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Substantivity of Hypochlorous Acid-Based Disinfectant Against Biofilm Formation in the Dental Unit Waterlines

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Abstract

Objective: The purpose of the study was to examine the substantivity of a new disinfectant against biofilm formation in the dental unit waterlines.

Materials and methods: Twenty dental units were selected for the study and divided into two groups: Group A (dental unit waterlines treated with the disinfectant) and Group B (untreated dental unit waterlines). Biofilm formation was monitored in both groups by removing the one dental unit waterline from each group for the period of 10 days. One inch of the dental unit waterline tube was cut at random site, and the inner lumen of the cut sections was analyzed using the scanning electron microscope (SEM) (TESCAN VEGA3 SBU).

Results: On examination, SEM images showed that there was no slime layer or bacterial cells seen in cut section for the period of 7 days in the treated dental waterlines, which means that there is no evident of biofilm formation. In the untreated dental unit waterline cut section, slime layer was observed from day 1.

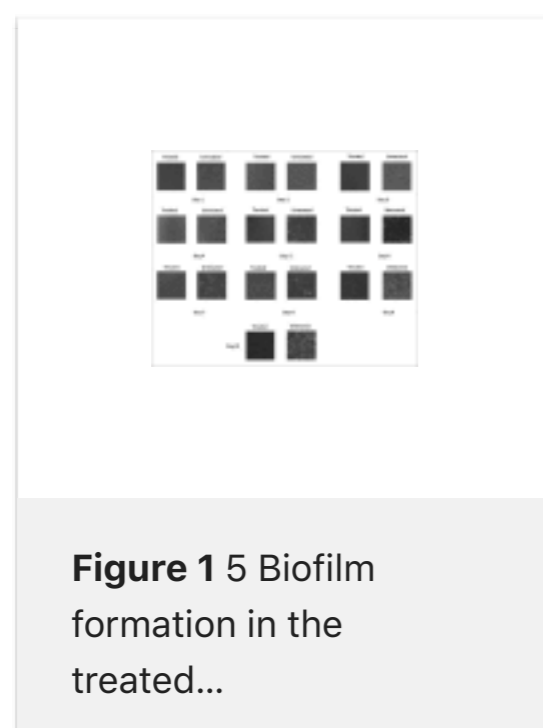
Conclusion: Disinfectant solution was proved to be effective for 7 days against biofilm formation. This technique could be used as a valid method for disinfection of dental unit waterlines.

Keywords: Biofilms; dental chair; disinfectant.

Conflict of interest statement

There are no conflicts of interest.

Figures



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