

Title:

Bleaching effect of sodium perborate mixed with four different concentrations of H₂O₂ on artificial stained pulpless teeth

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Abstract:

Background and Aim: The use of various techniques of teeth bleaching as a conservative and low-cost procedure is common and generally accepted today. The purpose of this study was to evaluate the bleaching effect of sodium perborate mixed with four different concentrations of H₂O₂ on artificial stained pulpless teeth.

Materials & Methods: In this experimental single-blind study, 64 extracted human premolars were stained in vitro with human RBCs mixed with iron sulfide II, and randomly divided into 4 test groups and one control group. The bleaching agents of sodium perborate mixed with 7.5%, 15% and 30% H₂O₂ and distilled water were placed in pulp chambers of the teeth. The bleaching effects of each group were evaluated using a digital camera and L*a*b system. Adobe Photoshop 7.0 software was used to measure the color changes through the procedure. ΔE was used to describe color changes numerically. The data were analyzed by Kolmogorov Smirnov, ANOVA and SPSS Ver. 9.0 software.

Results: The results revealed that sodium perborate mixed with H₂O₂ 30% significantly had more whitening effect than the other groups (P=0.001), but there was no significant difference among the bleaching effect of the other groups.

Conclusion: The most bleaching effect was gained by H₂O₂ 30%. On the other hand due to no significant difference between 15% and 7.5% of H₂O₂ with water, using sodium perborate mixed with water is one of the safest methods in teeth bleaching.

Keywords:

Bleaching, H₂O₂, Sodium perborate