

## INTISARI

Keberhasilan klinis pada restorasi bahan keramik dipengaruhi oleh retensi mekanik dari preparasi, retensi dari permukaan internal bahan keramik dan resistensi dari semen yang digunakan. Penelitian ini bertujuan untuk mengkaji pengaruh jenis *surface treatment* dan suhu resin komposit *preheated* sebagai bahan *luting* terhadap kekuatan geser perlekatan gigi tiruan cekat *lithium disilicate*.

Penelitian dilakukan dengan menggunakan sampel *lithium disilicate* sebanyak 24 buah dengan ukuran diameter 5,5 mm dan tinggi 3 mm yang dibagi menjadi 8 kelompok (n=3) berdasarkan jenis *surface treatment* (SECP dan HF 5% + silan) dan suhu resin komposit *preheated* ( 37 °C, 54 °C, 68°C) serta semen resin sebagai kontrol. Pengukuran kekuatan geser perlekatan dengan menggunakan *universal testing machine*. Hasil penelitian dianalisis dengan analisis variansi (Anava) dua jalur dan dilanjutkan dengan uji HSD (*Highest Significance Different*).

Hasil penelitian menunjukkan kelompok kontrol dengan *surface treatment* SECP memiliki kekuatan geser tertinggi yaitu 17,67 MPa diikuti kelompok resin komposit *preheated* pada suhu 68 °C dengan *surface treatment* SECP yaitu 16,68 MPa. Hasil Anava dua jalur dan uji *post hoc* HSD menunjukkan terdapat perbedaan bermakna kekuatan geser gigi tiruan cekat *lithium disilicate* antara jenis *surface treatment* dan suhu resin komposit *preheated* (p<0,05). Kesimpulan penelitian ini adalah *surface treatment* pada *lithium disilicate* dengan menggunakan SECP memiliki kekuatan geser lebih tinggi dibandingkan menggunakan HF 5%+ silan dan resin komposit *preheated* dengan suhu 68 °C memiliki kekuatan geser perlekatan paling tinggi dibandingkan dengan kelompok suhu lain.

**Kata kunci:** *lithium disilicate*, *preheated composite*, *surface treatment*, SECP, *kekuatan geser*.

## ABSTRACT

Clinical success in the restoration of ceramic materials is influenced by mechanical retention of the preparation, retention of the internal surface of the ceramic material and the resistance of the cement used. This study aims to examine the effect of the type of surface treatment and preheated composite resin temperature as luting material on disilicate lithium fixed denture shear strength.

The study was done using 24 pieces of lithium disilicate sample with diameter of 5.5 mm and 3 mm height which were divided into 8 groups ( $n = 3$ ) based on surface treatment types (SECP and HF 5% + silane) and preheated composite resin temperatures (37 °C, 54 °C, 68 °C respectively) with resin cement as a control. Shear bond strength measurement was done using universal testing machine. The results of the study were analyzed by two-way Analysis of Variance (ANOVA) and continued with the HSD (Highest Significance Different) test.

The results showed that the control group with SECP surface treatment had the highest shear strength of 17.67 MPa followed by the group of preheated composite resin at 68 °C with the SECP surface treatment of 16.68 MPa. Two-way ANOVA results and post hoc HSD test showed significant differences in the shear strength of lithium disilicate fixed denture between surface treatment types and preheated composite resin temperatures ( $p < 0.05$ ). The conclusion of this study is that surface treatment of lithium disilicate by using SECP surface treatment has a higher shear strength than using HF 5% + silane and preheated composite resin with the temperature of 68 °C having the highest attachment shear strength compared to other temperature groups.

**Key word:** *lithium disilicate, preheated composite, surface treatment, SECP, shear bond strength*