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Efficacy of Listerine® Antiseptic in reducing viral contamination of saliva

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Abstract

Aim: The anti-viral efficacy of oral antimicrobial rinses has not been adequately studied in terms of potential clinical significance. As a follow-up to an in vitro study on the effect of oral antiseptics on *Herpes simplex* virus, Type 1, this study was undertaken to evaluate the in vivo effect of an essential oil containing oral antiseptic on the reduction of viral titer in saliva during active viral infection.

Method: Patients were recruited and evaluated in a single visit protocol at the onset of a perioral outbreak, consistent historically and clinically with recurrent *Herpes* labialis. Direct immunofluorescence of cytological smears of the lesions/oral fluids was used to confirm *Herpes simplex* virus types I or II. Patients were randomly assigned to one of two treatment groups: (1) active ingredient and (2) sterile water control. The viral lesion was evaluated as to clinical stage according to standard protocol. Salivary fluid samples were taken: (1) at baseline; (2) immediately following a 30 s rinse; (3) 30 min. after the 30 s rinse; and (4) on the repeat trial, also at 60 min. after the 30 s rinse. All samples were evaluated for viral titer and results compared.

Results: In Trial 1, the sample population consisted of 19 males and 21 females with an average age of 29.2 and in Trial 2, 21 males, 19 females with an average age of 28. In both Trials 1 and 2, recoverable infectious virions were reduced to zero after a 30 s experimental rinse; whereas, the control rinse resulted in a non-significant ($p > 0.05$) reduction. The experimental group also demonstrated a continued significant ($p < 0.05$) reduction 30 min. post rinse when compared with baseline while the control group returned to baseline levels. In Trial 2, the 60 min. post rinse follow-up demonstrated a 1–2 log residual reduction from baseline in the experimental group; however, this was not significant.

Conclusions: There is clinical efficacy in utilizing an oral rinse with the antimicrobial agent Listerine® Antiseptic in reducing the presence of viral contamination in oral fluids for at least 30 min. after oral rinse. The risk of viral cross contamination generated from these oral fluids in person to person contact or during dental treatment may be reduced.

Key words: anti-microbial oral rinse; essential oils; perioral recurrent *Herpes simplex* virus; saliva

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There are numerous sources of microbial contamination in the dental operatory. Dental unit water dispersed by three-way syringes, water coolant for ultrasonic instruments and aerosols from a patient's oral fluids produced by high-speed handpieces, represent initial sources of potentially infectious agents to the operatory. There are various methods currently being developed and in place for reduction of these sources of microbial contamination. Standard autoclaving procedures and ''standard precautions'' should preclude the transmission of potentially infectious microbial agents from these sources to the patient or to other individuals within the dental operatory. Concerning patients themselves, oral microorganisms, including numerous viral and bacterial pathogens, can potentially be mobilized into the bioaerosal by way of the high-speed manipulations of air and water in handpiece activity. This source of cross contamination has not been adequately studied to date. The anti-microbial efficacy of