

Effect of a Nano-Hydroxyapatite Paste on Bleaching-Related Tooth Sensitivity

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ABSTRACT

Statement of the Problem: Bleaching-related tooth sensitivity has been shown to be facilitated by the presence of enamel defects. A nano-hydroxyapatite (n-HAP) paste has been shown to repair these defects.

Purpose of the Study: Using a randomized clinical trial, an n-HAP paste was investigated to determine its efficacy in reducing bleaching-related tooth sensitivity.

Methods and Materials: An n-HAP paste (Renamel AfterBleach®, Sangi Co.,Ltd.,Tokyo,Japan) and a placebo (zero-HAP) were randomly assigned for use in 42 participants. A 7% hydrogen peroxide gel was used twice daily for 14 days, with use of assigned desensitizer for 5 minutes immediately following. A diary was completed daily for 4 weeks to note: use of the agents and sensitivity on a visual analog scale (VAS). Three aspects of tooth sensitivity were investigated: percentage of participants; number of days; and intensity level. Color change was assessed.

Results: For Groups zero-HAP and n-HAP, respectively, 51 and 29% of participants reported tooth sensitivity ($p=0.06$). Days of sensitivity were 76 and 36, respectively ($p=0.001$). Change in VAS score from baseline trended higher for Group zero-HAP ($p=0.16$). Color change was equivalent.

Discussion: The data trend indicated Group n-HAP experienced less sensitivity over all three measures. Only the number of days of sensitivity was statistically significant.

Conclusion: Within the limits of the study it can be concluded that the use of the n-HAP paste was associated with a statistically significant reduction in the number of days of tooth sensitivity experienced during active bleaching.

CLINICAL RELEVANCE

For those using a tooth whitener without a desensitizing agent, this study indicates that a paste containing nano-hydroxyapatite crystal can effectively reduce the duration of tooth sensitivity.