

GEORGLAN MEDICAL NEWS

No 12 (345) 2023

**MARGINAL FITNESS OF BIOACTIVE BULKFILL RESTORATIONS TO GINGIVAL
ENAMEL OF CLASS II CAVITIES: AN IN VITRO COMPARATIVE STUDY**

Abstract:

Objective: This study's goal was to assess the marginal fitness for the two bioactive bulkfill restorative materials in Class II cavities regarding the storage in PBS.

Methods: Twenty-four sound molars with nearly same size were placed in PVC tube, showing 3 mm below the CEJ; divided into three major groups (n=8) based on type of restorative materials. Each tooth exposed to two independent MO and DO cavities preparation. After cavities restorations and samples thermocycling, each group was further separated into two subgroups (n=4); the first subgroup does not undergo storage. While the second subgroup was stored for 28 days in PBS. After that all teeth samples were sent for FESEM/EDX analyses. Statistical analyses were done using "Two-Way ANOVA" and "Duncan's Multiple Range" test to evaluate and compare the results at 5% significant level.

Result: According to the study, there was a statistically significant difference at ($P \leq 0.05$) between the groups in the term of gap width formation in μm at the interface between restorative materials and gingival enamel margin, group (C1: Predicta bioactive non-storage) represent the highest mean of gap width (11.76 ± 2.07), while group (A1: Tetric powerFill non-storage) represent the lowest mean of gap width (6.08 ± 1.36).

Conclusion: The marginal adaptation at the interface between resin restorative material and gingival enamel margin can be affected by the composition and the properties of the restorative materials used. The bioactive restorative materials showed statistically significant reduction in gaps width after storage in PBS for 28 days.