

The effect of various topical peri-implantitis antiseptics on *Staphylococcus epidermidis*, *Candida albicans*, and *Streptococcus sanguinis*.

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Source

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Abstract

OBJECTIVE:

Although peri-implantitis has presented an ever increasing problem in modern dentistry, satisfying therapeutic strategies or scientifically based treatment recommendations are still not available. The main object of the present study was to evaluate the antibacterial efficacy of six different topical antiseptics on three test microorganisms attached to titanium implant specimens.

MATERIAL AND METHODS:

For biofilm formation, plane titan specimens were incubated either in *Candida albicans*, *Streptococcus sanguinis*, or *Staphylococcus epidermidis* for 2h. The specimens were then treated with different topical antiseptics for 60s (sodium hypochlorite 1.0%, hydrogen peroxide 3.0%, chlorhexidine gluconate 0.2%, citric acid 40.0%, Plax, or Listerine) and with sterile saline as control. Remaining vital fungi were quantified by means of a bioluminometric assay and the bacterial load and the viability of adhering *S. epidermidis* and *S. sanguinis* by live or dead cell labelling in combination with fluorescence microscopy.

RESULTS:

Sodium hypochlorite was effective against all three species, whereas hydrogen peroxide was solely effective against *C. albicans*. CHX and Listerine showed antimicrobial activity against *S. sanguinis* and *C. albicans* and citric acid and Plax against both tested bacteria.

CONCLUSIONS:

None of the tested antimicrobial agents, except for sodium hypochlorite, showed a significant in vitro effect on all three test microbes. Considering the possible toxicity of sodium hypochlorite, none of the tested - and so far widely used - antiseptics showed any broad-spectrum antimicrobial effect and could therefore not be recommended for the topical disinfection and detoxification of infected implant surfaces.