COMMENTARY

A New Universal Simplified Adhesive: 6-Month Clinical Evaluation¹

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This detailed and well-written paper reports 6-month data from a randomized, double-blind clinical trial on a universal or multimode adhesive (Scotchbond Universal Adhesive; 3M ESPE, St. Paul, MN, USA) used with a resin composite (Filtek Supreme Ultra; 3M ESPE) to restore noncarious cervical lesions.¹ Two hundred restorations in 39 patients were assigned to four groups: etch-and-rinse + moist dentin, etch-and-rinse + dry dentin, selective enamel etching, and self-etch. Evaluation criteria were those described by the United States Public Health Service and the World Dental Federation. The authors concluded that there were no statistical differences in clinical behavior at 6 months among the four conditions.

The clinical design evaluated restorations placed in noncarious cervical lesions. The authors provided detailed information on the classification of these lesions including shape, cervicoincisal height, degree of sclerotic dentin, presence of an attrition facet, presence of preoperative sensitivity, tooth distribution, and arch distribution. The four clinical conditions studied were distributed more or less equally within these classifications. Although only four restorations were lost at 6 months (98% retention among 200 restorations placed), it would have been interesting to know the classification of those failed restored lesions (for example, significant sclerosis present).

The term "universal adhesive" or "multimode adhesive" describes an adhesive that has self-etching chemistry but also can be used with phosphoric acid in an etch-and-rinse (total-etch) technique. Universal adhesives represent the latest "generation" of bonding agents and are novel in that they claim to reduce technique sensitivity caused by the presence of a dentin etched by phosphoric acid. These adhesives are ideal for use with the selective etching technique because they are designed to bond to dentin etched with phosphoric acid or not etched. Earlier self-etch adhesives (6th and 7th generation) were not specifically designed for use on dentin etched with phosphoric acid.

Although not the subject of this clinical study, universal adhesives can be used with resin cements in bonding of indirect restorations. In this regard, the term "universal adhesive" can cause confusion because some, but not all, products provide additional features beyond use with self-etch and etch-and-rinse techniques. Some universal adhesives contain silane and an acidic adhesive monomer (often referred to as methacryloyloxydecyl dihydrogen phosphate [MDP]). Silane is a primer necessary for bonding to silica-based ceramics, whereas MDP provides chemical bonding to zirconia-based ceramics. Thus, several universal bonding agents are capable of bonding to metal and ceramic substrates in addition to enamel and dentin. Additional confusion exists because at least one manufacturer recommends the use of separate products for silane and MDP treatments even though their universal bonding agent contains these primers.

Well-designed clinical studies provide important information on the use of new bonding agents. The use of noncarious cervical lesions is particularly valuable because it is difficult to study this type of lesion in vitro. I look forward to future results from this ongoing clinical study.

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This commentary is accompanied by article, "A New Universal Simplified Adhesive: 6-Month Clinical Evaluation" Alexandra Mena-Serrano, DDS, MS, Carlos Kose, DDS, MS, Eloisa Andrade De Paula, DDS, MS, Lidia Yileng Tay, DDS, MS, Alessandra Reis, DDS, PhD, Alessandro D. Loguercio, DDS, MS, PhD, Jorge Perdigão, DMD, MS, PhD, DOI 10.1111/jerd.12005.

REFERENCE

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