INTISARI

Semen resin kedokteran gigi adalah bahan yang digunakan untuk melekatkan gigi tiruan cekat pada gigi. Semen resin terbagi menjadi konvensional dan *self-adhesive*. Berbagai macam *dentin pretreatment* telah diperkenalkan, seperti pengetsaan asam dan abrasi udara. Tujuan penelitian ini adalah untuk mengkaji pengaruh *dentin pretreatment air abrasion* terhadap kekuatan geser semen resin *self-adhesive* dan konvensional pada restorasi zirkonia.

Sampel gigi premolar direndam pada larutan akuabides dengan timol 0.1% untuk mencegah pertumbuhan bakteri. Sampel gigi ditanam pada kotak akrilik dan dipotong dengan bur *disc diamond* kecepatan150-200 rpm untuk mendapatkan permukaan dentin yang rata. Sampel gigi kemudian dibagi menjadi 3 kelompok. Kelompok pertama diberikan perlakuan *dentin pretreatment air abrasion* dengan serbuk natrium bikarbonat 35µm tekanan 80 psi selama 15 detik. Kelompok kedua diberikan perlakuan *dentin pretreatment air abrasion* dengan serbuk aluminium oksida 53µm tekanan 80 psi selama 15 detik. Kelompok ketiga diberikan perlakuan *dentin pretreatment* dengan etsa asam fosfat 2% selama 15 detik. Masing-masing kelompok di sementasi dengan sampel zirkonia menggunakan semen resin konvensional dan *self* adhesive. Uji kekuatan geser dilakukan dengan menggunakan *universal testing machine.* Pengamatan dengan *scanning electrone microscope* dilakukan untuk mengamati permukaan dentin.

Uji Anava dua jalur dilanjutkan dengan uji Post-Hoc LSD menunjukkan adanya perbedaan bermakna ($p<0,05$) kekuatan geser antara kelompok dentin pretreatment natrium bikarbonat dan aluminium oksida, perbedaan bermakna antara kekuatan geser semen resin konensional dan semen resin *self-adhesive,* serta interaksi antara jenis semen dan jenis *dentin pretreatment* terhadap kekuatan geser. Kesimpulan penelitian ini adalah *dentin pretreatment air abrasion* berpengaruh meningkatkan kekuatan geser semen resin konvensional dan *self-adhesive.*

ABSTRACT

Dental resin cement is a material used to attach crown and bridge to teeth. Resin cement is divided into conventional and self-adhesive. Various kinds of dentin pretreatments have been introduced, such as acid etching and air abrasion. The purpose of this study was to examine the effect of dentin pretreatment air abrasion on the shear strength of self-adhesive and conventional resin cements in zirconia restorations.

Samples of premolars were immersed in aquabides solution with 0.1% thymol to prevent bacterial growth. The tooth sample was implanted in an acrylic box and cut with a diamond disc bur at 150-200 rpm to obtain an even dentin surface. The tooth samples were then divided into 3 groups. The first group was given dentin pretreatment air abrasion with 35µm sodium bicarbonate powder at 80 psi pressure for 15 seconds. The second group was given dentin pretreatment air abrasion with 53µm aluminum oxide powder at 80 psi pressure for 15 seconds. The third group was given pretreatment with 2% phosphoric acid etching for 15 seconds. Each group was cemented with zirconia samples using conventional resin cement and self adhesive. The shear strength test was carried out using a universal testing machine. Observations with a scanning electron microscope were carried out to observe the dentin surface.

The two-way ANOVA test followed by Post-Hoc LSD test showed a significant difference ($p<0.05$) in shear strength between the sodium bicarbonate and aluminum oxide pretreated dentin groups, a significant difference between the shear strength of conventional resin cement and self-adhesive resin cement, as well as an interaction between the type of cement and the type of dentin pretreatment on shear strength. The conclusion of this study is dentin pretreatment air abrasion improving the shear strength of conventional and self-adhesive resin cements.