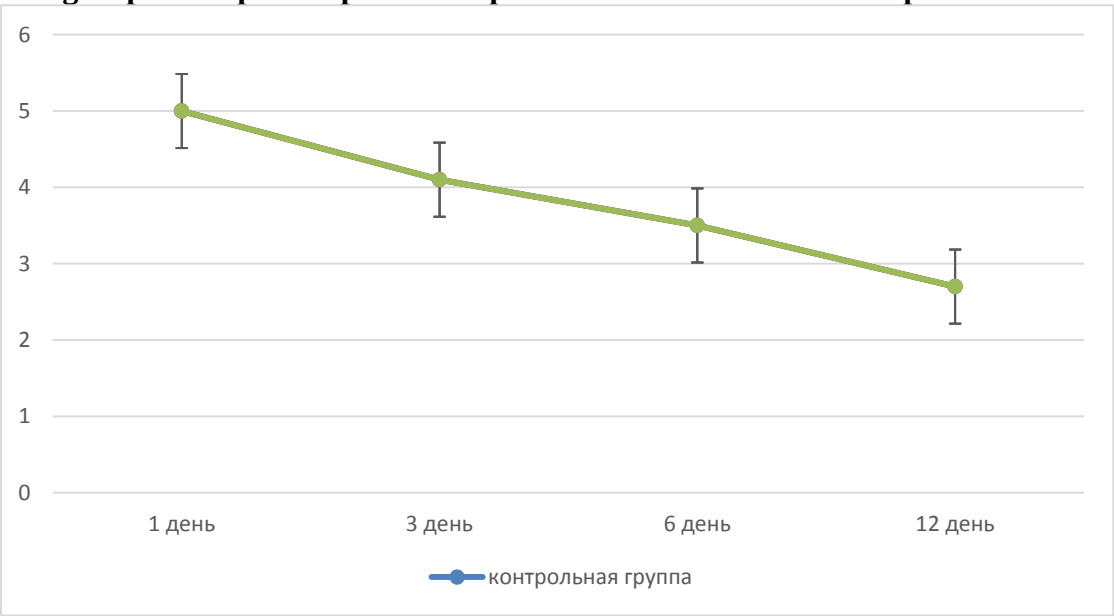


Fig. 2. The average dynamics of the severity of hyperemia and edema in patients of the control group in the post-implantation period in the area of dental implantation.



When assessing the primary stability of the implant, their distribution differed in patients of the main and control groups. So, in the main group, the index of normal distribution in the main group was 0.03065, in the control group - 0.54612.

The ISQ index in patients of the main group, in whom the standard protocol was supplemented with ultraphonophoresis, was 64.481±3.142 units, and in patients of the control group, the ISQ value was 58.792±2.863 units.

All initially recorded indicators of the primary stability of implants in the main group fit into the range of "adequate" or "excellent" stability according to A.R. Saadoun.

At the same time, in none of the patients of the main and control groups, the primary ISQ coefficient was lower than 50 units, predicting favorable outcomes of implant treatment.

It was assumed that the secondary stability of the implant, determined after their opening, largely depended on the initial ISQ indicators and reflected the nature of bone tissue remodeling around the implant. At the opening stage, all implants installed in patients of the main group were clinically stable, which correlated with indicators of secondary stability. Evaluation of the normality of data distribution in terms of the secondary stability of the implant necessitated the use of nonparametric statistical methods

Findings. Assessing the immediate and long-term results of the treatment of postoperative complications in the main group, those who took Traumeel S as an anti-inflammatory drug in comparison with the control group after 6 months, the PMA indicator decreased by more than 4 times in the main group. X-ray data of the examination of patients of the main group confirmed that after 3-4 months, bone trabeculae formed at the site of the bone defect, and after 5-6 months, the boundaries of the bone defect practically did not differ from their own bone tissue ($p \leq 0.05$, $\chi 2=0.4956023$, $U=0.9610294$).

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