

Venus® Bulk Fill

Clinical study – University of Mainz, Germany

One year clinical performance of bulk-fill-composite versus compomer in primary molars

Dental practitioners have to rise to a challenge always when treating young children. Apart from special characteristics of deciduous teeth, the short attention span and compliance of the children require short, easy and long-lasting treatments. Glass ionomer cements and compomers are therefore often used in primary teeth, but they are weaker than resin composites. These restorations are sometimes not surviving until the physiological exfoliation. So, resin composites are the most successful restorations in primary teeth¹. But they require prolonged placement time. Recent developed dental material as self-etch or universal adhesives and bulk fill restoratives are very helpful in treating these cases: The self-etch bonding approach saves time which helps to reduce the risk of saliva contamination of the adhesive. Bulk filling materials save additional time, because restorations below 4 mm cavity depth can be done in one single increment. And Venus Bulk Fill does not need an occlusal cover layer of a conventional composite in primary teeth.

The following clinical study compares Venus Bulk Fill applied without cover layer to an incremental layered compomer restoration after one year.

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

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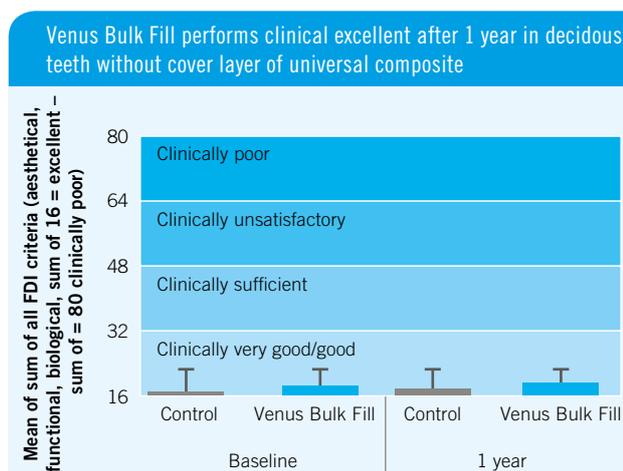
Objectives

Composites, compomers and glass ionomer cements are often chosen for restorative therapy of the primary dentition. Bulk-fill materials are used preferentially in the primary dentition because they can be applied in only one increment of higher thickness (4mm). The aim of the study was to evaluate the clinical performance of a flowable bulk-fill composite versus a compomer in class II cavities of primary molars.

Methods

In a split-mouth clinical study, 100 restorations in 32 children (6.7 ± 1.2 years) were placed with at least one bulk-fill composite (Venus Bulk Fill, Kulzer) and one compomer (Dyract as control, Dentsply) in two randomly assigned comparable class II cavities. After caries excavation, the adhesive Scotchbond Universal (3M Espe) was applied in the self-etching mode. According to the manufacturer's instructions, Venus Bulk Fill was used for the entire class-II-cavity of primary molars without cover layer of universal composite. After visible light curing, both restorations were finished and polished. Both restorative materials were evaluated at baseline and after an observation period of one year. The evaluation included aesthetic, functional and biological parameters and the restorations were scored according to the FDI criteria (Hickel *et al.* 2010).

Results



After one year, 99 restorations could be reevaluated, one tooth was physiologically exfoliated. Concerning the aesthetic parameters, there was no difference between both materials, although Dyract showed slightly better scores than Venus Bulk Fill. Both materials showed similar scores regarding functional and biological parameters. No severe postoperative sensitivities or side-effects were reported during the observation period. There was no statistically significant difference ($p = 0.76$) between the performance of Venus Bulk Fill and Dyract for primary molars.

Conclusion

A sufficient restorative therapy in primary molars can be achieved with a bulk-fill composite as well as with a compomer. Thus, Venus Bulk Fill can be recommended for clinical use in primary teeth.

Comment

This study shows the excellent clinical performance of Venus Bulk Fill after one year. Its performance does not differ from an incremental layered compomer which is used very often in primary teeth. Venus Bulk Fill can be applied in an increment of up to 4 mm layer thickness which accelerates significantly the treatment time. Normally, Venus Bulk Fill needs to be covered occlusally by a conventional universal composite. In primary teeth, it can be used without this cover.

Source

Ehlers V, Gran, K, Willershhausen B, Ernst C-P: One-year clinical performance of bulk-fill-composite versus compomer in primary molars. IADR-CED congress, Vienna, Austria, 2017, abstract #0282.

The study was abbreviated, summarised and commented and all diagrams and titles have been established by Kulzer.