Clinical efficacy of Colgate[®] Sensitive Pro-Relief[™] toothpaste

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The clinical effect of a single direct application of a dentifrice containing 8.0% arginine, calcium carbonate, and 1450 ppm fluoride on dentin hypersensitivity: The use of a cotton swab applicator versus the use of a fingertip.

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Study objectives

To compare the effects of a toothpaste containing 8.0% arginine, calcium carbonate, and 1450 ppm fluoride in providing instant relief of dentin hypersensitivity when delivered as a single direct topical application using a cotton swab applicator versus using a fingertip and to evaluate the effects after subsequent twice daily brushing for seven days.

Trial conditions and methods

Products under investigation

Colgate[®] Sensitive Pro-Relief[™] toothpaste containing 8.0% arginine, calcium carbonate, and 1450 ppm fluoride as MFP (Colgate-Palmolive, New York, NY).

Study subjects

84 subjects with established dentin hypersensitivity (two hypersensitive teeth with a tactile sensitivity score [Yeaple probe] of 10-50 grams of force and an air blast score of 2 or 3 on the Schiff Cold Air Sensitivity Scale).

Methods

This seven day clinical study employed an examiner-blind, stratified, two treatment, single product design. Subjects applied a pea-sized amount of toothpaste directly to the sensitive area of one baseline-designated tooth using a cotton swab and massaged the sensitive area for 1 minute. Subjects replicated the procedure on the other baseline-designated tooth with a fingertip. A randomization procedure was used to determine, on a per-subject basis, which tooth and mode of application was to be treated first. Subjects then brushed with the product and a soft bristled toothbrush twice daily for 7 days. Tactile and air blast sensitivity scores were determined immediately after direct topical application and after 7 days of product use.



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Statistical analyses were performed separately for tactile and air blast scores. Comparisons of treatment groups (cotton swab and fingertip) with respect to baseline were performed using analysis of variance (ANOVA). Comparisons between treatment groups using baseline-adjusted scores were performed using analysis of covariance (ANCOVA).

Results

Immediately after direct application and after 7 days, teeth treated with the cotton swab experienced statistically significant improvements from baseline in tactile (182.1% and 190.5%, respectively) and air blast (56.3% and 58.2%, respectively) sensitivity scores. At the same time points, teeth treated with a fingertip experienced statistically significant improvements from baseline in tactile (191.7% and 191.7%, respectively) and air blast (58.1% and 57.4%, respectively) sensitivity scores. There were no statistically significant differences indicated in either tactile or air blast sensitivity scores between the swab test teeth and the fingertip test teeth immediately after direct application or after subsequent twice daily brushing for 7 days.



Conclusion

Colgate[®] Sensitive Pro-Relief[™] toothpaste provides statistically significant relief of dentin hypersensitivity immediately after direct application, using both cotton swab and fingertip methods, and after a subsequent period of twice daily brushing for 7 days. Neither the cotton swab nor the fingertip method of application provided a level of control of dentin hypersensitivity that differed significantly from the other.



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