

# **Microleakage of an ORMOCER-based restorative material in primary teeth, an in vivo study**

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Microleakage around restorative materials is an extremely complex phenomenon and presents a major factor influencing the longevity of composite restorations especially in primary teeth. However, a new class of esthetic dental filling material (Admira) has been developed based on ORMOCER technology. Its manufacturer claims that Admira shows excellent properties than conventional composite with low polymerization shrinkage and good adhesion of Admira bond to tooth structure. The success of this new material in controlling microleakage is still unclear.

The aims of this in vivo study were to compare, by means of dye penetration, between the microleakage values of an ORMOCER-based material (Admira) and a commonly-used composite resin (Restorative Z-100) and to assess the differences in the degree of microleakage according to the cavity wall location for both tested materials.

Twenty cooperative children were selected from patients seeking dental care in pediatric dental clinic, dental school, King Abdulaziz University. Each selected child had at least two sound primary canines indicated for extraction for orthodontic reasons. Forty standardized class V cavities were prepared. In each child one cavity was randomly selected as control and restored with Restorative Z-100 composite resin. The other cavity automatically was considered as a test and restored with an Admira ORMOCER-based resin material. Both materials were applied according to manufactures instructions and cured by the same light curing unit. All teeth were extracted 4 weeks after restoration and immersed in 2% basic fuchsin dye solution for 24 hours at room temperature. The teeth then were sectioned and observed under stereomicroscope. The degree of dye penetration was blindly recorded

No statistically significant differences were found in the degree of microleakage between the two materials or the location of cavity walls. Additional preventive measures should be considered to minimize leakage since none of the restorative systems used eliminated microleakage.