COMBINATION OF CALCIUM HYDROXIDE-PROPOLIS AGAINST THE AMOUNT OF COLONIZATION of Lactobacillus acidophilus

ABSTRACT

Background: *Calcium hydroxide is a dentistry material used as pulp capping material. From Rosyida's research (2016) it is known that from 30 cases of direct pulp capping treatment with calcium hydroxide, there are only 11 cases (36,70%) that are categorized as successful. The weakness of calcium hydroxide causes many researchers to look for alternative materials, mainly by adding materials derived from nature. Propolis in dentistry has long been used because of its ability as anti-inflammatory, anti microbial, anti-fungal, and can cure scars. The addition of propolis extract to the calsium hydroxide is expected to improve the function of calcium hydroxide.* ***Purpose:*** *To know the effect of combination of calcium hydroxide-propolis against the amount of bacterial colonization of Lactobacillus acidophilus.* ***Methods:*** *This research use 4 treatment groups with each group consisting of 8 replications. Group 1 was a combination of calcium hydroxide-propolis with a ratio of 1:1, group 2's ratio 1:1.5, group 3's ratio 1:2, and positive control group is combination of calcium hydroxide and sterile aquadest. Each sample was immersed in saliva for 1 hour, then washed with PBS. Samples were inserted into Lactobacillus acidophilus suspension, grown for 24 hours, then taken and put into BHIB medium, vortex for 1 minute. A total of 0.1 ml of suspension Lactobacillus acidophilus is put in to MHA, grown for 24 hours. Then the number of colonies is calculated.* ***Result:*** *There was less bacterial colonization in group 3 than in group 2, group 2 than group 1, and group 1 than control group. The amount of bacterial colonization was obtained the least in the group 3 with the highest amount of propolis extract.* ***Conclusion:*** *The combination of calcium hydroxide-propolis with a ratio of 1:2 is most effective in inhibiting the colonization of Lactobacillus acidophilus.*

Key words: *Combination of Calcium Hydroxide-Propolis*; *Lactobacillus acidhopilus.*

KOMBINASI KALSIUM HIDROKSIDA-PROPOLIS TERHADAP JUMLAH KOLONISASI *Lactobacillus acidophilus*

ABSTRAK

Latar belakang: Kalsium hidroksida merupakan bahan kedokteran gigi yang digunakan sebagai bahan *pulp capping.* Dari penelitian Rosyida (2016) diketahui bahwa dari 30 kasus perawatan *pulp capping* direk dengan bahan kalsium hidroksida, hanya terdapat 11 kasus (36,70%) yang dikategorikan berhasil. Kelemahan kalsium hidroksida menyebabkan banyak peneliti mencari bahan alternatif, yaitu dengan menambahkan bahan yang berasal dari alam. Propolis dalam bidang kedokteran gigi telah lama digunakan karena kemampuannya sebagai anti inflamasi, anti mikroba, anti jamur, dan dapat menyembuhkan bekas luka. Penambahan ekstrak propolis pada kasium hidroksida diharapkan dapat memperbaiki fungsi kalsium hidroksida. **Tujuan:** Mengetahui pengaruh kombinasi kalsium hidroksida-propolis terhadap jumlah kolonisasi bakteri *Lactobacillus acidophilus.* **Metode:** Penelitian menggunakan 4 kelompok perlakuan dengan masing-masing kelompok terdiri dari 8 replikasi. Kelompok 1 merupakan kombinasi kalsium hidroksida-propolis dengan perbandingan 1:1, kelompok 2 perbandingannya 1:1.5, kelompok 3 perbandingannya 1:2, dan kelompok kontrol positif menggunakan kalsium hidroksida - aquadest steril. Masing-masing sampel direndam dalam saliva selama 1 jam, lalu dicuci dengan PBS. Sampel dimasukkan ke suspensi *Lactobacillus acidophilus,* ditumbuhkan selama 24 jam, lalu diambil dan dimasukkan ke dalam media BHIB, divortex selama 1 menit. Sebanyak 0,1 ml suspense *Lactobacillus acidophilus* dimasukkan dalam MHA, ditumbuhkan selama 24 jam. Kemudian jumlah koloni dihitung. **Hasil:** Didapatkan jumlah kolonisasi bakteri lebih sedikit pada kelompok 3 dibanding kelompok 2, kelompok 2 dibanding kelompok 1, dan kelompok 1 dibanding kelompok kontrol. Jumlah kolonisasi bakteri paling sedikit didapatkan pada kelompok sampel 3 yang jumlah ekstrak propolisnya paling banyak. **Simpulan:** Kombinasi kalsium hidroksida-propolis dengan perbandingan 1:2 paling efektif menghambat kolonisasi bakteri *Lactobacillus acidophilus.*

Kata kunci: *Kombinasi kalsium hidroksida-propolis; Lactobacillus acidhopilus.*