

Bonding of Resin-Modified Glass Ionomer-based Adhesive to Dentine

*Hamdi Hosni Hamama, Cynthia Kar Yung Yiu, Michael Francis Burrow
Faculty of Dentistry, Hong Kong University, Hong Kong, China*

Objectives: To compare the effect of conditioning dentine with either 37% phosphoric acid for 5 s or 10% polyacrylic acid (PAA) for 10 s on microtensile bond strength (ITBS) of resin-modified glass ionomer based-adhesive to dentine and micro-morphology of the bonded interface.

Methods: Twenty sound permanent third molars were randomly divided into two groups, according to the conditioning method. Group 1: 37% phosphoric acid and Group 2: 10% PAA were used. In each group, five molars were subjected to morphological analysis using scanning electron microscopy (SEM); while the remaining five were used for ITBS testing.

Results: SEM revealed improved resin infiltration in Group 1, compared to Group 2. The t-test showed that ITBS of Group 1 was significantly higher than Group 2 ($p < 0.001$).

Conclusion: Conditioning using 37% phosphoric acid prior to application of resin-modified glass ionomer-based adhesives seems to achieve better bonding to normal dentine than 10% PAA.