

PENGARUH LAMA KONTAK PELARUT *D-LIMONENE* DENGAN BAHAN PENGISI SALURAN AKAR TERHADAP KEBERSIHAN DINDING SALURAN AKAR PADA PERAWATAN ULANG SALURAN AKAR

INTISARI

Pengambilan bahan pengisi saluran akar merupakan bagian yang utama pada perawatan ulang saluran akar karena sisa bahan pengisi saluran akar yang melekat pada dinding dentin membawa mikroorganisme dan sisa jaringan nekrotik yang dapat memicu timbulnya infeksi periradikuler yang persisten. Pengambilan bahan pengisi saluran akar dapat dilakukan dengan memakai instrumen putar yang dikombinasikan dengan pelarut organik. Tujuan penelitian ini untuk mengevaluasi pengaruh lama kontak pelarut *D-Limonene* dengan bahan pengisi saluran akar terhadap kebersihan dinding saluran akar pada perawatan ulang saluran akar.

Dua puluh delapan gigi premolar mandibula yang telah diekstraksi, dipreparasi dengan teknik *crown down*. Obturasi dengan teknik *single cone* menggunakan guta perca dan siler berbasis resin epoksi, kemudian gigi diinkubasi selama 30 hari. Bahan pengisi saluran akar diambil menggunakan *rotary retreatment file*. Subjek penelitian dibagi secara acak menjadi 4 kelompok perlakuan masing-masing 7 gigi. Tiga dari empat kelompok ditetesi 0,6 ml *D-limonene* : kelompok 1 (lama kontak 1 menit), kelompok 2 (lama kontak 2 menit), kelompok 3 (lama kontak 3 menit), dan kelompok 4 sebagai kontrol negatif. Gigi dibelah menjadi dua arah bukolingual, dilakukan pemeriksaan menggunakan mikroskop stereo pembesaran 8x. Jumlah bahan pengisi saluran akar pada dinding saluran akar dianalisis menggunakan *Image J software*. Analisis data menggunakan uji ANAVA satu jalur dengan tingkat kepercayaan 95% ($\alpha=0,05$), *post hoc* menggunakan uji *Least Significant Difference* (LSD).

Uji ANAVA satu jalur menunjukkan terdapat pengaruh lama kontak pelarut *D-Limonene* dengan bahan pengisi saluran akar terhadap kebersihan dinding saluran akar pada perawatan ulang saluran akar. ($p<0,05$). Kesimpulan bahwa lama kontak pelarut *D-limonene* dengan bahan pengisi saluran akar berpengaruh terhadap kebersihan dinding saluran akar pada perawatan ulang saluran akar.

Kata kunci: *D-limonene*, kebersihan dinding saluran akar, guta perca, siler berbasis resin epoksi

THE INFLUENCE OF CONTACT TIME BETWEEN D-LIMONENE AND ROOT CANAL FILLING MATERIALS ON THE CLEANLINESS OF ROOT CANAL WALL OF ENDODONTIC RETREATMENT

ABSTRACT

Removing of root canal filling materials is the most important factor on endodontic retreatment because the residues of root canal materials adhering to dentinal wall leave microorganism and remained necrotic tissues which can lead persistent periradicular infection. Removing of root canal materials can be done by using rotary retreatment files combined with the organic solvent. The goal of this research is to evaluate the influence of contact time between D-Limonene and root canal filling materials on the cleanliness of root canal wall of endodontic retreatment.

Twenty-eight extracted mandibular premolar were prepared with the crown-down technique. Obturation with single cone technique using gutta-percha and epoxy resin-based sealers, the teeth were stored in the incubator for 30 days. Root canal filling materials were removed using rotary retreatment files. The subjects were randomly divided into four groups of 7. Three groups were treated with a drop of 0,6 ml D-limonene where 1st group (1 minute contact time), 2nd group (2 minutes contact time), 3rd group (3 minutes contact time), and 4th group as negative control. Teeth were sectioned buccolingually, examined using a stereo microscope at 8x magnification. The residual amount of gutta-percha and epoxy resin-based sealers on the root canal wall were analyzed using Image J software. Data were analyzed with one-way ANOVA at 95% confidence level ($\alpha=0,05$), post hoc using Least Significant Difference (LSD) test.

One-way ANOVA showed that there was an influence of contact time between D-Limonene and root canal filling materials on the cleanliness of root canal wall of endodontic retreatment ($p < 0.05$). It was concluded that the contact time between D-Limonene and root canal filling materials was affected on the cleanliness of root canal wall of endodontic retreatment.

Keywords: D-limonene, cleanliness of root canal wall, gutta percha, epoxy resin based sealer.