

# The Bond Strength of Ceramic Brackets Bonded to Remineralized Teeth with Casein

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The aim of this study was to evaluate the shear bond strength of ceramic brackets bonded with different adhesives to remineralized teeth with casein phosphopeptide amorphous calcium phosphate. Premolar teeth (n=120) were used in the study. Teeth were divided into 6 groups (n=20). For 60 teeth in the first 3 groups demineralization was performed before all teeth in the 6 groups were pretreated with CPP-ACP cream (GC Tooth Mousse, GC Corp., Tokyo, Japan) for 30 days. Brackets were bonded with Transbond XT, Fuji Ortho LC and Aegis Ortho. The bond strength was tested with universal testing machine. The amount of adhesive on enamel surfaces was coded using Adhesive Remnant Index (ARI). Statistical analyses were performed (Kruskal Wallis, Dunn's, Mann-Whitney-U, Chi-square) and significance was predetermined at  $p<0.05$ . The mean bond strength of Transbond XT, Fuji Ortho LC and Aegis Ortho in remineralized teeth were found to be  $22.58\pm 5.01$ ,  $16.26\pm 4.42$  and  $11.21\pm 2.7$  MPa, respectively. The mean bond strength of Transbond XT, Fuji Ortho LC and Aegis Ortho in casein pretreated teeth were measured as  $23.08\pm 6.11$ ,  $16.9\pm 5.12$  and  $10.57\pm 4$  MPa, respectively. Remineralization did not cause any significant change in the bond strengths of the adhesives. The mean bond strength of Transbond XT was significantly higher than other adhesives. Also the mean bond strength of Fuji Ortho LC was higher than Aegis Ortho. As a result, remineralization with casein does not effect the bond strengths of related adhesives. Fuji Ortho LC and Aegis Ortho can safely be used in patients, who underwent casein prophylaxis.

**Key words:** Adhesive, bond strength, casein, ceramic bracket, enamel demineralization