

A Randomised, Controlled, Clinical Study Evaluating the Efficacy of Two Desensitising Dentifrices

Salian S, Thakur S, Kulkarni S, LaTorre G. J Clin Dent 2010;21(Spec Iss):82-87

Key Points

- In this study, the 5% NovaMin toothpaste was significantly more effective than the commercially available negative (Colgate Dental Cream) and positive control (Sensodent-K) toothpastes, providing superior reduction of dentine hypersensitivity.

Aim

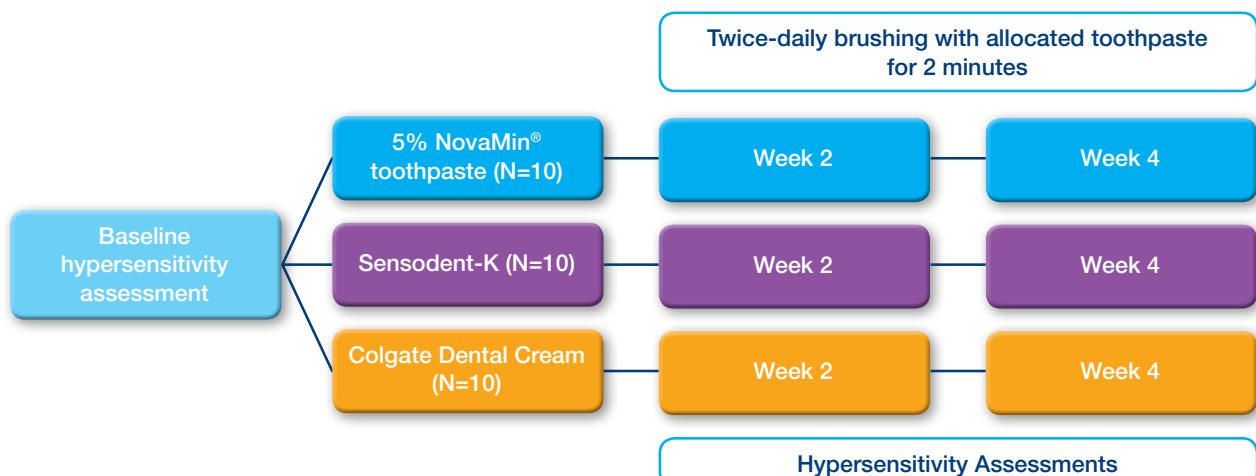
To compare the clinical efficacy and safety of two commercially available toothpastes containing either 5% w/w NovaMin or 5% w/w potassium nitrate and a commercially available non-desensitising negative control, on dentine hypersensitivity.

Methods

Study design

A 4-week, double-blind, single centre, parallel, randomised clinical study involving subjects (aged 20-50 years) with at least two hypersensitive teeth in an Indian population. After baseline assessments, subjects (n=30) were randomly assigned to one of three study treatment groups:

	NovaMin	Sensodent-K	Colgate® Dental Cream
Anti-sensitivity ingredient	5% w/w NovaMin	5% w/w potassium nitrate	NIL
Fluoride	NIL	Not specified	1000 ppm sodium monofluorophosphate
Manufacturer	Shy NM, Group Pharmaceutical Ltd, Bangalore, India	Indoco remedies Ltd, Mumbai, India	Colgate-Palmolive, India



Subjects were provided with the toothpaste (in their marketed packaging, but over wrapped to conceal the product's identity) and a standard soft toothbrush and instructed to brush their teeth for 2 minutes twice daily. Hypersensitivity assessment comprised three tests (tactile, air blast and cold water), which were conducted as shown in the diagram.

Assessment methods:

- **Tactile sensitivity:** pressure was applied to the sensitive teeth using a dental explorer. Immediately after the stimulus subjects rated sensitivity on a 10 cm VAS, where 0 = none and 10 = severe. The test was repeated 3 times and the average final score recorded.
- **Air blast test:** a 1 second cold air blast from a standard dental air syringe was directed to the sensitive portion of the tooth. Immediately after the air stimulus subjects rated sensitivity on a 10 cm VAS, where 0 = none and 10 = severe. The test was repeated 3 times and the average final score recorded.
- **Cold water test:** the sensitive tooth was isolated with cotton rolls and cold water was delivered in the form of freshly melted ice applied to the buccal cervical region with a standard micropipette. Immediately following this stimulus subjects rated sensitivity on a 10 cm visual analogue scale (VAS), where 0 = none and 10 = severe. The test was repeated 3 times and the average final score recorded.

Results

Improvements compared to baseline

- In the 5% NovaMin group, tactile, air and evaporative scores were significantly ($p < 0.05$) lower at all time points tested.
- In the Sensodent-K 5% potassium nitrate group, tactile, air and evaporative scores were not significantly lower at week 2 and only became significantly lower by week 4.
- In the Colgate Dental Cream group, none of the scores were significantly lower at any time points tested.

Improvements amongst treatment groups

At all time points tested, tactile, air and cold water scores for the 5% NovaMin group were significantly ($p < 0.05$) lower than scores for both the Sensodent-K group and the Colgate Dental Cream group.

