

Title: Investigation of bond strength between reinforced glass ceramics and resin cement with different shelf life

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Aim: To investigate the effect of the shelf life of the resin cement on the bond strength and also, to examine the bond strength between various glass ceramics and composite resin cement.

Materials and methods: Three different glass ceramic blocks (Empress CAD, E.max CAD, Vita Suprinity) were used in the present study. The blocks were cut with a saw with the thickness of 1 mm. and were placed in acrylic molds. The composite rods prepared in 1mm. diameter and they were bonded to ceramic surfaces with resin cement (Variolink II) with three different shelf lives (Group 1: Not-expired, group 2: 6 months expired, group 3: 12 months expired). Micro shear bond strength test was applied to the samples.

Results: According to the statistical analysis, a significant difference was found between leucite reinforced glass ceramic (LRC) and lithium disilicate glass ceramic (LDS) in the resin cement group whose expiration date was 12 months ($p=0.047$). In all three ceramic samples, a significant difference was found between the resin cements with not-expired and 12 months expired ($p=0.007$). There was no statistically significant difference between LDS, LRC, ZLS samples in the resin cement group whose expiration date was not expired.

Conclusion: Resin cement with expiration date of 12 months decreased the bond strength, while resin cement with the expiration date 6 months did not affect the bond strength.

Key words: Reinforced glass ceramics; Bond strength; Shelf life