INTISARI

Penyakit periodontal merupakan suatu proses patologis pada jaringan periodontal, salah satu bakteri anaerob gram negatif yang berperan adalah *Porphyromonas gingivalis*. Pemberian antibakteri merupakan salah satu pilihan dalam menangani infeksi. Aloe vera memiliki zat aktif yang berfungsi menghambat serta membunuh bakteri. *Oxygene dental gel* merupakan produk obat antibakteri dengan kandungan zat aktif klorin dioksida, yang menghasilkan oksigen sehingga akan menghambat kelangsungan hidup bakteri anaerob. Tujuan penelitian ini untuk mengetahui perbedaan efektifitas daya antibakteri *oxygene dental gel* dan *Aloe vera gel* terhadap pertumbuhan bakteri penyebab penyakit periodontal yaitu *Porphyromonas gingivalis* secara *in vitro*.

Penelitian menggunakan metode difusi sumuran dengan media MHA (*Mueller Hinton Agar*) yang dioleskan bakteri *Porphyromonas gingivalis*. Pada media dibuat 4 lubang sumuran berdiameter 6 mm. *Oxygene dental gel, aloe vera gel, Chlorhexidine gel* (kontrol positif) dan CMC Na (kontrol negatif) dimasukan ke dalam lubang sumuran masing-masing sebanyak 0,1 ml. Sediaan selanjutnya diinkubasi selama 24 jam pada suhu 37°C, kemudian dilakukan pengukuran menggunakan jangka sorong dengan skala 0,01 mm untuk membandingkan diameter daya hambat masing-masing gel. Data yang diperoleh dianalisis statistik menggunakan Analisis variansi (Anava) satu jalur dan uji LSD.

Hasil penelitian menunjukan rerata diameter zona hambat pada Oxygene dental gel (19,370±0,336) lebih tinggi dibandingkan dengan Aloe vera gel (17,955±0,969). Uji Anava menunjukan terdapat perbedaan bermakna pada pengaruh *Oxygene dental gel* dan *Aloe vera gel* terhadap *Porphyromonas gingivalis* ($p<0,05$). Uji LSD menunjukan terdapat perbedaan rerata yang bermakna ($p<0,05$) terhadap daya antibakteri setiap kelompok perlakuan. Kesimpulan yang diperoleh dari penelitian ini adalah *Oxygene dental gel* lebih efektif daripada *Aloe vera gel* dalam menghambat pertumbuhan bakteri penyebab penyakit periodontal *Phorphyromonas gingivalis.*

Kata Kunci: *Oxygene dental gel, Aloe vera gel,* daya antibakteri, *Porphyromonas gingivalis*

ABSTRACT

Periodontal disease is a pathological process in periodontal tissues. One of anaerobic gram-negative bacteria that play a role in is Porphyromonas gingivalis. Antibacterial giving is one of the options in dealing with infectious diseases. Aloe vera has an active substance that serves to inhibit and kill bacteria. Oxygene dental gel is one of the antibacterial drug product containing the active substance chlorine dioxide, which produces oxygen that would inhibit the survival of anaerobic bacteria. The purpose of this study was to determine differences in the effectiveness of antibacterial power Oxygene dental gel and Aloe vera gel on the growth of Porphyromonas gingivalis bacteria that cause periodontal disease is in vitro.

The method that used in this study was agar diffusion test with MHA (Mueller Hinton Agar) plate which had swabbed with Porphyromonas gingivalis. Four whells (diameter 6 mm) were made in plate and then dropped with oxygene dental gel, aloe vera gel, chlorhexidine gel as a positive control and CMC Na as a negative control are inserted into hole each 0.1 ml. The plate were incubated for 24 hours at the temperature of 37°C, The zones of inhibition were measured across the diameter using sliding caliper in scale of 0,01 mm. Statistical analysis was carried out using an one-way ANOVA followed by LSD test of multiple comparison.

The results showed a mean diameter of inhibition zone on Oxygene dental gel (19.370 ± 0.336) higher compared with Aloe vera gel (17.955 ± 0.969). ANOVA test showed a significant difference in the effect of Oxygene dental gel and Aloe vera gel against Porphyromonas gingivalis ($p < 0.05$). LSD test showed significant mean differences ($p < 0.05$) of the antibacterial activity of each treatment group. The conclusion of this study is Oxygene dental gel is more effective than the Aloe vera gel in inhibiting the growth of Porphyromonas gingivalis bacteria that causes periodontal disease. The conclusion from this study is there are differences in effectiveness between Oxygene dental gel and Aloe vera gel in inhibiting the growth of.

Keywords: Oxygene dental gel, Aloe vera gel, antibacterial activity, Porphyromonas gingivalis