ABSTRAK

Nama : Silvi Tiara Dewi
Program Studi : Kedokteran Gigi
Judul : Pengaruh Aplikasi *Hydrogel Aloevera* terhadap Peningkatan Jumlah Fibroblast Pada Luka Soket Pasca Pencabutan Gigi Pada *Rattus Novergicus*

Latar belakang: Pencabutan gigi akan menimbulkan luka pada rongga mulut. Proliferasi fibroblast menentukan hasil akhir proses penyembuhan luka. *Aloevera* dalam bentuk hidrogel merupakan salah satu bahan herbal yang bersifat antiinflamasi. Tujuan penelitian ini adalah untuk mengetahui pengaruh aplikasi *hydrogel aloevera* terhadap peningkatan jumlah fibroblast pada luka soket pasca pencabutan gigi pada *rattus novergicus*. **Metode:** Jenis penelitian adalah eksperimental laboratories dengan *post test only control group design*. Sampel yaitu tikus *rattus novergicus*) berjumlah 25 ekor yang dibagi menjadi 5 kelompok. Empat kelompok perlakuan (hidrogel aloevera 1%, 2,5%, 5%, 10%) dan satu kelompok kontrol (*xylazine*). Penentuan jumlah fibroblast menggunakan mikroskop binukoler dengan lima lapang pandang. Data dianalisis dengan uji *oneway* ANOVA dan *posthoc* LSD. **Hasil:** Berdasarkan hasil penelitian didapatkan bahwa hidrogel aloevera 10% memiiki rerata jumlah fibroblast terbanyak yaitu 128,0±28,81, sedangkan kelompok perlakuan yang paling sedikit rerata jumlah sel fibroblast adalah hidrogel aloevera 1% berjumlah 37,6±16,07. Hasil uji oneway ANOVA dinyatakan bahwa terdapat pengaruh aplikasi *hydrogel aloevera* 1%, 2,5%, 5%, 10% dan *xylazine* terhadap peningkatan jumlah fibroblast pada luka soket pasca pencabutan gigi pada *rattus novergicus* ($p<0,05$). Hasil posthoc LSD dinyatakan bahwa terdapat perbedaan pengaruh aplikasi antara hid aloevera 1% dengan hid aloevera 2,5% ($p=0,020$; *mean diff*=-42,4), hid aloevera 1% dengan hid aloevera 5% ($p=0,000$; *mean diff*= -75,4), hid aloevera 1% dengan hid aloevera 10% ($p=0,000$; *mean diff*= -90,4) terhadap jumlah fibroblast pada luka soket pasca pencabutan gigi pada *rattus novergicus* yang signifikan. **Kesimpulan:** Ada pengaruh aplikasi *hydrogel aloevera* terhadap peningkatan jumlah fibroblast pada luka soket pasca pencabutan gigi pada *rattus novergicus*.

Kata kunci: fibroblast, hidrogel, aloevera, penyembuhan luka

ABSTRACT

Name : Silvi Tiara Dewi
Study Program : Dentistry
Title : Effect of Aloevera Hydrogel Application on the Improvement of Number of Fibroblasts in Socket Wounds After Tooth Extraction in Rattus Novergicus

Background: Tooth extraction will cause injury to the oral cavity. The proliferation of fibroblasts determines the final outcome of the wound healing process. Aloe vera in the form of hydrogel is one of the herbal ingredients that has anti-inflammatory properties. The purpose of this study was to determine the effect of aloe vera hydrogel application on increasing the number of fibroblasts in socket wounds after extraction of rattus novergicus. **Methods:** This type of research is a laboratory experiment with a post test only control group design. The research sample was 25 mice (Rattus novergicus) which were divided into 5 groups. Four treatment groups (1%, 2.5%, 5%, 10% aloe hydrogel) and one control group (xylazine). Determination of the number of fibroblasts using a binocular microscope with five fields of view. Data were analyzed by one-way ANOVA and posthoc LSD tests. **Results:** Based on the results of the study, it was found that 10% aloe vera hydrogel had the highest mean number of fibroblasts, which was 128.0±28.81, while the treatment group with the lowest average number of fibroblasts was aloe vera 1%. hydrogel, which is 37.6±16.07. The results of the one-way ANOVA test showed that there was an effect of hydrogel application 1%, 2.5%, 5%, 10% and xylazine aloe vera on the increase in the number of fibroblasts in the socket wound after tooth extraction in rattus novergicus ($p<0.05$). The posthoc LSD results stated that there was a difference in the effect of application between hid aloevera 1% and hid aloevera 2.5% ($p=0.020$; mean diff=-42.4), hid aloevera 1% and hid aloevera 5% ($p= 0.000$; mean diff= -75.4), hid aloevera 1% and hid aloevera 10% ($p=0.000$; mean diff=-90.4) on the number of fibroblasts in the socket wound after tooth extraction in rattus novergicus was significant. **Conclusion:** There is an effect of aloe vera hydrogel application on the increase in the number of fibroblasts in the socket wound after tooth extraction in rattus novergicus.

Keywords: fibroblasts, hydrogel, aloevera, wound healing