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Effect of refrigeration on bond strength of self-etching adhesive systems

Sultan Ali Alanazi
Al-Farabi College for Dentistry and Nursing, Saudi Arabia

The purpose of this study was to investigate the tensile bond strength to dentin of three self-etching adhesive systems at refrigerated and room temperatures. 78 bovine incisors were embedded in self-cured acrylic resin, abraded on a water-cooled lathe and polished with 400- and 600-grit sandpapers to obtain standard dentin surfaces. The specimens were randomly assigned to 6 groups (n=13). Clearfil SE Bond, AdheSE and One-Up Bond F adhesive systems at refrigerated (4°C) and room temperatures (23°C) were applied to dentin according to the manufacturers' instructions. A truncated composite resin (Herculite XRV) cone was bonded to dentin surface. The specimens were stored in distilled water at 37°C for 24 h and submitted to tensile bond strength testing at a crosshead speed of 0.5 mm/min. Means in MPa were analyzed statistically by Student's t-test at 5% significance level. Results revealed that no statistically significant differences ($p>0.05$) were found between the adhesive systems applied at refrigerated and room temperatures. In conclusion, no adverse effects on tensile bond strength were observed when self-etching adhesive systems were used after being taken directly from the refrigerated storage.

Biography

Sultan Ali Alanazi completed his Bachelor degree at Alfarabi College in Riyadh. He was an organizer of more than one conference. Currently he is doing his internship at Al-Farabi College for Dentistry and Nursing, Riyadh, Saudi Arabia.

mr.night3@gmail.com

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