PENGARUH *SURFACE TREATMENT* PADA INTI RESIN KOMPOSIT TERHADAP KEKUATAN GESER PELEKATAN SEMEN *LUTING* BIOAKTIF

INTISARI

Paparan lingkungan rongga mulut pada inti resin komposit dalam jangka waktu tertentu dapat menurunkan kekuatan ikatan inti resin komposit dengan material *luting* yang akan dilekatkan. Salah satu faktor yang mempengaruhi kekuatan ikatan inti resin komposit dengan material baru yang akan dilekatkan yaitu *surface treatment*. Tujuan penelitian ini adalah untuk mengetahui bagaimana pengaruh *surface treatment* pada inti resin komposit terhadap kekuatan geser pelekatan semen *luting* bioaktif.

Subjek penelitian berupa 28 inti resin komposit berbentuk silinder dengan diameter 5 mm dan tinggi 4 mm yang dibagi menjadi 4 kelompok, yaitu (1) kelompok tanpa *surface treatment*, (2) kelompok *surface treatment* etsa, (3) kelompok *surface treatment* etsa dan *bonding*, serta (4) kelompok *surface treatment* etsa, silan, dan *bonding*. Pengukuran kekuatan geser pelekatan semen *luting* bioaktif pada inti resin komposit dilakukan dengan *universal testing machine.* Hasil penelitian dianalisis menggunakan analisis variansi (ANAVA) satu jalur dan dilanjutkan dengan uji *Least Significance Difference (LSD).*

Hasil uji statistik menunjukkan bahwa terdapat pengaruh *surface treatment* pada inti resin komposit terhadap kekuatan geser pelekatan semen *luting* bioaktif ($p<0,05$). Hasil penelitian ini menyimpulkan bahwa kelompok tanpa *surface treatment* serta kelompok *surface treatment* etsa memiliki kekuatan geser pelekatan paling rendah, diikuti oleh kelompok *surface treatment* etsa dan *bonding,* dan kekuatan geser pelekatan paling tinggi dimiliki oleh kelompok *surface treatment* etsa, silan, dan *bonding.*

Kata kunci: *surface treatment*, inti resin komposit, kekuatan geser, semen *luting* bioaktif

THE EFFECT OF SURFACE TREATMENT ON THE SHEAR BOND STRENGTH OF BIOACTIVE LUTING CEMENT TO COMPOSITE RESIN CORE

ABSTRACT

Exposure of oral environment to composite resin core for a certain time may reduce the bond strength of composite resin core. The surface treatment is one of the factors that influence the bond strength of composite resin core to new material that will be bonded. The purpose of this study was to determine the effect of surface treatment on the shear bond strength of bioactive luting cement to composite resin core.

The subjects were 28 cylindrical composite resin cores with 4 mm height and 5 mm in diameter. The subjects were divided into 4 groups: (1) without surface treatment, (2) etching, (3) etching and bonding, and (4) etching, silane, and bonding. Measurement of shear bond strength between bioactive luting cement and composite resin core was carried out using a universal testing machine. Data were analyzed using one-way analysis of variance (ANOVA) and continued with the Least Significance Difference (LSD) test.

Statistical analysis reveals a significant effect of surface treatment on the shear bond strength of bioactive luting cement to composite resin core ($p < 0.05$). The results of this study concluded that the group without surface treatment as well as the group with etching surface treatment had the lowest shear bond strength, followed by the group with etching and bonding surface treatment, and the highest shear bond strength belonged to the group with etching, silane, and bonding surface treatment.

Keywords: *surface treatment, composite resin core, shear bond strength, bioactive luting cement*