

Effect of herbal, essential oil, and chlorhexidine mouthrinses on the composition of the subgingival microbiota and clinical periodontal parameters.

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Abstract

OBJECTIVE:

The purpose of the present investigation was to determine if antimicrobial mouthrinses with different formulations could affect the composition of the subgingival microbiota and clinical parameters of adjacent tissues in periodontal maintenance subjects.

METHODS:

One-hundred and sixteen subjects, who had been treated for chronic periodontitis and were in a maintenance program, were randomly assigned one of four mouthrinses, to be used twice daily for three months.

The mouthrinses were herbal 1, herbal 2, essential oil, and chlorhexidine. Clinical measurements and subgingival plaque samples were taken at baseline and at three months. Plaque samples were individually evaluated for 18 test species/taxa using checkerboard DNA-DNA hybridization. Significance of differences between baseline and three months for both microbiological and clinical parameters were determined using the Wilcoxon Signed Ranks test. Significance of difference among groups for change in clinical and microbiological parameters was determined using analysis of covariance (ANCOVA), adjusting for baseline values.

RESULTS:

Shifts in species proportions differed significantly for 9/18 test species/taxa among the four mouthrinse groups. Streptococcus and Capnocytophaga species were reduced most in the herbal rinse groups, while Veillonella parvula was reduced most in the essential oil and chlorhexidine groups. Actinomyces were also markedly reduced in the chlorhexidine group. Mean Plaque (PI) and Gingival Indices (GI) were reduced between baseline and three months in each group. Results emphasize that chlorhexidine ($p < 0.001$) and herbal ($p < 0.05$) rinses significantly reduced PI. Some subjects in each group responded better than others.

CONCLUSION:

All four mouthrinses tested produced shifts in the composition of subgingival microbiota, although the results differed among the groups. The observed microbial changes were accompanied by improvements in clinical parameters in the periodontal maintenance subjects.