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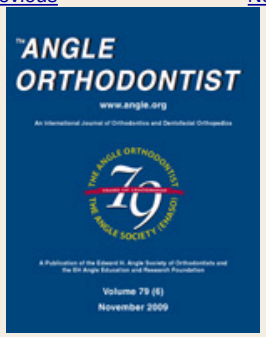

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Original Articles

Shear Bond Strength of Brackets Bonded to Enamel with a Self-Etching Primer

Effects of Increasing Storage Time After Activation

Matheus Melo Pithon[a], Antonio Carlos de Oliveira Ruellas[b], Eduardo Franzotti Sant'Anna[c], Márlio Vinícius de Oliveira[d], and Luiz Antônio Alves Bernardes[e]

Abstract

Objective: To evaluate bonding efficacy of activated Transbond Plus Self-Etching Primer (TPSEP) used at different time points with Transbond XT to bond metallic orthodontic brackets to bovine incisors.

Materials and Methods: The inferior incisors of 210 bovines were randomly divided into seven groups (n = 30). TPSEPs were mixed, activated, and kept activated for 30 (group 30), 21 (group 21), 15 (group 15), 7 (group 7), 3 (group 3), or 1 (group 1) days before bonding, and in one group (group 0) TPSEP was used immediately after mixed. At day zero, incisors in each group were bonded in exactly the same way. After applying TPSEP, brackets were bonded with Transbond XT, according to the manufacturer's instructions. After 24 hours, shear bond strength (SBS) tests were performed for all samples at a crosshead speed of 0.5 mm/min, and the Adhesive Remnant Index was scored.

Results: There were no significant differences between the SBS of groups 0, 1, 3, 7, and 15 ($P > .05$) However, those groups had higher SBS ($P < .05$) compared with groups 21 and 30. No significant difference ($P > .05$) was observed between groups 21 and 30. Despite the decrease in SBS for groups 21 and 30, bond strength values were still satisfactory.

Conclusion: After activation, the TPSEP mix can be stored for a period of 15 days without losing its adhesive properties.

Keywords: Self-etching primer, Shear bond strength, Orthodontic brackets, ARI score

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