Triclosan-containing dentifrice may slow periodontal disease progression

Is unsupervised use of a 0.3% triclosan/2% copolymer dentifrice effective in slowing the progression of periodontal disease in a normal adult population?

Cullinan MP, Westerman B, Hamlet SM, Palmer JE, Faddy MJ, Seymour GJ. ***The effect of a triclosan-containing dentifrice on the progression of periodontal disease in an adult population. J Clin Periodontol 2003; 30:414–419***

Design The study was a double-blind randomised controlled trail of a general population (members of which were not at risk for periodontal disease).

Intervention Subjects in the test group were given a dentifrice containing 0.3% triclosan, 2% copolymer and 0.243% sodium fluoride (Colgate Total; Colgate Palmolive, Sydney, NSW, Australia), whereas members of the control group were supplied with a placebo dentifrice identical to the test dentifrice but not containing the triclosan/copolymer. At the baseline examination, probing pocket depths (PPD) and relative attachment levels were recorded and participants were assigned to either the test or control group. Re-examinations took place after 6, 12, 24, 36, 48 and 60 months.

Outcome measures At the baseline and re-examination time points, PPD and relative attachment levels were recorded. Subgingival plaque samples were collected at each examination and assayed for *Porphyromonas gingivalis*, *Actinobacillus actinomycetemcomitans* and *Prevotella intermedia*.

Results On a population basis over a 5-year period, there was little difference in attachment level in the test and control groups. Subjects who had initial PPD $\geqslant$3.5 mm who received the test toothpaste tended to have fewer interproximal PPD $\geqslant$3.5 mm, however, and PPD reductions in sites were higher for those who had PPD $\geqslant$3.5 mm at the previous examinations ($P<0.001$). Increasing age, smoking and presence of *P. gingivalis* had significant effect on PPD reduction.

Conclusions In a normal adult population, unsupervised use of a triclosan/copolymer dentifrice tended to slow progression of periodontal disease, and for patients with periodontal disease tended to reduce PPD.

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Commentary

This 5-year, doubly blind, stratified, randomised and unsupervised trial demonstrates the benefit of the triclosan copolymer toothpaste in both the general population and patients at risk for, or with, periodontal disease (both numbers-needed-to-treat (NNT), approx. 100; see below).

Two points are remarkable here. First, classical studies indicate that in patients who have periodontal disease, only routine maintenance can slow or prevent progression. Yet here, there is a reduction in progression without maintenance. The second point revolves around the measure of benefit and value. Specifically, the study indicates that over the 5-year period about 40% of subjects in both groups displayed attachment loss — not necessarily a good outcome, but the subjects were unsupervised. On the positive side, there is approximately a 1% difference between the test and control subjects (NNT, approx. 100), a good outcome, supporting the benefit of the toothpaste.

For subjects who initially already had periodontal disease ($\geqslant$4 sites with an initial PPD of $\geqslant$3.5 mm) there were also benefits. As was the case looking at subjects, the proportion of sites that had progression of periodontal disease also increased over time, with about a 0.5% difference between the test and control sites (NNT, about 200) — again supporting the benefit of toothpaste.

How might one apply these data to patient care? The NNT for subjects was around 100. In other words, 100 patients would need to be treated with the test toothpaste for one patient to benefit, compared with use of control toothpaste. Since the test toothpaste certainly reduces periodontal risk, if the costs of the toothpastes are similar, why not use it, as no harms have been reported? On the other hand, if the test toothpaste was significantly more expensive, then one might question its value compared with professional care.

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