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Biodegradation of artificial caries-affected dentin bonding interface of fluoride and MDPB-containing adhesive system

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The aim of this study was to evaluate the effect of a fluoride/MDPB-containing adhesive system on the durability of bonding to permanent artificial caries-affected dentin (CAD) exposed to *S. mutans* culture and water storage. Twelve third molars were selected. Flat surfaces of dentin were submitted to artificial caries development in *S. mutans* and BHI broth. Caries-infected dentin was removed with burs according to clinical criteria [1] and CAD cavities were restored with Adper Scotchbond Multi-Purpose (SBM) and Clearfil Protect Bond (CPB) (n=6). Nontrimmed resin-dentin bonded interfaces (1mm^2) were stored in *S.mutans* + BHI for 3 days [2] in deionized water for 3 months and after that subjected to microtensile bond strength (μTBS) test. The control group was not submitted to storage and immediate μTBS testing was performed. Fractographic analysis was performed after μTBS testing. Four molars were restored as described, and morphological analysis of hybrid layer (HL) was evaluated by scanning electron microscopy (SEM). Two-way ANOVA with split-plot design and Tukey's tests were performed. No difference was found between μTBS values of SBM and CPB irrespective of the groups. A significant decrease in μTBS values after *S. mutans* culture and water storage was observed, but no difference was found between them. SBM and CPB showed similar hybrid layer thickness and resin tag formations. The fluoride/MDPB-containing adhesive system did not prevent the degradation of CAD bond strength in both degradation methods.

[1] C.A.G. Arrais, M. Giannini, M. Nakajima, J.Tagami. Eur. J. Oral. Sci., 112, 458 (2004).
[2] A. Kuramoto, S. Imazato, A.W.G. Walls, S. Ebisu. J. Dent. Res., 84, 89 (2005).