

INTISARI

Aggregatibacter actinomycetemcomitans termasuk dalam bakteri penyebab periodontitis. Periodontitis memerlukan perawatan berupa *scaling and root planing* (SRP). Perawatan SRP saja kurang optimal untuk menghilangkan bakteri yang telah menginvasi jaringan sehingga memerlukan terapi tambahan antibakteri yaitu *Aloe vera*. *Aloe vera* saja tidak cukup untuk mencegah rekolonisasi bakteri sehingga ditambahkan probiotik *Lactobacillus casei*. Kedua bahan tersebut dapat bersinergi apabila digunakan dalam konsentrasi yang efektif. Penelitian ini dilakukan untuk mengetahui perbedaan efektivitas penambahan probiotik *Lactobacillus casei* konsentrasi 5%, 10% dan 15% pada *Aloe vera* 15% terhadap daya hambat pertumbuhan bakteri *Aggregatibacter actinomycetemcomitans*.

Metode uji daya hambat *Aggregatibacter actinomycetemcomitans* menggunakan difusi cakram pada *Mueller Hinton Agar*. Pengujian ini dibagi menjadi lima kelompok yaitu tiga kelompok perlakuan berupa *Lactobacillus casei* 5%, 10%, dan 15% yang ditambahkan pada *Aloe vera* 15%, kontrol positif klorheksidin glukonat 0,2%, dan *baseline* berupa *Aloe vera* 15%. Pengukuran diameter zona hambat dilakukan dengan mengukur zona bening di sekitar kertas cakram menggunakan *sliding calliper* kemudian data dianalisis dengan *One-way ANOVA* dan *Post hoc LSD*.

Hasil penelitian menunjukkan adanya perbedaan yang signifikan ($p < 0,05$) pada kelima kelompok perlakuan terhadap diameter zona hambat. Kesimpulan penelitian ini adalah zona hambat yang dihasilkan oleh penambahan *Lactobacillus casei* 15% pada *Aloe vera* 15% lebih besar dibandingkan konsentrasi 10%. Zona hambat yang dihasilkan dari penambahan *Lactobacillus casei* 10% pada *Aloe vera* 15% lebih besar dibandingkan konsentrasi 5%. Penambahan *Lactobacillus casei* 5% pada *Aloe vera* 15% memiliki zona hambat lebih besar dibandingkan *baseline*. Ketiga kelompok perlakuan tersebut memiliki daya hambat lebih kecil dibandingkan kontrol positif.

Kata kunci : *Aggregatibacter actinomycetemcomitans*, Periodontitis, Antibakteri, Daya hambat, *Lactobacillus casei*, *Aloe vera*.

ABSTRACT

Aggregatibacter actinomycetemcomitans is one of the bacteria that cause periodontitis. Periodontitis requires treatment in the form of scaling and root planing (SRP). SRP treatment is less than optimal to eliminate bacteria that have invaded the tissue so that additional antibacterial therapy such as *Aloe vera*, is needed. *Aloe vera* is not enough to prevent bacterial recolonization therefore probiotic *Lactobacillus casei* is added. Both ingredients can synergize when used in effective concentrations. The purpose of this study is to determine the difference in effectiveness of the addition of probiotic *Lactobacillus casei* at concentrations of 5%, 10% and 15% to *Aloe vera* 15% on the inhibition of bacterial growth of *Aggregatibacter actinomycetemcomitans*.

The research method of *Aggregatibacter actinomycetemcomitans* inhibition power using disc diffusion on *Mueller Hinton Agar*. This test was divided into five groups, three treatment groups are *Lactobacillus casei* 5%, 10%, and 15% added to *Aloe vera* 15%, positive control is chlorhexidine gluconate 0.2%, and baseline is *Aloe vera* 15%. Measurement of the diameter of the inhibition zone was done by measuring the clear zone around the disc paper using a sliding calliper then the data was analyzed with One-way ANOVA and Post hoc LSD.

The results was shown a significant difference ($p < 0.05$) in the five treatment groups on the diameter of the inhibition zone. The conclusion of this study is that the inhibition zone by the addition of *Lactobacillus casei* 15% in *Aloe vera* 15% is greater than the 10% concentration. The inhibition zone by the addition of *Lactobacillus casei* 10% on *Aloe vera* 15% is greater than the 5% concentration. The addition of *Lactobacillus casei* 5% to *Aloe vera* 15% had a greater zone of inhibition than the baseline. The three treatment groups had less inhibition than the positive control.

Keywords: *Aggregatibacter actinomycetemcomitans*, Periodontitis, Antibacterial, Inhibition power, *Lactobacillus casei*, *Aloe vera*.