

THE EFFECT OF IN-OFFICE BLEACHING SYSTEM ZOOM 2 ON THE INORGANIC CONTENTS OF ENAMEL AND DENTIN

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ABSTRACT

The effect of Zoom 2 in-office bleaching system with its post-bleach Relief ACP treatment on the inorganic content of hard tooth structure was examined. Ten extracted intact human maxillary central incisors were collected. The crowns were split labiopalatally into two halves. One half of each tooth was used in the study. The exposed dentin of the ten specimens was completely covered by opal dam to protect it from coming in contact with both bleach gel and Zoom light. Extra-coronal bleaching was done by applying 1-2 mm thick layer of Zoom 2 whitening gel containing 25% HP on the exposed enamel surface using a provided brush after being warmed to room temperature. The bleaching gel was then subjected to Zoom 2 activation light for a 15 minutes session repeated 4 times. The residual gel was removed and reapplied between the sessions. After final removal of the bleaching gel, the enamel surface was treated with the post bleach Relief ACP supplied with the Zoom 2 system for 30 minutes. Elemental composition values of Ca and P contents of enamel (E), central dentin (CD) and pulpal dentin (PD) was done using EDAX pattern. Measurements were done at fixed points in the 3 levels, pre-bleach, post-bleach and after Relief ACP treatment. Results showed a significant decrease in mean Ca/P ratio in E, CD and PD after bleaching. These values were significantly increased after Relief ACP gel treatment to a level almost equivalent to the base-line measurements, as there was no significant difference between mean Ca/P ratio after re-mineralization when compared to pre-bleaching values in the 3 levels. Comparing the mean % changes in Ca/P ratio between E, CD and PD after bleaching, showed no statistically significant difference between E and PD that presented the highest mean % decrease in Ca/P ratio compared to CD that presented the lowest mean % decrease. There was no significant difference between mean % increase in Ca/P ratio between E, CD and PD after re-mineralization with Relief ACP gel. These results ensured safe effect of Zoom 2 bleaching system on mineral content of enamel and dentin with its provided post treatment Relief ACP gel that compensates for the mineral loss resulting from the bleaching procedure.

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