



Benefits of ACP

in vivo study

The Clinical Performance of Professionally Dispensed Bleaching Gel With Added Amorphous Calcium Phosphate

Giniger M¹, MacDonald J², Ziembra S², Felix H², The Clinical Performance of Professionally Dispensed Bleaching Gel With Added Amorphous Calcium Phosphate, JADA, 136, 2005.

Objective

To measure how the addition of amorphous calcium phosphate (ACP) to a professionally dispensed 16% carbamide peroxide equivalent bleaching gel affects tooth color and dentinal hypersensitivity.

Materials

- 16% carbamide peroxide equivalent gel with calcium and phosphate
- 16% carbamide peroxide equivalent gel (NiteWhite Excel 3 Regular, Discus Dental)

Methodology

Fifty healthy subjects were enrolled in a parallel, double-blind, two-cell randomized clinical study. All subjects had maxillary anterior tooth discoloration equivalent to or darker than Vita shade 3. A baseline examination was performed which included medical history, oral soft tissue examination, Vita shade tooth color scoring, Gingival Index scoring and self-reported sensitivity scoring. Subjects were randomized into test and control groups that were balanced with respect to age, sex, tooth color and sensitivity scores. The subjects were instructed to use the gel they were given (according to the manufacturer's instructions for the commercially-available control product) once a day for a minimum of three hours or overnight for 14 days. Clinical re-examinations were performed on days 3, 7, and 14 as well as five days post-treatment.

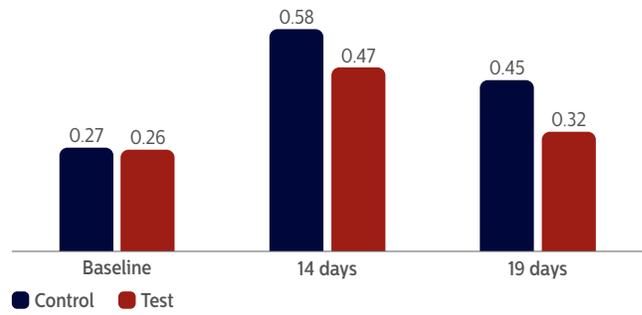
Results

The test group demonstrated significantly lower ($P < 0.05$) mean thermal sensitivity scores with baseline (day 14: 0.21 versus 0.31; day +5: 0.06 versus 0.18). The test group also showed substantially lower ($P < 0.05$) tactile sensitivity scores (day 14: 0.26 versus 0.48; day +5: 0.06 versus 0.19). At the conclusion of the study twice as many subjects were free of thermal sensitivity in the test group (80%) compared with the control group (40%) ($P < 0.001$). There was a similar significant percentage difference for tactile sensitivity. Both groups demonstrated equivalent and significant tooth color enhancements as compared with base line (control: -7.73 shade change versus test: -8.12 shade change; $P < 0.05$).

Conclusion

This study demonstrates that ACP could be added to a 16% carbamide peroxide equivalent bleaching gel and result in a significant reduction of clinical measures of dentinal hypersensitivity, both during and after treatment.

Thermal Sensitivity



Tactile Sensitivity

