



Benefits of ACP

in vivo study

A 180-Day Clinical Investigation of the Tooth Whitening Efficacy of a Bleaching Gel with Added Amorphous Calcium Phosphate

Giniger M¹, Spaid M¹, MacDonald J², Felix H². A 180-Day Clinical Investigation of the Tooth Whitening Efficacy of a Bleaching Gel with Added Amorphous Calcium Phosphate. J Clin Dent 1611-16, 2005.

Objective

To determine if there are any significant long-term clinical benefits or side effects caused by the addition of amorphous calcium phosphate (ACP) to a professional 16% carbamide peroxide bleaching gel.

Materials

- 16% carbamide peroxide gel containing ACP (NiteWhite ACP, Discus Dental)
- 16% carbamide peroxide gel without ACP (NiteWhite Excel 3, Discus Dental)

Methodology

This study examined the effect of bleaching gel with added ACP in a subset of subjects (n=27) from a previously published short-term (n=50) study, in which two groups were assigned to use either an experimental ACP-containing gel or a similar "control" gel. Both groups used the product for four hours (or overnight) daily for 14 days. In the present study, the long-term ACP effects on tooth color, gingival health and three measures of dentinal hypersensitivity at post-treatment days +90 and +180 were assessed.

Results

In the previously published study, the difference in tooth whitening efficacy at day +5 between the test group and the control group was only 0.19 shades relative to baseline, and was not statistically significant. In the present study, the differences between the groups had almost doubled at day +90, and were calculated to be 0.34 shades (statistically different t-test p=0.002). Furthermore, the differences had more than doubled again at day +180, with the ACP group subjects' teeth being 0.78 shades lighter than the control group's teeth (statistically different t-test p=0.002). Considered as a percentage, at day +180 the ACP group had retained nearly 10% more of their original whitening treatment result compared to control. There were no other significant differences found between the two groups. Tooth sensitivity, soft tissue health and gingival health remained similar to baseline levels.

Conclusion

This study demonstrated that the 16% carbamide peroxide product with ACP offers 10% better long-term (six months) whitening efficacy than the traditional bleaching gel tested. The long-term safety of the product has also been demonstrated, as there were no adverse gingival or other effects seen at either day +90 or day +180.

Improvement in Tooth Color from Baseline

Change in Vita Shade from Baseline

