

INTISARI

Penyakit periodontal merupakan inflamasi pada jaringan pendukung gigi yang disebabkan terutama oleh bakteri gram negatif anaerob, salah satunya adalah *Fusobacterium nucleatum*. *Ozone olive oil gel* dan *chlorine dioxide gel* adalah bahan oksidator tinggi yang memiliki efek antibakteri. Tujuan dari penelitian ini adalah untuk mengetahui perbedaan efektivitas daya antibakteri *ozone olive oil gel* dan *chlorine dioxide gel* terhadap pertumbuhan *Fusobacterium nucleatum* penyebab penyakit periodontal.

Bakteri *Fusobacterium nucleatum* dari sediaan agar miring di Laboratorium Riset Terpadu Fakultas Kedokteran Gigi Universitas Gadjah Mada dibiakkan pada media Mueller Hinton Agar (MHA). Biakan tersebut dibuat 2 sumuran dengan diameter 6 mm, diberi perlakuan *ozone olive oil gel* dan *chlorine dioxide gel* dengan metode difusi agar. Selanjutnya kelompok perlakuan diinkubasi selama 24 jam pada suhu 37°C. Daya antibakteri diidentifikasi dengan mengukur zona hambat yang terbentuk di sekitar sumuran menggunakan jangka sorong ketelitian 0.02 mm

Hasil penelitian menunjukkan rerata diameter zona hambat *chlorine dioxide gel* (22.64 mm) lebih tinggi dibandingkan dengan *ozone olive oil gel* (3.91 mm). Data yang diperoleh kemudian dianalisis menggunakan uji *T-Test*, menunjukkan signifikansi 0.000. Nilai signifikansi kurang dari 0.05 ($p < 0.05$) dapat diartikan terdapat perbedaan yang signifikan antara *ozone olive oil gel* dan *chlorine dioxide gel*. Kesimpulan yang diperoleh dari penelitian ini adalah *chlorine dioxide gel* lebih efektif dalam menghambat pertumbuhan *Fusobacterium nucleatum* dibandingkan dengan *ozone olive oil gel*.

Kata kunci : *ozone olive oil gel*, *chlorine dioxide gel*, *Fusobacterium nucleatum*, efektivitas antibakteri

ABSTRACT

*Periodontal disease is a pathological process in periodontal tissue. One of anaerobic gram-negative bacteria that play a role in is *Fusobacterium nucleatum*. Ozone olive oil gel and chlorine dioxide gel are the antibacterial are two strong oxidation material that has an antibacterial effect. The purpose of this study was to determine differences in the effectiveness of antibacterial power ozone olive oil gel and chlorine dioxide gel on the growth of *Fusobacterium nucleatum* bacteria that cause periodontal disease is in vitro.*

**Fusobacterium nucleatum* was isolated from slant agar in Integrated Research Laboratory, Faculty of Dentistry, Gadjah Mada University, cultured in Mueller Hinton Agar. Two wells with diameter 6 mm added with ozone olive oil gel and chlorine dioxide gel by well diffusion method. The bacteria were incubated at 37°C for 24 hours. The bacterial inhibitory activity was tested by measuring the diameter of inhibition zones with caliper 0.02 mm.*

*The result showed a mean diameter of inhibition zone on chlorine dioxide gel (22.64 mm) higher compared with ozone olive oil gel (3.91 mm). Statistical analysis was carried out using T-Test, shows the results of significance of 0.000. This value is less than 0.05 ($p < 0.05$), it means that are significant different between ozone olive oil gel and chlorine dioxide gel. The conclusion from this study is chlorine dioxide gel is more effective in inhibiting the growth of bacteria *Fusobacterium nucleatum* in comparison with ozone olive oil gel.*

Keywords : *ozone olive oil gel, chlorine dioxide gel, *Fusobacterium nucleatum*, antibacterial effectiveness*