

## Microbial Alterations in Supragingival Dental Plaque in Response to a Triclosan-Containing Dentifrice

Zambon J, Reynolds H, Dunford R, DeVizio W, Volpe A, Berta R, Temprow J, Bonta Y, Oral Microbiol Immunol 10: 247-255, 1995

A total of 325 subjects, were entered into a double-blind, stratified 2-treatment clinical study that examined the effects of a dentifrice containing 0.3% triclosan, 2% Gantrez copolymer and 0.243% sodium fluoride on supragingival dental plaque and gingivitis. A subset of 159 subjects including 72 men and 87 women participated in the microbiological component of this study, which was designed to detect shifts in supragingival bacterial species in response to triclosan. Subjects were divided into two groups: one performed normal oral hygiene with the triclosan/copolymer dentifrice and a control group used a placebo dentifrice without triclosan. At baseline, 3 and 6 months during treatment and at 6, 12, 18 and 24 weeks post-treatment, supragingival dental plaque was collected from the buccal and lingual surfaces of the 4 first molar teeth and assayed for: 1) bacterial morphotypes by phase-contrast microscopy, 2) select bacterial groups and bacterial species by culture, and 3) target periodontal pathogens including *Actinobacillus actinomycetemcomitans*, *Bacteroides forsythus*, *Porphyromonas gingivalis* and *Prevotella intermedia* by immunofluorescence microscopy. There were few statistically significant differences between treatment groups in any of the 90 microbiological parameters measured at the 7 different time points. The control group demonstrated significantly higher levels of cultivable *Neisseria* and higher proportions at the 3-month treatment period of *P. gingivalis*-infected subjects and mean cells. After 6 months of treatment, the triclosan group demonstrated higher levels of fusiforms. Analysis of triclosan resistance data failed to detect a shift towards increased proportions of bacteria resistant to triclosan, and both treatment groups demonstrated triclosan-resistant strains, predominantly *Veillonella dispar*. This study confirms the microbiological safety of triclosan-containing dentifrices and suggests that continued use can be associated with beneficial alterations in the bacterial composition of supragingival dental plaque.