ABSTRACT

Background: *The most dominant cause of root canal treatment failure is non-hermetic obturation. It could be prevented with the use of sealer material. The sealer that has a good bond with the dentin wall is sealer epoxy bis-phenol resin sealer and Glass Ionomer Cement. A natural material that could dissolve gutta-percha in root canal re-treatment is eucalyptus oil. The eucalyptus oil has an antimicrobial effect, bio-compatible and recommended for use in root canal re-treatment.* ***Objective:*** *To determine the effect of epoxy bis-phenol resin sealer and Glass Ionomer Cement sealer in softening the gutta-percha using cajuput oil.* ***Methods:*** *The design of this study was pure laboratory experimental. This study was using 24 samples of single root canal acrylic block. The samples were treated differently by the type of sealer used and incubation time (15 days, 22 days, 29 days). The data were processed using one-way ANOVA and Post-Hoc Tukey test with significance level 95% (p <0,05).* ***Result:*** *There was a significant effect of epoxy bis-phenol resin sealer and Glass Ionomer Cement sealer in softening gutta-percha using cajuput oil. The result of one-way ANOVA analysis obtained a significance value of 0.000 (p <0,05). The results of Post-Hoc test analysis showed that the resin sealer which was incubated for 15 days after contact with cajuput oil for 5 minutes had a higher softening value compared to the Glass Ionomer Cement sealer which was incubated for 15 days, 22 days and 28 days after contacting with cajuput oil for 5 minutes.* ***Conclusion:*** *Sealer epoxy bis-phenol resin is easier to remove than Glass Ionomer Cement sealer with cajuput oil solvent.*

Keywords*: epoxy bis-phenol resin sealer, Glass Ionomer Cement sealer, Softening gutta-percha, Cajuput oil solvent*

INTISARI

Latar belakang: Penyebab kegagalan perawatan saluran akar ulang yang paling dominan adalah obturasi yang tidak hermetis. Hal ini dapat dicegah dengan penggunaan bahan sealer. Sealer yang memiliki ikatan yang baik dengan dinding dentin yaitu sealer *epoxy bis-phenol resin* dan sealer *Glass Ionomer Cement*. Bahan alami yang dapat melarutkan gutaperca pada perawatan saluran akar ulang yaitu minyak kayu putih. Minyak kayu putih mempunyai efek antimikroba, biokompatibel dan direkomendasikan untuk digunakan dalam perawatan saluran akar ulang. **Tujuan:** Untuk mengetahui pengaruh sealer *epoxy bis-phenol resin* dan *Glass Ionomer Cement* terhadap perlunakan gutaperca menggunakan *cajuput oil*. **Metode:** Desain penelitian ini adalah eksperimental laboratoris murni. Penelitian ini menggunakan 24 sampel blok akrilik saluran akar tunggal. Sampel penelitian diberi perlakuan berbeda berupa jenis sealer yang digunakan dan lama waktu inkubasi (15 hari, 22 hari, 29 hari). Data diolah dengan menggunakan *one-way* ANOVA dan uji Post Hoc Tukey dengan tingkat kemaknaan 95% ($p<0,05$). **Hasil:** Terdapat pengaruh sealer *epoxy bis-phenol resin* dan *Glass Ionomer Cement* terhadap perlunakan gutaperca menggunakan cajuput oil. Hasil analisis *one-way* ANOVA didapatkan nilai signifikansi 0,000 ($p<0,05$). Hasil analisi uji Post Hoc menunjukan bahwa sealer *epoxy bis-phenol resin* yang didiamkan selama 15 hari setelah berkontak dengan *cajuput oil* selama 5 menit memiliki nilai perlunakkan lebih besar jika dibandingkan dengan sealer *Glass Ionomer Cement* yang didiamkan selama 15 hari,22 hari dan 28 hari setelah berkontak dengan *cajuput oil* selama 5 menit. **Kesimpulan:** Sealer *epoxy bis-phenol resin* lebih mudah dibersihkan daripada sealer *Glass Ionomer Cement* dengan pelarut *cajuput oil.*

Kata Kunci : Sealer epoxy bis-phenol resin, sealer Glass Ionomer Cement, Perlunakan gutaperca, Bahan pelarut cajuput oil