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Short Fiber Glass Ionomer Restorations in Cervical Lesions: 12-Month Trial

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Objectives The aim of this randomized trail was to assess the clinical performance of experimental short fiber-reinforced glass ionomer cement (FR-GIC) in the treatment of cervical caries lesions.
Methods Ethical approval was obtained for the study. A total of 45 patients (19 males, 26 females; mean age: 35±6 years old) were randomly enrolled in this trial according to the split-mouth design. The FR-GIC was prepared by adding short glass fibers at a mass ratio of 20% into the powder portion of Fuji II LC (GC, Japan). The cervical lesions in the intervention group were restored with FR-GIC, while unmodified Fuji II LC was applied as the control. One blind operator made all restorations using dentin conditioner and GIC coat (GC) according to the manufacturers' instructions. Clinical evaluation was performed by two blinded operators at baseline, at 6, and 12 months using modified USPHS criteria. The data were subjected to analysis using Friedman's test, followed by the Nemenyi post hoc test with a significance level of $\alpha = 0.05$.
Results After 1 year, the recall rate was 91%, and restorations were fully retained. There was no statistically significant difference ($p>0.05$) between the two materials based on the evaluated criteria. Both groups had 4 (10%) cases with Bravo scores for cavos-surface marginal discoloration. Regarding marginal integrity, Bravo scores were observed in 5 (12.5%) cases in the intervention group and 4 (10%) cases in the control group. In the intervention group, the Bravo score was determined in 3 (7.5%) cases for color match and 1 (2.5%) case for gross fracture. For all other parameters and intervals, all cases received an alpha score.
Conclusions Both materials in the treatment of cervical caries lesions demonstrated satisfactory clinical outcome throughout the 12-month follow-up.