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Research Article

Marginal Leakage Evaluation of Bioactive Bulkfill Restorative Materials in Class II Cavities: An *In Vitro* Comparative Study

ABSTRACT:

The goal of this study was to estimate the gingival marginal leakage of two types of bioactive composite restorative materials of class II box cavities regarding of the storage in PBS. Methods: Forty sound molars with compared size, each tooth were prepared with two independed class II box cavities (mesially and distally). The teeth were divided into four major groups each of (n=10) according to type of restorative materials. After cavities restorations and samples thermocycling, each group was further separated into two subgroups (n=5); first subgroup does not undergo storage, while the second subgroup was stored for 28 days in PBS. After that all teeth samples were subjected to microleakage analyses to estimate the sealing ability of each restorative material. Statistical analyses were be done with IBM SPSS Statistics version 20, Kruskal-Wallis test, Mann-Whitney U test, and Wilcoxon Signed Ranks Test were be used to compare the results at 5% significant level. Results: The study outlined a statistically significant difference at ($P \leq 0.05$) among groups regarding marginal leakage at the interface between restoration and gingival enamel for non-storage and storage groups, and the Cention N and the Predicta bioactive showed reduction in the marginal leakage after storage in PBS. Conclusion: Different types and qualities of resin restorative material can influence the marginal leakage between restoration and gingival enamel margin. The storage of bioactive composite material in the PBS can be reduced the marginal leakage