

INTISARI

Kulit nanas mengandung flavonoid, vitamin C, bromelain, dan karotenoid. Bromelain dan flavonoid dapat meningkatkan *Vascular Endothelial Growth Factor* (VEGF) yang dapat menstimulasi migrasi, proliferasi, dan diferensiasi dari sel endotel. Tujuan dari penelitian ini yaitu untuk mengetahui pengaruh gel ekstrak kulit nanas (*Ananas comosus*) 6,25 % terhadap angiogenesis tulang alveolar pada proses penyembuhan periodontitis tikus *Sprague dawley*.

Dua puluh empat tikus *Sprague dawley* digunakan dan dibagi menjadi dua kelompok yaitu kelompok kontrol yang diaplikasikan CMC-Na 6,25% dan kelompok perlakuan yang diaplikasikan gel ekstrak kulit nanas 6,25%. Tikus diinduksi periodontitis selama 7 hari kemudian diberi perlakuan selama 14 hari setelah pelepasan ligasi dan kuretase. Tikus di setiap kelompok di dekapitasi pada hari ke 3,5,7, dan 14. Tulang rahang dari tikus kemudian dipotong, difiksasi ke dalam blok paraffin kemudian diwarnai dengan pewarnaan Hematoksin eosin. Pengamatan dilakukan oleh dua pengamat berbeda di lima lapang pandang pada mikroskop perbesaran 400X.

Hasil menunjukkan peningkatan angiogenesis pada hari ke 3,5, dan 7 kemudian menurun pada hari ke-14. Gel ekstrak kulit nanas mempunyai pengaruh terhadap angiogenesis ($p < 0,05$). Rerata pembuluh darah pada kelompok perlakuan lebih tinggi daripada kelompok kontrol. Sehingga dapat disimpulkan bahwa gel ekstrak kulit nanas (*Ananas comosus*) 6,25% berpengaruh dalam peningkatan jumlah angiogenesis tulang alveolar.

Kata kunci : periodontitis, gel ekstrak kulit nanas, angiogenesis

ABSTRACT

Pineapple peel contain bromelain enzyme, flavonoid, vitamin C, and carotene as antioxidants, anti-inflammatory, and osteogenesis. The bromelain enzyme and flavonoid increase vascular endothelial growth factor (VEGF) that induce migration, proliferation, and differentiation of endothelial cell. The aim of this research was to study the effect of 6,25% *Ananas comosus* peel extract gel towards the number of alveolar bone's angiogenesis in the healing process of periodontitis in *Sprague dawley* rats. Angiogenesis is defined as formation of new blood vessels.

Twenty four *Sprague dawley* rats were used and divided into 2 groups: treatment group was applied with 6,25% *Ananas comosus* peel extract gel and the control group was applied 2% CMC-Na. The rats were induced with ligation-periodontitis for 7 days and the intervention were applied for 14 days after the curettage. Three rats of each group was decapitated every 3rd, 5th, 7th, and 14th day. The mandibular of the rats was resected, fixated, and embedded in the paraffin blocks. Hematoxylin-Eosin staining was used to stain the specimens and observed by 2 different persons at 5 different microscopic field.

The result showed increasing number of angiogenesis at the 3rd, 5th, and 7th day, and decreased at the 14th day on each group. The 6,25% *Ananas comosus* peel extract gel and 2% CMC-Na gel had an effect on the number of angiogenesis ($p < 0,05$). The treatment group had mean of the angiogenesis higher in each observation day than the control group. In conclusion, 6,25% *Ananas comosus* peel extract gel had an effect on the number of alveolar bone's angiogenesis.

Keywords : Pineapple peel, periodontitis, angiogenesis.