

ABSTRACT

Topic: Assessment of Dental Bond strength after selective Pre-treatment of dentin.

Objective: To assess the efficacy of 1, 2, 3, 4 butane tetracarboxylic acid as a dentin pre-conditioning agent, as compared to Chlorhexidine to increase the Resin-dentin bond strength.

Materials and methods: In this study, 60 tooth samples of 1 cm height, were prepared and randomly divided into 2 groups, for immediate and delayed testing, after 1 month; Each subgroup was further divided into test and control (n= 15). Each sample was first preconditioned with the respective agent for 30 seconds, followed washing and air drying. Then the self-etch adhesive was applied, dried after 5 seconds and light cured for 20 seconds. Composite was built up in 1mm thick increments, upto a height of 1cm, and cured for 40 seconds. All the samples were stored in artificial saliva at room temperature, in closed containers. Group I were tested after 24hours and Group II, after 1 month. The samples were tested for their Microtensile bond strength using a UTM machine and statistical analysis was done.

Results: Bond stability at 24hours was slightly better for the test group, than the control group. At 1 month, it was even better for the test group as compared to control group. Though the results were not statistically significant within the group. also there was no significant reduction in the Microtensile bond strength between the immediate testing and testing after 1 month.

Conclusion: 1, 2, 3, 4 butane tetracarboxylic acid proved to be as effective as Chlorhexidine as a preconditioner for dentin. So, it can be used as an alternative to Chlorhexidine.

Keywords: Chlorhexidine, Microtensile bond strength, pre conditioning, 1, 2, 3, 4 butane tetracarboxylic acid, dentin, resin.