39. An 18-month Randomized Clinical Trial Evaluating Tooth Sensitivity of Four Different Bleaching Treatments: Alkaline Hydrogen Peroxide and Nano-hydroxyapatite Containing Novel Agent versus Conventional Agent

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Abstract

Aim: The aim of this study was to analyze tooth sensitivity triggered by biocompatible in-office and home bleaching systems containing both alkaline hydrogen peroxide (α-HP) and nano-hydroxyapatite (n-HAp) compared to conventional ones including carbamide peroxide (CP) and hydrogen peroxide (HP).
Materials and Methods: Ten adult patients for each group were included to this randomized clinical trial. The teeth of recruited patients have had A2 or darker shade. The groups of this trial were: In-office bleaching: (1) BioWhiten ProOffice 18% HP with (α-HP & n-HAp), (2) Opalescence Boost PF 40% HP. In-home bleaching: (1) BioWhiten ProHome 6% HP with (α-HP & n-HAp), (2) Opalescence PF 10% CP. Tooth-sensitivity was recorded using the Visual Analog Scale (VAS) before bleaching, immediately after bleaching, at 14-day and 1, 6, 12 and 18-month intervals. The statistical analysis was conducted using ShapiroWilk followed by Mann-Whitney U test (a=0.05).
Results: There was no difference among the VAS scores at the pre-bleaching stage for all study groups ($p>0.05$). Significant differences were observed among the VAS scores of the groups for immediately after bleaching and at 14-day periods ($p<0.05$) except for BioWhiten ProHome vs ProOffice groups. At 14-day, numerical value of tooth sensitivity was less in the BioWhiten ProHome 6% HP group (0.8±0.2) compared to those of Opalescence PF 10% CP group (1.7±0.6) in spite of no statistical difference ($p>0.05$).
Conclusion: Within the limitation of this study, the novel bleaching agents containing both alkaline hydrogen peroxide and nano-hydroxyapatite seemed to be a promising choice in clinical use.

Keywords: Alkaline Hydrogen Peroxide; Nano-hydroxyapatite; Bleaching; Tooth Sensitivity; Clinical Trial.