

PENGARUH TEKNIK APLIKASI BAHAN ADHESIF DAN JENIS *PREHEATED* RESIN KOMPOSIT SEBAGAI BAHAN PEREKAT TERHADAP KEKUATAN GESER PELEKATAN *LITHIUM DISILICATE*

INTISARI

Keberhasilan vinir dipengaruhi oleh prosedur sementasi. *Preheated* resin komposit dapat digunakan sebagai alternatif bahan sementasi karena memiliki sifat mekanik yang lebih baik dan mudah untuk diaplikasikan. Resin komposit dapat berikatan dengan baik pada struktur gigi karena adanya sistem adhesif. Tujuan penelitian ini untuk melihat pengaruh perbedaan teknik aplikasi bahan adhesif dan jenis *preheated* resin komposit sebagai bahan perekat terhadap kekuatan geser pelekatan *lithium disilicate*.

Sampel penelitian berjumlah 28 gigi premolar atas yang dibagi dalam empat kelompok. Preparasi sampel gigi dilakukan pada bagian bukal hingga dentin terbuka. Pada kelompok IA dilakukan aplikasi *preheated* resin komposit *microhybrid* dengan teknik aplikasi bahan adhesif *total-etch*, kelompok IB dilakukan aplikasi *preheated* resin komposit *microhybrid* dengan teknik aplikasi bahan adhesif *self-etch*, kelompok IIA dilakukan aplikasi *preheated* resin komposit *nano hybrid* dengan teknik aplikasi bahan adhesif *total-etch* dan kelompok IIB dilakukan aplikasi *preheated* resin komposit *nano hybrid* dengan teknik aplikasi bahan adhesif *self-etch*. Uji kekuatan geser pelekatan dilakukan dengan *universal testing machine*. Hasil penelitian dilakukan uji ANAVA dua jalur dan *Post Hoc* LSD dengan tingkat kepercayaan 95%.

Hasil uji ANAVA dua jalur menunjukkan adanya pengaruh yang signifikan antara bahan pekat, teknik aplikasi bahan adhesif dan interaksi bahan pekat dan teknik aplikasi bahan adhesif terhadap kekuatan geser pelekatan *lithium disilicate* ($p < 0,05$). Kesimpulan penelitian ini adalah jenis *preheated* resin komposit *microhybrid* menghasilkan kekuatan geser pelekatan *lithium disilicate* yang lebih tinggi dibandingkan *preheated* resin komposit *nano hybrid* dan teknik aplikasi bahan adhesif *total-etch* menghasilkan kekuatan geser pelekatan *lithium disilicate* yang lebih tinggi dibandingkan dengan *self-etch*.

Kata kunci: *preheated* resin komposit, adhesif universal, *total-etch*, *self-etch*, kekuatan geser pelekatan

EFFECT OF ADHESIVE APPLICATION TECHNIQUES AND TYPES OF PREHEATED COMPOSITE RESIN AS LUTING MATERIALS ON THE SHEAR BOND STRENGTH OF LITHIUM DISILICATE

ABSTRACT

The success of veneers is influenced by the cementation procedure. Preheated composite resin has been proposed as a luting material for indirect adhesive restoration for their better mechanical and handling properties. Composite resin bond effectively to tooth structures with the use of an adhesive system. This study aims to evaluate the influence of different adhesive application techniques and types of preheated composite resin as luting materials on the shear bond strength of lithium disilicate.

A total of 28 maxillary premolars were used and divided into four groups. Tooth preparation was performed on the buccal surface until the dentin was exposed. Twenty-eight pieces lithium disilicate with diameter 3 mm x 1 mm cemented divided into four groups based. In group IA, preheated microhybrid composite resin with the total-etch adhesive technique was applied, while group IB received preheated microhybrid composite resin with the self-etch adhesive technique. Group IIA involved the application of preheated nanohybrid composite resin with the total-etch technique, and group IIB involved the application of preheated nanohybrid composite resin with the self-etch technique. After the cementation procedures, the samples were immersed in artificial saliva at 37°C for 24 hours. The shear bond strength testing was conducted using a universal testing machine. Data were analyzed with a two-way ANOVA and Post Hoc LSD with a 95% confidence level.

The two-way ANOVA results indicated a significant effect of the luting material, adhesive application technique, and the interaction between the luting material and adhesive technique on the shear bond strength of lithium disilicate ($p < 0,05$). The conclusion of this study is that preheated microhybrid composite resin produced higher shear bond strength with lithium disilicate compared to preheated nanohybrid composite resin, and the total-etch adhesive technique resulted in higher shear bond strength than the self-etch technique.

Keywords: preheated composite resin, universal adhesive, total-etch, self-etch, shear bond strength