

## Shear bond strengths of bulk fill composite resin to mineral trioxide aggregate

### Abstract

**Introduction:** Mineral trioxide aggregate (MTA) show physical and biological properties that can be used effectively as preservation of pulp vitality and regenerative techniques. The bond strength between MTA and restorative materials has a great importance because MTA is often in direct contact with restorative materials. The aim of this study was to compare the shear bond strength of three types of bulk-fill composite resin to MTA.

**Materials and Methods:** Forty five acrylic blocks with central holes (5 mm in diameter and 2 mm in height) were prepared and divided into 3 groups (n = 15 each) according to the composites used. (Tetric N-Ceram bulk-fill composite resin, Filtek bulk-fill composite resin, Estelite bulk-fill flowable composite resin). The acrylic cavities was filled with ProRoot MTA After application of bonding material and proper composite resin samples, shear bond strength (SBS) was assessed using universal testing machine. Data were analyzed using 2-way analysis of variance. A p value of  $< 0.05$  was considered to indicate statistical significance.

**Result:** Bond strength was significantly higher in samples of Tetric N-Ceram bulk-fill composite resin. ( $P < 0.05$ ). But the difference between two other groups ( $P=0.99$ ) was not significant.

**Conclusion:** Under the conditions of this study, ProRoot MTA and Tetric N-Ceram bulk-fill composite resin showed statistically higher bond strengths to other bulk-fill composite resins.

**Key words:** Shear bond strength, Bulk-fill composite resins, Mineral trioxide aggregate