

Clinical Evaluation of a Periodontal Paste Containing 8% Arginine and Calcium Carbonate and Er:YAG Laser for Dentine Hypersensitivity Treatment in Patients with Periodontal Disease

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Objective: To evaluate the immediate and long term effectiveness of a desensitizing paste containing 8% arginine and calcium carbonate, Er:YAG laser, their combination and placebo in the management of dentine hypersensitivity.

Methods: Sixty systemically healthy subjects with gingival recessions and dentin hypersensitivity were randomly allocated into 4 groups after initial periodontal therapy: (1) desensitizing paste containing 8% arginine and calcium carbonate (Pro-relief™), (2) Er:YAG laser (80mJ, 3Hz, non-contact mode), (3) application of Er:YAG laser after desensitizing paste, and (4) non activated Er:YAG laser following the application of a prophylaxis paste without desensitizing effect as placebo. Visual Analogue Scale (VAS) was used before (day 0) and immediately after desensitizing treatment and at days 7, 30, 90 and 180.

Results: Immediate effect was found statistically significant in all groups ($p \leq 0.05$). The highest immediate effect was obtained with the application of desensitizing paste alone and its combination with laser. On days 7 and 30, the VAS scores increased in all groups without any inter-group significance. The laser and combination groups maintained their VAS scores close to their respective immediate levels. At day 90, the difference of VAS scores between the desensitizing paste and placebo groups was found insignificant ($p > 0.05$) whereas laser and combination groups kept their efficacy in comparison to the placebo group ($p \leq 0.05$).

Conclusion: At day 180, the placebo group bounced back to VAS scores at day 0. The lowest VAS scores were found in the laser and combination groups revealing the role of laser application for the maintenance of hypersensitivity treatment.

Key words: Dentin hypersensitivity, arginine, Er:YAG laser, combination therapy