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Original Articles

## Microleakage under Ceramic and Metallic Brackets Bonded with Resin-Modified Glass Ionomer

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### Abstract

**Objective:** To test the null hypothesis that there is no significant difference between the microleakage of adhesive interferences at the occlusal and gingival margins of both ceramic and metallic brackets bonded with light-cured resin-modified glass ionomer and a conventional adhesive.

**Materials and Methods:** Sixty freshly extracted human maxillary premolar teeth were randomly divided into four groups of 15 teeth each. Metal and ceramic brackets were bonded to groups 1 and 2 with resin-modified glass ionomer adhesive (RMGIA). Metal and ceramic brackets were bonded to group 3 and group 4 with a conventional adhesive (CA) system. A dye-penetration method was used for microleakage evaluation. Microleakage from the occlusal and gingival margins was determined by a stereomicroscope for the enamel-adhesive and bracket-adhesive interfaces. Statistical analysis was performed using the Kruskal-Wallis test and the Mann-Whitney *U*-test with a Bonferroni correction.

**Results:** The gingival side of all groups exhibited higher microleakage scores compared with the occlusal side for both adhesive interfaces. All bracket and adhesive combinations displayed statistically significant differences in microleakage between the enamel-adhesive and adhesive-bracket interfaces at the occlusal and gingival sides of the brackets ( $P < .001$ ). When the adhesive systems were compared, the RMGIA showed more microleakage than the CA between the different interfaces.

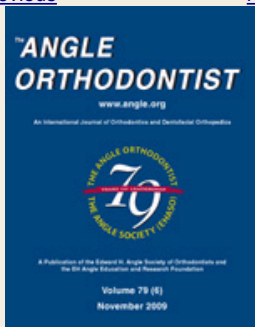
**Conclusions:** The hypothesis is rejected. RMGIA results in more microleakage between enamel-adhesive interfaces.

**Keywords:** [Microleakage](#), [Glass-ionomer](#), [Adhesive](#), [Metallic](#), [Ceramic](#)

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