

Comparison of Clinical Efficacy of a Dentifrice Containing Calcium Sodium Phosphosilicate to a Dentifrice Containing Potassium Nitrate and to a Placebo on Dentinal Hypersensitivity: A Randomised Clinical Trial

Pradeep AR, Sharma A. J Periodontol 2010 August;81(8):1167-1173

Key Points

- In this study, the 5% NovaMin toothpaste was significantly more effective than the matched placebo control and the commercially available positive control (5% potassium nitrate) toothpastes, providing superior reduction of dentine hypersensitivity.

Aim

To compare the clinical efficacy of two commercially available toothpastes containing either 5% NovaMin or 5% potassium nitrate and a placebo control toothpaste, on dentine hypersensitivity.

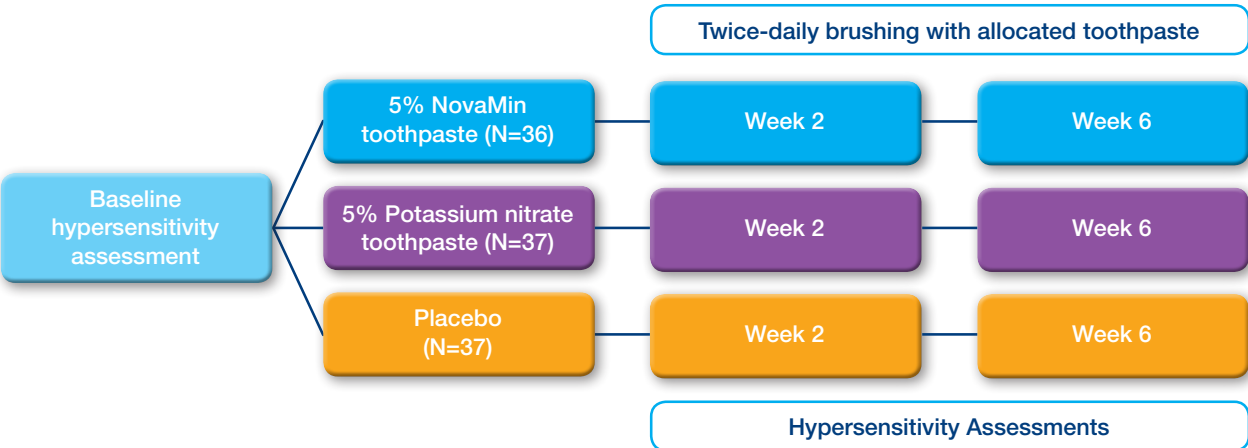
Methods

Study design

A 6-week, triple-blind, single centre, parallel group, randomised clinical study involving subjects (aged 20-60 years) with at least two hypersensitive teeth in an Indian population. After baseline assessments, subjects (n=110) were randomly assigned to one of three study treatment groups.

	SHY NM	SHY	Placebo*
Anti-sensitivity ingredient	5% w/w NovaMin	5% w/w potassium nitrate	NIL
Fluoride	NIL	Not specified	NIL
Manufacturer	Group Pharmaceutical Ltd, Mumbai, India	Group Pharmaceutical Ltd, Mumbai, India	Group Pharmaceutical Ltd, Mumbai, India

* The placebo (negative control) was the same formulation as the NovaMin-containing toothpaste without the NovaMin.



Subjects were provided with the toothpaste and a standard soft toothbrush and instructed to brush their teeth twice daily. Hypersensitivity assessment comprised two tests (air blast and cold water).

Assessment methods:

- **Air blast test:** a 45-65 psi air blast from a standard dental air syringe was directed to the exposed dentine surface. Immediately after the air stimulus subjects rated sensitivity on a 10 cm VAS, where 0 = none and 10 = severe.
- **Cold water test:** the sensitive tooth was isolated with cotton rolls and iced water was 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.

Results

- All treatments showed a reduction in sensitivity VAS scores compared to baseline following 2- and 6-weeks' use of the assigned toothpaste.
- At all time points tested, 5% NovaMin resulted in significantly greater improvement in sensitivity to air and cold water compared to 5% potassium nitrate and placebo at both 2 and 6 weeks ($p < 0.05$).
- There was no statistically significant difference between 5% potassium nitrate and placebo.

