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Comparison of water-based versus water/ethanol-based all-in-one self-etch adhesives

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Background: Most of all-in-one dental adhesives contain a mixture of hydrophilic and hydrophobic components that are dissolved in an organic solvent. This variability between the adhesives would affect their interaction with tooth structures. Flaw in this interaction, was represented by poor dentin hybridization, which might affect the treatment success. Thus, the objective of the study was to compare between two different all-in-one self-etch adhesives, by examining the nano leakage expression at dentin-resin interface.

Methodology: Tetric-N- bond self-etch adhesive (TN; Ivoclar/Vivadent) and Tri-S bond plus (TS; Kuraray Noritake) all-in-one self-etch adhesives were used for bonding resin composite to human dentin. After sectioning, they were subjected to ammoniacal silver nitrate solution followed by developing solution. Then, images were taken under Scanning Electron Microscope (SEM) and energy-dispersive X-ray spectroscopy (EDS) to trace the silver grains at the dentin-resin interface.

Result: In TN group, SEM/EDS showed heavy silver deposition along the hybrid layer as well as throughout the adhesive layers whilst in TS group the dentin-resin interface did not show silver deposition.

Conclusion: Water-based TN adhesive showed heavy silver deposition along the dentin-resin interface.

Biography

Turki Bakhsh has completed his PhD from Tokyo Medical and Dental University, Japan. His research is focused on adhesive dentistry and characterization of the resin-tooth interaction zone using the latest technologies. He is the Director of Prosthetic Dental Labs at King Abdulaziz University Dental Hospital, a premier dental lab in Western region of Saudi Arabia. He has published more than 15 papers in reputed journals and serving as an Editorial Board Member of *Journal of Biomedical Optics*, *Adhesive Dentistry* and other well-known esteemed journals.

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