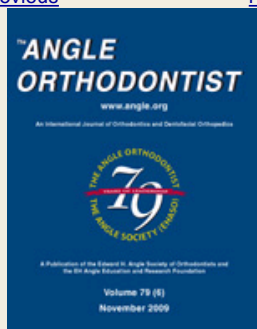


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Original Articles

Effects of Different Chlorhexidine Formulations on Shear Bond Strengths of Orthodontic Brackets

Bülent Çatalbas^a, Ertuğrul Ercan^b, Ali Erdemir^c, Ibrahim Erhan Gelgor^a, and Yahya Orçun Zorba^d

Abstract

Objective: To test the hypothesis that the application of different chlorhexidine formulations to the etched enamel will not affect shear bond strength (SBS).

Materials and Methods: Forty-four freshly extracted human premolars were collected and stored in distilled water. The teeth were etched with 37% phosphoric and were rinsed and dried. The teeth then were divided into four equal groups. While Group 1 served as a control, Groups 2 to 4 were treated before bonding with a chlorhexidine formulation that included solution (2%), gel (1%), and mouthwash (0.2%). Orthodontic brackets were bonded with Transbond XT (3M Unitek, Monrovia, Calif). Bond strength results were evaluated with the use of one-way analysis of variance (ANOVA) ($P < .05$) and post hoc tests. Modes of failures were verified by means of scanning electron microscopy.

Results: Although no statistically significant difference was observed between Groups 1 and 4 ($P > .05$), both were statistically superior to Groups 2 and 3 ($P < .05$). In this in vitro study, the observed measures for Groups 2 and 3 (14.5–10.6 MPa) were lower than those for Groups 1 and 4 (27.3–24.9 MPa), but these values were much higher than those required for clinical use (6–8 MPa).

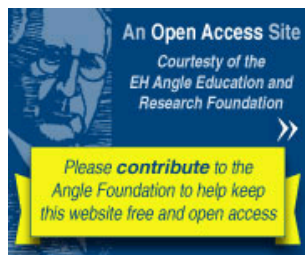
Conclusion: The hypothesis is rejected. The application of chlorhexidine mouth rinse before bonding had no significant effect on the SBS value, and the application of chlorhexidine solution and gel significantly decreased SBS.

Keywords: [Shear bond strength](#), [Orthodontic bracket](#), [Chlorhexidine gel](#), [ARI score](#)

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