

PENGARUH FREKUENSI APLIKASI SODIUM ASKORBAT 35% KOMBINASI SURFAKTAN 0,4% DAN BLEACHING INTRAKORONAL YANG BERBEDA TERHADAP KEKUATAN GESER RESIN KOMPOSIT

INTISARI

Penambahan frekuensi aplikasi hidrogen peroksida (HP) 35% meningkatkan residu radikal bebas. Radikal bebas dapat dihilangkan dengan aplikasi sodium askorbat (SA) 35% kombinasi surfaktan 0,4%. Penambahan frekuensi aplikasi sodium askorbat 35% kombinasi surfaktan 0,4% diperlukan untuk menghilangkan peningkatan residu radikal bebas. Tujuan penelitian ini untuk mengetahui pengaruh frekuensi aplikasi SA 35% kombinasi surfaktan 0,4% dan *bleaching* intrakoronal yang berbeda terhadap kekuatan geser pelekatan resin komposit.

Penelitian menggunakan 48 gigi premolar yang dibagi menjadi 2 kelompok masing-masing 24 gigi. Kelompok I diaplikasi 0,01ml HP 35% sebanyak dua kali aplikasi, kelompok II diaplikasi 0,01ml HP 35% tiga kali aplikasi. Spesimen disimpan dalam tabung tertutup selama 5 hari per sesi, kemudian dicuci, dikeringkan dan selanjutnya masing-masing kelompok dibagi menjadi 3 sub kelompok perlakuan. Sub kelompok A didiamkan selama 7 hari, sub kelompok B diaplikasi dua kali SA 35% kombinasi surfaktan 0,4%, sub kelompok C diaplikasi tiga kali SA 35% kombinasi surfaktan 0,4%. Semua spesimen selanjutnya ditumpat resin komposit dan direndam saliva buatan pH 7 dalam inkubator selama 7 hari, lalu dilakukan uji kekuatan geser dengan *Universal Testing Machine* dengan kecepatan 0,5mm/menit.

Hasil uji ANAVA dua jalur menunjukkan bahwa terdapat pengaruh yang signifikan frekuensi aplikasi sodium askorbat dan frekuensi *bleaching* intrakoronal yang berbeda terhadap kekuatan geser resin komposit ($p < 0,01$). Kesimpulan penelitian yaitu dua kali aplikasi sodium askorbat 35% kombinasi surfaktan 0,4% pada dua kali aplikasi *bleaching* memiliki kekuatan geser terbesar dibandingkan dengan kelompok lain.

Kata Kunci: hidrogen peroksida; sodium askorbat; surfaktan; kekuatan geser resin komposit

EFFECT OF APPLICATION FREQUENCY OF SODIUM ASCORBATE 35% COMBINED WITH 0.4% SURFACTANT AND DIFFERENT INTRACORONAL BLEACHING ON SHEAR STRENGTH OF COMPOSITE RESINS

ABSTRACT

Increase the frequency of application of 35% hydrogen peroxide (HP) increases free radical residues. Free radicals can be removed by application of 35% sodium ascorbate (SA) combined with 0.4% surfactant. An additional frequency of application of 35% sodium ascorbate combined with 0.4% surfactant is required to eliminate the increase in free radical residues. The aim of this research is to determine the effect of the frequency of application of 35% SA combined with 0.4% surfactant and different intracoronar bleaching on the shear strength of composite resin bonding.

The study used 48 premolar teeth divided into 2 groups of 24 teeth each. Group I was applied with 0.01ml of HP 35% twice, group II was applied with 0.01ml of HP 35% three times. The specimens were stored in a closed tube for 5 days per session, then washed, dried and then each group was divided into 3 sub-treatment groups. Sub-group A was left for 7 days, sub-group B was applied twice with SA 35% combined with 0.4% surfactant, sub-group C was applied three times with SA 35% combined with 0.4% surfactant. All specimens were then filled with composite resin and soaked in pH 7 artificial saliva in an incubator for 7 days, then shear strength tests were carried out with a Universal Testing Machine at a speed of 0.5mm/minute.

The results of the two-way ANOVA test showed that there was a significant effect of the frequency of sodium ascorbate application and different intracoronar bleaching frequencies on the shear strength of composite resin ($p < 0.01$). The conclusion of the study was that two applications of 35% sodium ascorbate combined with 0.4% surfactant in two bleaching applications had the greatest shear strength compared to other groups.

Keywords: hydrogen peroxide; sodium ascorbate; surfactant; shear bond strength of composite resin