

Studies on the Prevention of Periodontal Diseases

Akademisk avhandling

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av

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Avhandlingen baseras på följande delarbeten:

- I. Bogren A, Teles RP, Torresyap G, Haffajee AD, Socransky SS, Lindhe J, Wennström JL. (2007) A three-year prospective study of adult subjects with gingivitis. I. Clinical periodontal parameters.
Journal of Clinical Periodontology 34:1-6.
- II. Teles RP, Bogren A, Patel M, Wennström JL, Socransky SS, Haffajee AD. (2007) A three-year prospective study of adult subjects with gingivitis. II. Microbiological parameters.
Journal of Clinical Periodontology 34:7-17.
- III. Bogren A, Teles RP, Torresyap G, Haffajee AD, Socransky SS, Wennström JL. (2007) Clinical and microbiologic changes associated with the combined use of a powered toothbrush and a triclosan/copolymer dentifrice: A 3-year prospective study.
Journal of Periodontology 78:1708-1717.
- IV. Bogren A, Teles RP, Torresyap G, Haffajee AD, Socransky SS, Jönsson K, Wennström JL. (2008) Long-term effect of the combined use of powered toothbrush and triclosan dentifrice in periodontal maintenance patients.
Journal of Clinical Periodontology (Accepted for publication).
- V. Bogren A, Teles RP, Torresyap G, Haffajee AD, Socransky SS, Wennström JL. (2008) Locally delivered doxycycline during supportive periodontal therapy: A 3-year study.
Journal of Periodontology (Accepted for publication).



Abstract

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Dental plaque contains bacteria that colonize the subgingival area and causes periodontal diseases. Effective plaque removal is therefore a key issue in the prevention of the development/progression of periodontal diseases.

The main objective of the present series of investigations was to evaluate clinical and microbiological changes/effects of various prevention means in two subject samples with diverse experience of destructive periodontal disease.

160 adult subjects without clinical signs of destructive periodontal disease and 128 patients previously treated for periodontitis and involved in regular maintenance therapy were recruited. The individuals in the two subject samples received professional prophylaxis/supportive periodontal therapy every 6 months and were followed over a 3-year period. All participants were randomized to use either powered toothbrush combined with a triclosan-containing dentifrice or manual toothbrush and a standard fluoride dentifrice. The patients previously treated for periodontitis were furthermore randomly assigned to receive i) mechanical debridement plus locally applied doxycycline or ii) mechanical debridement alone, in sites with PPD \geq 5 mm. Full mouth clinical registrations of plaque, bleeding on probing (BoP), probing pocket depth (PPD) and relative attachment level (RAL) were performed at baseline, 3 months 1, 2 and 3 years. At each examination interval subgingival plaque samples were taken at each tooth for analysis of the prevalence of 40 different bacterial species.

The subjects without destructive periodontal disease improved their clinical periodontal conditions over the 3 years with a significant reduction in BoP score and in PPD. This improvement was accompanied by a shift in the subgingival microflora to a more host-compatible microbiota. There were no differences in these respects between the two home-care programs.

The patients with a history of destructive periodontal disease showed significant reductions in BoP, PPD, and in mean counts of various bacterial species between baseline and 3 years while RAL remained unchanged. No significant differences were found in clinical or microbiological variables between the two home-care procedures. Short-term beneficial effects on clinical parameters were demonstrated with the adjunctive use of locally delivered doxycycline. Repeated application of the drug once annually had no long-term clinical or microbiological effects beyond those observed by subgingival mechanical debridement alone in this group of patients.

Key words: dentifrices, doxycycline, gingivitis, microbiology, periodontitis, prevention, randomized controlled trial, toothbrushing, triclosan

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