

ABSTRAK

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PERBEDAAN DAYA ANTIBAKTERI ANTARA SILER SALURAN AKAR BERBAHAN DASAR *MINERAL TRIOXIDE AGGREGATE*, *BIOCERAMIC*, DAN SENG OKSIDA EUGENOL TERHADAP *Enterococcus faecalis*

Latar Belakang. Daya antibakteri siler saluran akar berperan untuk menghilangkan mikroorganisme pada perawatan saluran akar dan meningkatkan keberhasilan perawatan. *Enterococcus faecalis* merupakan bakteri yang terdapat pada saluran akar dan memiliki sifat resisten terhadap antibakteri, serta menjadi penyebab kegagalan perawatan saluran akar. **Tujuan.** Penelitian ini bertujuan untuk mengetahui perbedaan daya antibakteri antara siler saluran akar berbahan dasar *mineral trioxide aggregate*, *bioceramic*, dan seng oksida eugenol terhadap *E. faecalis*. **Metode.** Penelitian ini menggunakan teknik difusi agar *Mueller-Hinton* yang telah diinokulasi bakteri *E. faecalis* (0,5 standar McFarland). Pada media agar dibuat 3 buah sumuran A-B-C berdiameter 6 mm dan kedalaman 4 mm membentuk segitiga sama sisi. Sumuran A diisi siler *mineral trioxide aggregate*, sumuran B diisi siler *bioceramic*, dan sumuran C diisi siler seng oksida eugenol, masing-masing sebanyak 0,1 ml segera setelah bahan dimanipulasi. Pengamatan daya antibakteri berupa diameter zona bening disekeliling sumuran berisi bahan siler setelah media agar diinkubasi pada suhu 37 °C selama 24 jam. Uji statistik menggunakan *One-Way* ANOVA dan Post-Hoc LSD. **Hasil.** Hasil penelitian menunjukkan terdapat perbedaan rerata diameter zona hambat antar kelompok siler dengan diameter terbesar pada siler seng oksida eugenol. Uji *One-Way* ANOVA dan Post-Hoc LSD menunjukkan terdapat perbedaan signifikan daya antibakteri antar siler berbahan dasar *mineral trioxide aggregate*, *bioceramic*, dan seng oksida eugenol terhadap bakteri *E. faecalis* (sig=0,000, p<0,05). Uji LSD (p<0,05). **Kesimpulan.** Simpulan penelitian ini adalah siler berbahan dasar seng oksida eugenol memiliki daya antibakteri lebih baik dibandingkan *bioceramic* dan *mineral trioxide aggregate* terhadap bakteri *E. faecalis*.

Kata Kunci : Antibakteri, siler saluran akar, *E. faecalis*.

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ABSTRACT

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DIFFERENCE BETWEEN ANTIBACTERIAL ACTIVITY OF MINERAL TRIOXIDE AGGREGATE, BIO CERAMIC, AND ZINC OXIDE EUGENOL AGAINST *Enterococcus faecalis*

Background. Antibacterial activity of root canal sealer material helps to eliminate microorganisms during root canal treatment thus increasing the success of treatment. Bacteria *E. faecalis* is the most often found microorganism in root canal treatment failure and known to has antibacterial resistance. **Purpose.** This study aimed to determine the difference between antibacterial activity of mineral trioxide aggregate, bioceramic, and zinc oxide eugenol against *E. faecalis*. **Method.** The study used the Mueller-Hinton agar diffusion test which was inoculated with culture of *E. faecalis* (0,5 McFarland standard). Three wells A-B-C were made on agar medium plate with a diameter of 6 mm and a depth of 4 mm form equalateral triangle. Wells A filled with mineral trioxide aggregate, wells B filled with bioceramic, and wells C filled with zinc oxide eugenol, approximately 0,1 ml. Immediately after manipulation using plastic instrument. Antibacterial activity was observed by measurement of clear zone area formed around wells after incubation at 37 °C for 24 hours. Statistic analysis using *One-Way ANOVA* and *Post-Hoc LSD*. **Result.** The data showed difference means of clear zone diameter among three groups, the biggest was in the zinc oxide eugenol group. Statistic analysis using *One-Way ANOVA* and *Post-Hoc Least Significance Different* test indicated significant differences between each groups against *E. faecalis* (sig=0,000, p<0,05). **Conclusion.** The conclusion of the study is sealer based of zinc oxide eugenol has an antibacterial activity better than bioceramic and mineral trioxide aggregate against *E. faecalis*.

Keyword : *Antibacterial, root canal sealer, E. faecalis.*

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