

ABSTRAK

Nama : Tessya Nitulo Permatasari Lahagu
Program Studi : Ilmu Kedokteran Gigi
Judul : Perbandingan Efektivitas Antibakteri Ekstrak Tumbuhan Serai Konsentrasi 25%, 50%, 75% dan 100% dengan Sodium Hipoklorit 2,5% dalam Menghambat Pertumbuhan Bakteri *Enterococcus faecalis*

Perawatan endodontik mengacu pada tindakan menghilangkan jaringan pulpa yang terinfeksi dan membentuk serta mengisi kembali saluran akar untuk mencegah bakteri masuk kedalam saluran akar. Kegagalan perawatan endodontik dapat disebabkan oleh bakteri *Enterococcus faecalis*. Bahan irigasi yang biasa digunakan adalah sodium hipoklorit. Sodium hipoklorit pada konsentrasi besar dapat toksik terhadap jaringan. Tumbuhan serai (*Cymbopogon citratus*) merupakan bahan alami yang bisa digunakan menjadi agen antibakteri. Tujuannya untuk mengetahui perbandingan efektivitas antibakteri ekstrak tumbuhan serai (*Cymbopogon citratus* (DC). Stapf) konsentrasi 25%, 50%, 75%, 100% dengan sodium hipoklorit 2,5% dalam menghambat pertumbuhan bakteri *Enterococcus faecalis*. Ekstrak tumbuhan serai (*Cymbopogon citratus* (DC). Stapf) dibuat dengan metode maserasi dan diubah ke dalam sediaan konsentrasi 25%, 50%, 75% dan 100%. Metode uji bakteri menggunakan metode difusi agar (Tes Kirby-Bauer) untuk melihat efektivitas antibakteri. Hasil uji statistik *one way ANOVA* menghasilkan nilai signifikansi $p=0,001$ ($p<0,05$) yang berarti ada perbedaan rata-rata diameter antara ekstrak tumbuhan serai konsentrasi 25%, 50%, 75%, dan 100% dengan sodium hipoklorit 2,5% yaitu $13,68\pm 1,34$ mm, $16,08\pm 0,87$ mm, $16,33\pm 0,35$ mm, $17,78\pm 0,93$ mm dan $7,83\pm 0,44$ mm dalam menghambat pertumbuhan bakteri *Enterococcus faecalis* dan ini diperkuat oleh uji *posthoc* Tukey HSD. Kesimpulan dari penelitian bahwa ada perbedaan antara efektivitas antibakteri ekstrak tumbuhan serai (*Cymbopogon citratus* (DC). Stapf) konsentrasi 25%, 50%, 75% dan 100% dengan sodium hipoklorit 2,5% dalam menghambat pertumbuhan bakteri *Enterococcus faecalis*.

Kata Kunci:

Sodium Hipoklorit, Tumbuhan Serai (*Cymbopogon citratus* (DC). Stapf), *Enterococcus faecalis*

ABSTRACT

Name : Tessya Nitulo Permatasari Lahagu
Program of Study : Dentistry
Judul : Comparison of Antibacterial Effectiveness of Lemongrass Plant Extract Concentration 25%, 50%, 75% and 100% with Sodium Hypochlorite 2.5% in Inhibiting the Growth of *Enterococcus faecalis* Bacteria

Endodontic treatment refers to the act of removing infected pulp tissue and forming and reforming the root canals to prevent bacteria from entering the root canals. Microbial infection in the root canal or in the periapical area is a factor that can lead to failure of root canal treatments. Endodontic treatment failure can be caused the bacteria *Enterococcus faecalis*. The irrigation agent commonly used is sodium hypochlorite. Sodium hypochlorite in large concentrations can be toxic to tissues. Lemongrass plant (*Cymbopogon citratus*) is a natural ingredient that can be used as an antibacterial agent. The aims of study to determine the comparison of the antibacterial effectiveness of lemongrass plant extracts (*Cymbopogon citratus* (DC). Staph) concentrations of 25%, 50%, 75%, 100% with 2.5% sodium hypochlorite in inhibiting the growth of the bacterium *Enterococcus faecalis*. Lemongrass plant extracts *Cymbopogon citratus* (DC). Staph) made by maceration method and converted into 25%, 50%, 75%, and 100%. The bacterial test method used the agar diffusion test (Kirby-Bauer test) to see the effectiveness of antibacterials. The result of the one way ANOVA statistical test resulted in significance value of $p=0,001$ ($p<0,05$) so that means there was differences in the average diameter of inhibitory lemongrass plant extracts (*Cymbopogon citratus* (DC). Staph) concentrations of 25%, 50%, 75%, 100% with 2.5% sodium hypochlorite in inhibiting the growth of the bacterium the results are 13.68 ± 1.34 mm, 16.08 ± 0.87 mm, 16.33 ± 0.35 mm, $17,78 \pm 0.93$ mm and 7.83 ± 0.44 mm and reinforced by the posthoc Tukey HSD test. The conclusion from the study that there is a difference between the antibacterial effectiveness of lemongrass plant extract (*Cymbopogon citratus* (DC). Staph) concentrations of 25%, 50%, 75% and 100% with 2.5% sodium hypochlorite in inhibiting the growth of the bacterium *Enterococcus faecalis*.

Keywords:

Sodium Hypochlorite, Lemongrass Plant (*Cymbopogon citratus* (DC). Staph), *Enterococcus faecalis*