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HUMAN RANDOMIZED CONTROLLED TRIAL

Evaluation of lozenges containing egg yolk antibody against *Porphyromonas gingivalis* gingipains as an adjunct to conventional non-surgical therapy in periodontitis patients: A randomized controlled clinical trial

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Abstract

Background

In a previous pilot study, one-time application of anti-*Porphyromonas gingivalis* gingipain egg yolk immunoglobulin (IgY) into scaling and root planing (SRP)-treated periodontal pockets showed profound improvement of clinical and bacteriological parameters in patients with chronic periodontitis. The present study aims to evaluate the efficacy of daily use of lozenges fortified with the antibody as an adjunct to non-surgical therapy in patients with periodontitis.

Methods

Sixty-four patients with periodontitis were divided randomly into a test and a placebo group. The groups were treated by SRP followed by a daily use of lozenges containing either specific IgY against *P. gingivalis* gingipains (test) or a sham-immune IgY (placebo). Gingival bleeding index (GBI), probing pocket depth (PD) and quantitation of *P. gingivalis* in the gingival pockets were assessed at baseline and 8 weeks after the initiation of treatment and compared by using Wilcoxon signed rank test, Mann-Whitney *U*-test or *t* test.

Results

Both groups showed significant improvement of all parameters at 8 weeks post treatment ($P < 0.001$). There was a significant difference in reduction of GBI ($P < 0.001$) and *P. gingivalis* cell counts ($P < 0.05$) in the test group compared with the placebo group. The reduction of PD was greater in the test group compared with the placebo group although there was no statistically significant difference between the two groups.

Conclusions

The adjunctive use of lozenges containing IgY antibody against gingipains from *P. gingivalis* resulted in clinical and microbiological benefits in the treatment for chronic periodontitis. Additional investigations are needed to examine if the IgY brings benefits to case patients who do not receive SRP.

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