

Investigation of a novel sterilization method for biofilms formed on titanium surfaces

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(細菌汚染されたチタン表面に対する新規殺菌法についての検討)

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論 文 内 容 の 要 旨

The development of effective methods to disinfect biofilms on dental materials is medically important. This study evaluated the bactericidal effects of peroxynitric acid (HOONO_2 ; PNA) on biofilms formed on titanium surfaces. *Streptococcus gordonii* was cultured on either machined or rough titanium discs that were then used to evaluate the bactericidal effects of seven reagents, *i.e.*, normal saline, 0.025% benzalkonium chloride disinfectant solution, 0.2% chlorhexidine digluconate solution, three concentration types of PNA, and inactivated PNA. Using low concentration PNA, the bacterial count based on a CFU assay reached an undetectable level within 10 s; this bactericidal effect was the strongest observed for the seven tested reagents. Thus, PNA may be more useful than other disinfectants for sterilizing biofilms on titanium surfaces that have been contaminated with bacteria.