

Effect of Chlorhexidine on the Bond Strength of a Self-Etch and Total-Etch Adhesives to Dentin

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Objectives: This study used a resin that incorporates 0.2% CHX to evaluate its effect on dentin bond strength (BS) over six-month period using two systems; self-etch (SE) and total-etch (TE).

Methods: Dentin surfaces were etched with 37% phosphoric acid or conditioned with SE primer. A layer of resin adhesive or resin adhesive with CHX was applied and light cured. Composite button (2.3mm x3 mm) was placed. Shear BS was recorded at a crosshead speed of 0.5mm/min immediately, at 1 and 6 months after aging in 37°C artificial saliva.

Results: After 6-month period, all groups showed decreased BS in comparison to 1-month except for TE-CHX groups. All CHX groups exhibited higher BS than control groups after 6 months; however, the results were not significant ($p > 0.05$). Overall, SE showed significantly higher BS on dentin than TE ($p = 0.046$).

Table 1. Mean Bond Strength \pm Standard Deviation (MPa) (n=8)

	Self-Etch		Total-Etch	
	Peak LC - Control	Peak CHX	Peak LC - Control	Peak CHX
Immediate	23.895 (± 7.191)	18.858 (± 6.930)	17.502 (± 6.333)	19.955 (± 6.821)
1 month	32.723 (± 7.766)	35.563 (± 6.835)	23.972 (± 8.460)	23.669 (± 11.663)
6 month	27.671 (± 10.211)	32.403 (± 10.427)	20.221 (± 12.502)	24.425 (± 9.392)

Conclusions: SE showed significantly higher dentin bond strength than TE after 6-month. CHX-incorporated resin did not adversely affected dentin bond strength. CHX groups showed higher mean bond strength after 6-month than control, but the difference was not significant.