Assessment of the Effectiveness of Alendronic Acid in Dental Implants

1. Ismatov Farrukh Aslidinovich
2. Umarova Yulduz Asliddin kizi

Abstract: The normal functioning of bone tissue is provided by the balance between the interrelated processes of bone resorption and bone formation, neogenesis. Bone remodeling depends on the balanced work of osteoclasts and osteoblasts, adequate mineralization, and is controlled by a variety of factors, both systemically and locally, such as hormones, cytokines, and growth factors. Disturbance of bone tissue metabolism and predominant resorption processes result in osteopenia and osteoporosis accompanied by loss of support, protective and depositing functions of bone tissue.

Key words: bone tissue, dental implants, alendronic acid.

Introduction. The normal functioning of bone tissue is especially important for rapid bone repair and osseointegration of dental implants and their effective functioning. Therefore, the question is often raised about the necessity of so called pharmacological support of dental implants, i.e. use of drugs providing accelerated bone recovery and osteointegration, increased bone quality, especially in patients with the presence of osteoporosis or its increased risk. Experimental studies provide a convincing rationale for the use of different bone metabolic regulators to improve implant performance. However, clinical studies are scarce. There are many pharmacological agents that provide inhibition of bone resorption (calcitonin, bisphosphonates), activation of mineralisation (calcium salts), bone formation (fluorides), or have a polymodal effect on resorption and bone formation (vitamin D, ossein-hydroxyapatite complexes). Most of them are effectively used in the pharmacotherapy of osteoporosis and for prophylactic purposes.

The aim of the research: To evaluate the effectiveness of alendronic acid in dental implantation and ascertain the nature of its effect on indicators of bone tissue metabolism.

This work was carried out using clinical material. During the period from 2021 to 2023 we examined and treated 151 patients aged 20-67 years with primary and secondary adentia: males - 44 (29.1%), females - 107 (70.9%), with tooth loss lasting from 1 to 25 years. A controlled trial was conducted to assess the effectiveness of alendronic acid as a "pharmacological support" agent for dental implants, in which an open, sequential (alternating) allocation of patients to the comparison or main group (quasi-randomised method) was observed.
Osteogenon (Pierre Fabre, France) was used as a prophylactic agent in a daily dose of 1600 mg (800 mg in the morning and in the evening) for 30 days before surgery, which was carried out not later than 2-3 days after taking the drug. Thus, the course dose of the drug was 48000 mg.

The age and sex structure of patients in the comparison group and in the main group, as well as peculiarities of the surgical intervention are presented in Table 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abs.</td>
<td>%</td>
</tr>
<tr>
<td>Comparison (n = 75)</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Basic (n = 76)</td>
<td>23</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 1 shows that the study groups were homogeneous with regard to gender and age. The comparison group was awaiting surgery after the examination and did not receive any drug preparation. Patients in the main group received alendronic acid as described above for 30 days before surgery.

**Conclusions:** Prophylactic administration of alendronic acid in the course of preoperative preparation provides 1,7 times lower incidence of postoperative peri-implantitis and unsuccessful outcomes (incidence of peri-implantitis was 6,7% in comparison group and 3,9% when using "pharmacological support"). The clinical efficacy combined with the physiological effects of alendronic acid on calcium-phosphorus metabolism and bone tissue metabolism justify its use in preimplantation preparation for dental implants.

**Literature:**

2. Исматов Ф.А. Хасанова Л.Э. Стоматологический статус у студентов высших учебных заведений // Узбекистонда Илмий-Амалий тадкикотлар мавзусидаги канфренция матераллари. – 2020. – №. 22 – P. 42.


10. Исматов Ф.А. Л.Э. Хасанова, Результаты комплексного стоматологического обследования устулетов высших учебных заведений // Журнал медицина и инновации JOURNAL OF MEDICINE AND INNOVATIONS. . – 2021. – № ISSN2181-1644. – Р. 131-143

11. Исматов Ф.А. Л.Э. Хасанова, Д.Д. Ибрагимов У.Б. Гаффаров Олий таълим муассасалари талабаларининг стоматологик холатининг ўзига хос хусусиятлари // Междисциплинарный подход по заболеваниям органов головы и шеи журнал стоматологии и краниофашиальных исследований. – 2021. – Р. 6-11

12. Исматов Ф.А. Хазратов А.И. Бузрукзода Ж.Д. The main indicators of oral health in students of the city of samarkand // междисциплинарный подход по заболеваниям органов головы и шеи | 2021 | журнал стоматологии и краниофашиальных исследований – 2021. – Р. 6-11