

INTISARI

Proses penyakit periodontitis dapat mengakibatkan penurunan jumlah dan aktivitas osteoblas. Gel ekstrak kulit pisang kepok 10% memiliki potensi dalam mempercepat proses regenerasi periodontal, khususnya jumlah dan kecepatan diferensiasi osteoblas. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi gel ekstrak kulit pisang kepok 10% dalam meningkatkan jumlah sel osteoblas tulang alveolar pada proses penyembuhan periodontitis tikus wistar (*Rattus norvegicus*).

Penelitian menggunakan subjek 46 ekor tikus wistar jantan berusia 2 bulan dengan berat 150-200 gram. Satu ekor tikus diamati sebagai *starting point*, 45 ekor tikus dibagi ke dalam 3 kelompok (kontrol negatif, kontrol positif, dan perlakuan), masing-masing 15 ekor. Kedua gigi insisivus sentralis mandibula diinduksi periodontitis dengan ligasi menggunakan *non-resorbable silk ligature* 4-0 selama 7 hari dengan modifikasi injeksi bakteri *Aggregatibacter actinomycetemcomitans* di gingiva interdental insisivus sentralis mandibula pada hari pertama. Kelompok kontrol negatif diaplikasikan gel CMC-Na 2%, kelompok kontrol positif diaplikasikan gel Aloclair, dan kelompok perlakuan diaplikasikan gel ekstrak kulit pisang kepok 10%, 2 kali sehari secara topikal. Tikus didekapitasi pada hari ke-0, 1, 3, 5, 7, dan 14 untuk diproses secara histologis menggunakan pewarnaan Hematoksilin Eosin. Data hasil penelitian dianalisis dengan uji *Two-Way ANOVA* dan *Post Hoc LSD*.

Hasil analisis data menunjukkan perbedaan signifikan jumlah sel osteoblas antara kelompok perlakuan dan kontrol negatif serta antara kelompok perlakuan dan kontrol positif sejak hari pertama. Jumlah sel osteoblas kelompok perlakuan mencapai puncak pada hari ke-5, lebih cepat dibandingkan kelompok kontrol. Kesimpulan penelitian ini adalah gel ekstrak kulit pisang kepok 10% berpengaruh meningkatkan jumlah sel osteoblas pada penyembuhan periodontitis tikus wistar.

Kata kunci: Periodontitis, Tikus wistar, Osteoblas, Pisang Kepok.

ABSTRACT

Periodontitis would eventually cause reduction in the number and activity of osteoblast. Kepok banana peel (*Musa paradisiaca* linn. Kepok) has potential in accelerating periodontal regeneration process, especially in increasing the number and differentiation rate of osteoblast. The aim of this study was to observe the effect of 10% Kepok banana peel extract gel on increasing the number of osteoblast in periodontitis healing process of wistar rat (*Rattus norvegicus*).

In this study, 46 two-month-old wistar rats weighing 15-200 gram were used as experimental subjects. One rat was used as starting point, 45 other rats were divided into 3 groups (negative control, positive control, and treatment), consisting of 15 rats per group. Induction of periodontitis utilized non-resorbable silk ligature 4-0 with “8”-shaped knot technique. The ligatures were placed in between both central incisors of the mandible for 7 days with additional injections of *Aggregatibacter actinomycetemcomitans* in interdental gingiva of mandibular central incisor on the first day. CMC-Na gel 2% was applied on negative control group, Aloclair gel was applied on positive control group, and 10% Kepok banana peel extract gel was applied on treatment group, twice a day topically. The rats were euthanized on day 0, 1, 3, 5, 7, and 14 to be histologically stained with Hematoxylin Eosin. Data was analyzed with Two-Way ANOVA and Post Hoc LSD.

This study showed data significant difference of osteoblast number between treatment and negative control group and also treatment and positive control group since day 1. Osteoblast in treatment group reached the highest number on day 5, faster than negative and positive control group. The conclusion of this study was 10% Kepok banana peel extract gel could increase the total number of osteoblast in periodontitis healing process of wistar rat.

Key words: Periodontitis, Wistar rat, Osteoblast, Kepok banana.