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537 EVALUATION OF BACTERIAL SUSCEPTIBILITY TO DISINFECTANTS AT THE DENTAL CLINIC

*Thursday, March 22, 2012: 3:30 p.m. - 4:45 p.m.**Presentation Type: Poster Session***R.S. THONDAPU¹, K.S. RAJAPAKSHA¹, C. MIN², T. ZHU², B.J. PASTER², T. KAWAI², G. KUGEL¹, R.D. PERRY¹, and A. ALT-HOLLAND¹,**
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Objectives: To prevent nosocomial cross-contamination, disinfectants and disposable surface-protecting plastic barriers are commonly used in dental clinics. Here, we evaluated the bactericidal effect of 5 commercially available disinfectant solutions on bacteria isolated from plastic barriers at the dental clinic. ♦♦

Methods: *Bacillus infantis*, *Staphylococcus haemolyticus* and *Pantoea calida* were isolated from plastic barriers following dental procedure at Tufts School of Dental Medicine. Bacterial samples were streaked on clean plastic barriers and exposed for 30sec, 1min and 5min to aerosol spray of Cavicide (17.2% isopropanol), Micrylium (70% ethanol), OPTIM 33TB (0.5% hydrogen-peroxide), UNISEPTA Plus (55% ethanol) and PureGreen-24 (0.0003% silver ions, 4.845% citric acid) disinfectant solutions. Bacteria were transferred directly to Trypticase Soy Agar plates and incubated at 37°C for 24hr. Bacterial susceptibility to these solutions was evaluated by determining the extant of bacterial survival and growth on the agar surface. ♦♦♦

Results: We found that Cavicide, Micrylium, and UNISEPTA effectively killed *B. infantis* (a non-oral airborne bacterium) and *Staphylococcus* (an oral and skin bacterium) within 30sec to 1min of exposure. While after 5min OPTIM was relatively effective in killing *S. haemolyticus* it was less effective in killing *B. infantis*. At that time point, opposite results were obtained with the exposure of these bacteria to PureGreen-24. Micrylium was the only disinfectant that efficiently killed *Pantoea calida* (a non-oral airborne bacterium) within 30sec of exposure. After 5min of exposure, OPTIM and UNISEPTA were relatively effective in killing this bacterium, followed by Cavicide and PureGreen-24 that were less effective and did not kill all *P. calida*.

Conclusions: The evaluation of bacterial susceptibility to selected disinfectants demonstrated that overall Micrylium (70% ethanol) is the most effective disinfectant solution for killing *B. infantis*, *S. haemolyticus* and *P. calida*. Further quantitative analyses of the effectiveness of alcohol- and non-alcohol-based solutions on bacterial survival in the clinic are required. ♦

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Keywords: Bacterial, Disinfection/sterilization, Effectiveness, Evaluation and Microbiology

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