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Clinical and microbiological effects of probiotic lozenges in the treatment of chronic periodontitis: a 1-year follow-up study

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Abstract

Aim: The objective of this study was to evaluate the effects of lozenges containing *L. reuteri* as an adjuvant treatment to initial periodontal therapy for chronic periodontitis patients and to detect the level of *L. reuteri* colonization in the periodontal pockets of treated patients.

Material and methods: A total of 40 patients were selected and randomly divided into two groups. Each patient had at least two teeth with one

approximal site each with a probing depth (PD) of 5-7 mm and gingival index (GI) of ≥ 2 in each quadrant. Group I received scaling and root planing (SRP) plus *L. reuteri*-containing lozenges, and Group II received SRP plus placebo. The plaque index (PI), GI, bleeding on probing (BoP), PD and relative attachment level were measured. Microbiological sampling was performed at baseline and on days 21, 90, 180 and 360 and were analysed by culturing. The Bonferroni-corrected paired sample t-test, Bonferroni-corrected Wilcoxon signed rank test and paired sample t-test were used to evaluate intra-group differences. The Bonferroni-corrected Student's t-test and the Mann-Whitney U-tests were used to evaluate inter-group differences.

Results: After treatment, the measured PI, GI, BoP and PD were significantly ($p < 0.05$) lower in Group I compared with Group II at all time points. Similar observations were made for the total viable cell counts and the proportions of obligate anaerobes with the exception of day 360. In Group I, significantly fewer patients required surgery on ≥ 3 sites.

Conclusion: *L. reuteri*-containing lozenges may be a useful adjuvant agent to slow re-colonization and improve clinical outcomes of chronic periodontitis. Further studies are required to clarify the optimal dose of the lozenges.

Keywords: *L. reuteri*; Probiotics; microbiology; periodontitis; scaling and root planing.