Effectiveness and safety of 3.0% hydrogen peroxide patch in a double-blind randomized clinical trial

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Objectives: As the quality of life improves, self-whitening which is safe and simple to use is becoming popular. There are a variety of bleaching agents in different concentrations on the market which can be purchased by over-the-counter (OTC) bleaching. The purpose of this study is to investigate the whitening effectiveness and safety of 3.0% hydrogen peroxide, which is a typical tooth whitening agent in Korea.

Methods: In the double-blind, randomized clinical trial, participants were recruited from March to May 2019 and 75 subjects were selected as final subjects. A whitening patch containing 3.0% HP was applied to the labial surface of the upper 6 incisors once a day for 30- and 60 minutes using a primer and applied for 10 days. The ΔE^* value, which determines the efficacy of whitening, was measured using Shade Eye NCC, and safety was measured using the gingival index (GI), tooth sensitivity (TS), and gingival irritation (GI).

Results: The results of applying the self-whitening agent containing primer and 3.0% HP for 30- and 60 minutes daily for 10 days were confirmed. In both groups, a change in ΔE^* value (Shade Eye NCC) was observed from the 5th day, and a noticeable color change was confirmed from the 7th day. As a result of evaluating the safety, no significant changes in the gingival index (GI), tooth sensitivity (TS), and gingival irritation (GI) were observed before and after the experiment.

Conclusions: The self-whitening patch containing primer and 3.0% hydrogen peroxide showed a change in tooth color from the 7th day when applied for 30 minutes once a day, and when applied for 60 minutes, a change in tooth color was obtained from the 5th day. In addition, safety was satisfied in both application conditions.

Keywords: 3.0% hydrogen peroxide, effectiveness, safety