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**Dentin Bond Strength of Two One-Bottle Adhesives after Delayed Activation of Light-Cured Resin Composites**

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**Abstract:**

**Objective:**

Adverse surface interactions between one-bottle adhesives and chemical-cured composites may occur with delayed light activation of light-cured composites. The purpose of this study was to assess the Effects of delayed activation of light-cured composites on shear bond strength of two one-bottle adhesives with different acidity to bovine dentin.

**Materials and Methods:**

Flat dentin surface was prepared on sixty-six bovine incisors using 600 grit carbide papers. Prime&Bond NT, and One-Step adhesives and resin composite were applied in six groups: 1) immediate curing of the composite, 2) the composite was left 2.5 minutes over the cured adhesive before light activation, 3) prior to delayed activation of the composite, the cured adhesive was covered with a layer of nonacidic hydrophobic porcelain bonding resin (Choice 2) and cured immediately. After thermocycling, shear bond strength (SBS) test was performed using a universal testing machine at 1 mm/min crosshead speed. Data were analyzed with Friedmans two-way Non-parametric ANOVA.

**Results:**

The SBS of delayed activation of Prime&Bond was significantly lower than immediate activated ( $P < 0.05$ ). Decrease in the SBS of One-Step was not statistically significant after delayed activation. The SBS of delayed activation of Prime&Bond and One-Step with an additional resin layer was significantly higher than delayed activation ( $P < 0.001$ ).

**Conclusion:** The bond strength of Prime&Bond might be compromised by the higher acidity of this adhesive during the 2.5 minutes delayed activation of light-cured composite. Addition of a layer of hydrophobic

**Keywords:**

Composite Resins; Dentin-Bonding Agents; Prime and Bond NT; Dental Bonding

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