

## RESEARCH ARTICLE

# Prescription of antibiotics in bone augmentation with dental implant

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## Abstract

**Aim:** To evaluate the success and failure in bone augmentation with dental implant cases when antibiotics were used with different timing in long follow-up periods.

**Material and Method:** 120 patients were randomly put into three groups: (1) no antibiotic treatment (NOAB); (2) preoperative and postoperative antibiotic treatment (PPAB) with 1.5 g of amoxicillin an hour before surgery and 500 mg three times a day for five days after surgery; and (3) postoperative antibiotic coverage (POAB) with 500 mg three times a day starting after surgery and continuing for five days after surgery. We conducted a comparison and follow-up of patients to detect antibiotic responses in the context of bone augmentation and dental implants.

**Results:** We recorded highly significant differences in age groups and gender. We observed highly significant differences (0.000, 0.000, and 0.041) on the third day, the 12th week, and after six months of follow-up. The results indicated that in group 1, 7 implants (11.6%) failed, while in group 3, only 2 implants (3.33%) failed. In contrast, in group two, all implants succeeded (100%).

**Conclusion:** The use of preventive antibiotics resulted in a very low infection rate. Conversely, the absence of preventive antibiotics significantly increased the infection rate. A higher number of studies were required to analyze the biological factors that contributed to failure in the case of various antibiotic doses and types.