

EFFECTS OF TOOTHPASTE CONTAINING OXYGEN-RELEASING COMPOUND ON IMPLANT SURFACES EXPOSED TO THE ORAL CAVITY: A MORPHOLOGICAL CONTROLLED CLINICAL TRIAL

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The development of toothpaste containing molecules that reduce the biofilm formation on dental implants without degrading the titanium-based surface may help the patient to prevent the peri-implant disease progression.

Aim of the present study was to assess in vivo if a toothpaste containing an antibacterial compound with sodium perborate (AX) is able to reduce the amount of biofilm formed on implants with the rough surface exposed to the oral cavity, without affecting the morphology of the tested surface.

In this double-blind, cross-over, controlled clinical trial, 2 splints with an implant fixed on the right lingual side of the mandibular arch were prepared for 14 patients. In the first phase of the study, each volunteer received one splint, and randomly the test (with AX) or the placebo toothpaste for daily hygiene according to randomization tables and was asked to wear the splint for five days without interruptions. After this phase, the volunteers repeated the experiments with the same modality but switching the treatment. After removal, splints were processed for observation at scanning electron microscope. Morphological and semi-quantitative analyses of the plaque covering the implant surface were performed together with micro-morphological alterations of implant surface that may occur after treatment. Mann-Whitney test for paired data was applied for between group analyses.

No differences were found in the morphology and organization of the biofilm between treatment groups. The area free from biofilm resulted significantly higher for samples of the test group (AX) than for samples of the control group ($p < 0.001$). Morphological signs of micro-degradation or changes of the surface double-blind on any implant after both treatments.

The toothpaste containing sodium perborate seems to reduce the amount of biofilm adherent to the rough implant surface and formed after 5 days of exposition to the oral cavity and seems not to corrode or degrade the titanium.