

PENGARUH *DESENSITIZING AGENT* FLUOR DAN NON-FLUOR PASCA *IN-OFFICE BLEACHING* TERHADAP KEKUATAN GESER *BRACKET* LOGAM DENGAN SEMENTASI RESIN KOMPOSIT

INTISARI

Tindakan *bleaching* dan perawatan ortodonti sering dijadikan langkah awal dalam usaha memperbaiki penampilan. Tindakan *in-office bleaching* dapat menyebabkan sensitivitas gigi meningkat sehingga digunakan *desensitizing agent*. Tindakan *in-office bleaching* dan *desensitizing agent* berbasis fluor atau non-fluor akan memengaruhi morfologi permukaan email gigi. Perubahan morfologi tersebut berpotensi memengaruhi kekuatan geser dan ikatan *bracket* pada perawatan ortodonti. Penelitian ini bertujuan menganalisis pengaruh *desensitizing agent* fluor dan non-fluor pasca *in-office bleaching* terhadap kekuatan geser *bracket* logam dengan sementasi resin komposit.

Dua puluh tujuh gigi premolar pasca pencabutan dibagi menjadi 3 kelompok: kelompok kontrol, kelompok *desensitizing agent* fluor, dan kelompok *desensitizing agent* non-fluor. Prosedur *bonding bracket* dilakukan pada ketiga kelompok kemudian dilanjutkan dengan uji kekuatan geser menggunakan *universal testing machine* dengan kecepatan 1 mm/menit. Analisis skor ARI dilakukan setelah uji kekuatan geser. Data hasil penelitian uji kekuatan geser dianalisis menggunakan *one way ANOVA* dilanjutkan uji *Post Hoc Tukey*. Data analisis skor ARI dianalisis menggunakan *Kruskal-Wallis* dan uji *Mann-Whitney*. Seluruh data dianalisis dengan tingkat kepercayaan 95%.

Hasil analisis statistic menunjukkan terjadi peningkatan kekuatan geser secara signifikan ($p < 0,05$) pada kelompok *desensitizing agent* fluor dibandingkan kelompok *desensitizing agent* non-fluor dan kelompok kontrol. Rerata kekuatan geser tertinggi terdapat pada kelompok *desensitizing agent* fluor. Analisis skor ARI menunjukkan terdapat perbedaan antara kelompok *desensitizing agent* fluor dengan kelompok *desensitizing agent* non-fluor dan kontrol. Kesimpulan penelitian ini adalah *desensitizing agent* fluor pasca *in-office bleaching* meningkatkan kekuatan geser dan bahan *adhesive* lebih banyak tertinggal di permukaan gigi dibandingkan *desensitizing agent* non-fluor pasca *in-office bleaching* pada *bracket* logam dengan sementasi resin komposit.

Kata kunci: *in-office bleaching*, *desensitizing agent*, kekuatan geser, *bracket*, logam

EFFECT OF DESENSITIZING AGENTS POST IN-OFFICE *BLEACHING* ON SHEAR BOND STRENGTH OF METAL BRACKETS WITH COMPOSITE RESIN CEMENTATION

ABSTRACT

Bleaching and orthodontic treatment are often used as the first steps to improving a person's appearance. One of the adverse effects of in-office *bleaching* is tooth hypersensitivity, which could be neutralized with a desensitizing agent. In-office bleaching and the application of desensitizing agents will affect the morphology of the enamel surface. These morphological changes have a potential effect on shear bond strength (SBS) and bonding brackets in orthodontic treatment. This study aims to analyze the effect of fluoride and non-fluoride desensitizing agents post-in-office bleaching on the SBS of metal brackets with resin composite cementation.

Twenty-seven post-extraction premolars were divided into 3 groups: control, fluoride desensitizing agent, and non-fluoride desensitizing agent group. The bonding bracket procedure was performed on the three groups, followed by the SBS test using a universal testing machine. ARI score analysis was carried out after the shear bond strength test. The data from SBS were analyzed using one-way ANOVA followed by a post hoc Tukey test with a 5% significance level. The data for ARI score analysis were analyzed using the Kruskal-Wallis test followed by the Mann-Whitney test with a 5% significance level.

The results showed that shear bond strength increased significantly in the fluoride desensitizing agent group compared to the non-fluoride desensitizing agent group and the control group ($p < 0.05$). The highest average shear bond strength was found in the fluoride desensitizing agent group. ARI score analysis showed that there were differences between the fluoride desensitizing agent group compared to the non-fluoride desensitizing agent group and the control group. The conclusion of this research is that the application of desensitizing agent fluoride post-in-office bleaching increased the shear bond strength and left more adhesive on the tooth surface compared to non-fluoride desensitizing agents on metal brackets with composite resin cementation.

Keywords: in-office bleaching, desensitizing agent, shear bond strength, bracket, metal