

INTISARI

Periodontitis merupakan penyakit inflamasi jaringan periodontal yang diinisiasi oleh bakteri. Salah satu bakteri yang berperan dalam terjadinya periodontitis adalah *Aggregatibacter actinomycetemcomitans*. Terapi antimikroba secara lokal dibutuhkan untuk dapat menghantarkan zat antimikroba mencapai poket periodontal dan menjaga konsentrasi obat adekuat. Membran klorheksidin-gelatin-karbonat apatit adalah agen antimikroba mengandung klorheksidin dengan bahan pembawa obat berupa karbonat apatit dan gelatin sapi. Tujuan penelitian ini adalah untuk mengetahui efektivitas membran klorheksidin-gelatin-karbonat apatit terhadap bakteri periodontopatik *Aggregatibacter actinomycetemcomitans*.

Bakteri *Aggregatibacter actinomycetemcomitans* diinokulasikan pada tiga cawan petri berisi media *Mueller-Hinton agar* (MHA). Biakan bakteri diberi klorheksidin *chip*, membran klorheksidin-gelatin-karbonat apatit, dan membran gelatin-karbonat apatit untuk uji difusi cakram. Cawan petri diinkubasi selama 24 jam pada suhu 37°C dengan kadar CO₂ 5%. Daya antibakteri diidentifikasi dengan mengukur diameter zona hambat yang terbentuk di sekeliling cakram.

Data hasil penelitian dianalisis dengan ANAVA satu jalur, dilanjutkan dengan Post Hoc LSD. Tidak terdapat zona hambat pada membran gelatin-karbonat apatit. Terdapat perbedaan signifikan antara membran klorheksidin-gelatin-karbonat apatit dan klorheksidin *chip* dalam menghambat bakteri. Kesimpulan penelitian ini adalah membran klorheksidin-gelatin-karbonat apatit efektif menghambat pertumbuhan bakteri periodontopatik *Aggregatibacter actinomycetemcomitans*.

Kata kunci : membran klorheksidin-gelatin-karbonat apatit, *Aggregatibacter actinomycetemcomitans*, daya antibakteri, bahan pembawa obat

ABSTRACT

Periodontitis is an inflammatory disease of periodontal tissue which is initiated by bacteria. One of the bacteria which involves in the occurrence of periodontitis is *Aggregatibacter actinomycetemcomitans*. Local antimicrobial therapy is required to deliver anti-microbial agent as it reaches periodontal pocket and maintains adequate drug concentration. Gelatin-carbonated apatite membrane incorporated chlorhexidine is an antimicrobial agent. It contains of chlorhexidine with a drug delivery system in the form of bovine gelatin and carbonated apatite. This study is aimed to discover the effectivity of gelatin-carbonated apatite membrane incorporated chlorhexidine towards *Aggregatibacter actinomycetemcomitans*.

Aggregatibacter actinomycetemcomitans are inoculated in three petri dish containing of *Mueller-Hinton* agar. The breeding bacteria is given with chlorhexidine chip, gelatin-carbonated apatite membrane incorporated chlorhexidine, and gelatin-carbonated apatite membrane and placed into petri dish for disc diffusion test. Petri dish is incubated for 24 hours at 37⁰C with 5% CO₂. Antibacterial effect is identified by measuring the zone of inhibition formed around the disc.

The result data is analyzed with one-way ANAVA method followed by Post Hoc LSD. No inhibition zone formed on gelatin-carbonated apatite membrane. The data discovers the significant difference between gelatine-carbonated apatite membrane incorporated chlorhexidine and chlorhexidine chip to inhibit the growth of *Aggregatibacter actinomycetemcomitans*. Furthermore, this study concludes that that the gelatin-carbonated apatite membrane incorporated chlorhexidine is effective to inhibit the growth of *Aggregatibacter actinomycetemcomitans*.

Key words : gelatin-carbonated apatite membrane incorporated chlorhexidine, *Aggregatibacter actinomycetemcomitans*, antibacterial effect, drug delivery system.