ЎЗБЕКИСТОН РЕСПУБЛИКАСИ СОҒЛИҚНИ САҚЛАШ ВАЗИРЛИГИ

ТОШКЕНТ ДАВЛАТ СТОМАТОЛОГИЯ ИНСТИТУТИ

ГОСПИТАЛЬ ОРТОПЕДИК СТОМАТОЛОГИЯ КАФЕДРАСИ
ФАКУЛЬТЕТ ОРТОПЕДИК СТОМАТОЛОГИЯ КАФЕДРАСИ
ПРОПЕДЕВТИКА ОРТОПЕДИК СТОМАТОЛОГИЯ КАФЕДРАСИ
ОРТОДОНТИЯ ВА ТИШЛАРНИ ПРОТЕЗЛАШ КАФЕДРАСИ

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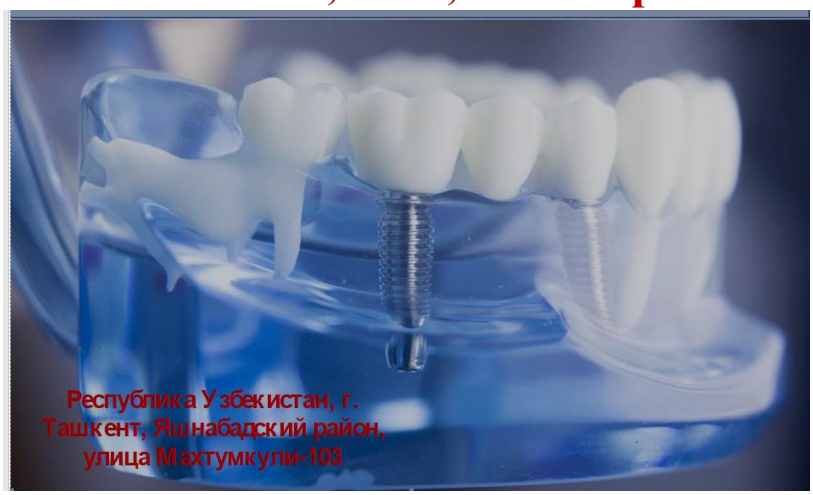

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BIOACTIVE COATING AND STERILITY: ANALYZING THE IMPLANT.UZ DENTAL IMPLANT

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Infection control procedures have become an integral part of modern dentistry and have had a huge impact on all clinical practice. There is not much current research on infection control procedures aimed at reducing the number of microbes on dental materials consisting of powder and liquid. There is also little research data on the radiation method of sterilization, which more often leads to satisfactory results.

The purpose of the study was to find the best dosage for sterilization of the domestic dental implant Implant.Uz with a bioactive coating. During the course of the study, special attention was paid to preventing the sealing of packaged test materials from breaking. After introducing the strains into Eppendorf tubes, all experimental procedures were carried out in an anaerobic chamber, which guaranteed an optimal environment for the growth of the three bacterial species mentioned above. The task was set to study the effectiveness of the procedure for radiation sterilization of dental material, consisting of powder and liquid, extracted from the original packaging, for the presence of bacteria..

Sterility studies were carried out in the management of the Tashkent Center for Sanitary and Epidemiological Welfare and the State Health Service under the Ministry of Health of the Republic of Uzbekistan. The sterility of finished medicinal products was tested by direct culture or membrane filtration method using liquid thioglycollate (mercaptoacetic) medium for the isolation of bacteria and liquid Sabouraud medium for the detection of fungi.

Determination of the number of bacteria

The sterility test is carried out under aseptic conditions, in boxes, preferably under a sterile laminar air flow, wearing sterile antistatic clothing. 2 hours before the

start of work, bactericidal lamps were turned on in the box to disinfect the air and surfaces. The air in the box was regularly checked for microbial contamination. To do this, Petri dishes with MPA, Sabouraud's medium and thioglycollate (mercaptoacetic) medium are left open for 15 minutes, then closed and kept in a thermostat at 370 C for 48 hours. There should be no more than 5 colonies on the dish; a larger number indicates high contamination of the box . There should be no mold or yeast in the air. Work in boxing is carried out in sterile gowns and slippers.

The sterilized powder was scattered over the entire surface of the dish with medium M009 at a temperature of 32 0C and M013 at a temperature of 20-22 0C and incubated for seven days, and then their contents were examined for the presence of bacteria.

To determine microbial contamination, non-injectable medicinal products are subjected to bacteriological examination to determine the amount of saprophytic bacteria, yeast and mold fungi, as well as the presence of bacteria of the Enterobacteriaceae genera, Staphylococcus aureus species, and Pseudomonas aeruginosa.

The crops were inspected daily. If there were no microorganisms in all test tubes, a conclusion was made that the dental material was sterile; if there were signs of microflora growth in the test tubes, the material was considered not sterile.

For each sample, the average number of colony-forming units (CFU) per 1 milliliter of solution (CFU/ml) was calculated. Multiple linear regressions were used to compare the effectiveness of different radiation doses. Differences at the $p < 0.05$ level were considered statistically significant.

Results of a study of the sterility of components of the domestic dental implant Implant.Uz with a bioactive coating Table 1 and 2

The results of the study revealed a significantly lower number of bacteria on samples that underwent a purification procedure of 2 * 106 rad. However, in samples with a purification dose of 1 and 1.5*106 rad, no bacteria of the genus Staphylococcus aureus were detected.

Multiple linear regression analysis did not reveal significant differences in samples having detectable bacteria after purification procedures. The level of statistical significance was 0.02. The average bacterial reduction achieved after the above cleaning procedures can be expressed as a percentage. For samples with an irradiation dose of 1*106 rad this figure was 94.4%, with an irradiation dose of 1.5*106 rad this figure was 96.2%, with an irradiation dose of 2*106 rad 100%.

Conclusions

The results of this study indicate that differences in radiation dosage affect the effectiveness of sterilization, with samples of the studied object more often showing complete absence of bacteria. The best results of sterilization efficiency were observed when using 2*106 rad radiation.

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