

The Effects of a 0.3% Triclosan-Containing Dentifrice on the Microbial Composition of Supragingival Plaque

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144 subjects completed a 6-month, double-blind study which examined the effects of a 0.3% triclosan/2% copolymer/0.243% sodium fluoride dentifrice on the microflora of supragingival dental plaque. The subjects were randomly assigned to use, in an oral hygiene program, either the triclosan/copolymer/fluoride test dentifrice or a control dentifrice. The latter had the same formulation as the test dentifrice except it did not contain triclosan. Supragingival plaque was collected from the buccal and lingual surfaces of 4 teeth at baseline, 3 months, and 6 months, and microbiologically examined by darkfield microscopy, gram stain morphology, immunofluorescence, and selective and non-selective media. Antimicrobial susceptibilities were determined by agar dilution and whole plaque susceptibility methodologies on plaque samples from 136 subjects at each of the above sample periods and at 6-week intervals for an additional 6 months post-therapy. Both dentifrices resulted in highly statistically significant reductions in the total cultivable flora obtained at both the 3 and 6-month samples relative to baseline as well as at 6 months relative to the 3-month sample. The relative decrease in total anaerobic counts and in strict anaerobes, while not statistically significant, was more pronounced at both the 3- and 6-month sample periods in subjects receiving the triclosan dentifrice than for the controls. Neither dentifrice resulted in detrimental shifts in the microbial composition of the normal flora nor led to the emergence of periodontal or opportunistic pathogens. There was no difference in the relative proportions of the microflora resistance to triclosan or in the number of subjects harboring triclosan-resistant micro-organisms regardless of whether the subjects received the triclosan dentifrice or the control. The proportion of the cultivable flora resistant to triclosan was higher at baseline than at any other sample period. This study demonstrates that the extended use of the 0.3% triclosan/ 2% copolymer/ fluoride dentifrice does not disrupt the normal microflora associated with supragingival plaque, favor the growth or colonization of periodontal or opportunistic pathogens, or promote the acquisition of microbial resistance.