Effect of an experimental remineralizing paste application on the chemical analysis of bleached enamel

Lamiaa Mahmoud Moharam Hassan[1], Shahinaz N Hassan[1], Marwa A Sherief[1], Mohamed H Zaazou[1] and **Mokhtar Nagi Ibrahim[2]**
[1]National Reseach Centre, Egypt
[2]Ain Shams University, Egypt

Aim: To evaluate the effect of an experimentally prepared nano-hydroxyapatite (NHAP) and commercially available amorphous calcium phosphate (ACP) remineralizing agents on the chemical analysis of bleached enamel.

Material & Methods: Thirty-five upper anterior bovine teeth were prepared for this study. The teeth had their roots removed at the Cemento-Enamel Junction (CEJ), and the pulp chambers were sealed using acrylic-resin. The teeth were randomly divided into two main groups; the control group (n=7), which did not receive any bleaching treatment (baseline), and the experimental group (n=28); which was further divided into two subgroups (n=14) representing the photo-activated and chemically-activated in-office bleaching agents that were applied to the enamel surface according to their manufacturer instructions. Each subgroup was further divided into two divisions (n=7) receiving the experimentally prepared NHAP and the commercially available ACP remineralizing agents. The chemical analysis of the calcium and phosphorus ion levels was performed using an environmental energy dispersive x-ray analysis (EDX).

Results: The results showed that both photo-activated and chemically-activated in-office bleaching systems had slightly affected the chemistry of enamel surface. There was no statistically significant difference between both bleaching agent groups.

Conclusion: The application of the experimental NHAP remineralizing agent following bleaching procedures did not significantly alter the calcium and phosphorus ion levels in the bleached enamel surface.

lamia.moharam@gmail.com