PENGARUH JENIS DAN TEKNIK APLIKASI BAHAN ADHESIF PADA *IMMEDIATE DENTIN SEALING* TERHADAP KEKUATAN GESER PELEKATAN *LITHIUM DISILICATE*

INTISARI

Immediate Dentin Sealing (IDS) merupakan perlakuan aplikasi bahan adhesif langsung setelah dentin dipreparasi untuk restorasi indirek untuk mencegah kontaminasi saliva, debris dan bakteri masuk ke dalam tubulus dentin yang dapat menyebabkan penurunan kekuatan ikatan bahan restorasi. Tujuan penelitian untuk melihat pengaruh perbedaan jenis dan teknik aplikasi bahan adhesif IDS terhadap kekuatan geser pelekatan *lithium disilicate*. Bahan adhesif yang digunakan yaitu bahan adhesif generasi 8 dan universal yang diaplikasikan dengan teknik *total-etch* dan *self-etch*.

Subjek penelitian 28 gigi premolar atas, dibagi dalam empat kelompok dan dipreparasi mahkota bagian bukal, kemudian diberi perlakuan IDS kelompok I adhesif generasi 8 teknik *total-etch* ; kelompok II adhesif generasi 8 teknik *self-etch*; kelompok III adhesif universal teknik *total-etch*; kelompok IV adhesif universal teknik *self-etch. Lithium disilicate* disementasi pada permukaan dentin yang telah di IDS dan di rendam dalam akuades selama 24 jam sebelum dilakukan uji kekuatan geser pelekatan. Nilai kekuatan geser didapatkan dalam satuan MegaPascal (MPa) kemudian dianalisis menggunakan ANAVA dua jalur dan *Post Hoc LSD* dengan tingkat kepercayaan 95%.

Hasil uji statistik dengan ANAVA dua jalur menunjukkan adanya pengaruh signifikan perbedaan jenis bahan adhesif dan teknik aplikasi terhadap kekuatan geser pelekatan ($p < 0,05$). Kesimpulan penelitian adalah terdapat perbedaan penggunaan bahan dan teknik yang berbeda pada IDS terhadap uji kekuatan geser pelekatan *lithium disilicate*. Bahan adhesif generasi 8 teknik *total-etch* menunjukkan kekuatan geser pelekatan paling rendah.

Kata kunci: adhesif generasi delapan, adhesif universal, IDS, kekuatan geser pelekatan

EFFECT OF TYPE AND TECHNIQUE OF ADHESIVE AND ITS APPLICATION ON IMMEDIATE DENTIN SEALING (IDS) ON SHEAR BOND STRENGHT OF LITHIUM DISILICATE

ABSTRACT

Immediate Dentin Sealing (IDS) is a treatment involving the application of adhesive material immediately after dentin preparation for indirect restorations to prevent contamination by saliva, debris, and bacteria from entering the dentin tubules, which can lead to a decrease in the bonding strength of the restoration material. The aim of this study is to investigate the influence of different types and techniques of adhesive material application in IDS on the shear bond strength of lithium disilicate. The adhesive materials used are generation 8 adhesive and universal adhesive, applied using the total-etch and self-etch techniques.

Twenty eight upper premolar teeth were divided into four groups and prepared on the buccal crown. They were then subjected to IDS treatment as follows: Group I with generation 8 adhesive using the total-etch technique, Group II with generation 8 adhesive using the self-etch technique, Group III with universal adhesive using the total-etch technique, and Group IV with universal adhesive using the self-etch technique. Lithium disilicate was cemented onto the IDS-treated dentin surface and immersed in distilled water for 24 hours before conducting the shear bond strength test. The shear bond strength values were measured in MegaPascals (MPa) and analyzed using two-way ANOVA and Post Hoc LSD with a 95% confidence level.

The statistical analysis with two way ANOVA results showed a significant influence of the different types of adhesive material and application techniques on shear bond strength ($p < 0.05$). In conclusion, this study found that the use of different adhesive materials and techniques in IDS significantly affects the shear bond strength of lithium disilicate. Eighth generation adhesive with the total-etch technique exhibited the lowest shear bond strength.

Keywords: eighth generation adhesive, universal adhesive, IDS, shear bond strength