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The effect of two Nano filled resin-based coatings on color stability of five glass ionomer restoratives immersed in three different food simulating solutions

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Objectives: To evaluate the effect of different Nano filled resin coatings on the staining susceptibility of glass ionomer restoratives after immersion in three food simulating solutions (FSS).

Methods: Five encapsulated glass-ionomer restoratives (Riva light-cure (SDI), Riva self-cure (SDI), Fuji II LC (GC), Fuji Bulk (GC) and Equia Forte Fil (GC)) and two Nano filled coatings (EQUIA Coat (GC) and G-Coat plus (GC)) were employed. All specimens were immersed in distilled water for 24 h and then subjected to a color measurement with a spectrophotometer. Then the samples were divided into three subgroups and immersed for another one week in lactic acid (0.1mol/L), coffee, and distilled water (control) respectively. The differences in the lightness and chromaticity values (ΔL, Δa, Δb) were determined and the total color change (ΔE) was calculated using the formula: $\Delta E_n=[(\Delta L_n)^2+(\Delta a_n)^2+(\Delta b_n)^2]^{1/2}$

Results: Three-Way ANOVA showed a significant interaction effect between materials, coatings and solutions for the color change values. Therefore, one-way ANOVA was used to compare different variables between the materials. Color change values (ΔE) varied depending on the material and solution. G-Coat Plus exhibited lower color change values compared to the EQUIA-coated and the uncoated groups. The effect of immersion in FSS on color change values among materials varied depending on the type of coating.

Biography

Dana Jafarpur is a sixth year dental student at Shiraz University of Medical Sciences. Next semester she will be graduating summa cum laude from Shiraz Dental School and has written a book in forensic dentistry and published 5 papers during her undergraduate studies.

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