CED/NOF-IADR
2024 Oral Health
Research Congress
12 — 14 Sept 2024
Geneva, Switzerland

0135

Thirty Months Clinical Evaluation of 10%DMSO Primer in Carious-Cervical-Lesions

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Objectives FDI-criteria for evaluation of the restoration were used in this randomized clinical trial to evaluate the effect of 10% DMSO/H_2O application before etch and rinse adhesive on the durability of carious-cervical-lesions'(CCL) restorations.
Methods 80CCLs met the criteria for inclusion. Prior to bonding, cavities were treated with (37% H3POO4), for 15-seconds followed by 15-seconds rinse. Both study groups received bonding with Single-Bond2 (3M-ESPE) and restoration with Z350XT nanohybrid-composite (3M-ESPE) under rubber-dam isolation. In intervention group, solution of 10% DMSO/H2O was applied for 60-seconds, followed by air-drying after etching and before adhesive application. Assessment of the restorations was conducted at baseline, 12-months, 24-months, and 30-months using the FDI-criteria for evaluation. Statistical analyses involved the use of Kolmogorov-Smirnov and Shapiro-Wilk tests to assess data normality. Categorical data were summarized using percentages, and the Wilcoxon test with a significance level of P=0.05 was utilized for comparisons.
Results Biological properties (secondary-caries, postoperative-hypersensitivity), Functional properties (retention, marginal adaptation), Aesthetic criteria (staining) were evaluated by two assessors after randomization and blinding. Biological and Aesthetic properties were significantly better in intervention group after 30months ($p>0.05$). Functional properties showed no significant difference between the two groups at all follow-ups ($p>0.05$).
Conclusions 10%DMSO Primer improved the durability of etch and rinse adhesives, which were used to bond composite restorations to CCLs. Longer follow-ups should be evaluated in the future.