

ABSTRAK

Pencabutan gigi atau ekstraksi gigi merupakan tindakan pembedahan dengan tujuan mengambil gigi dari soketnya serta menimbulkan luka. Daun kirinyuh (*Chromolaena odorata*) mengandung flavonoid, saponin, dan tannin yang mampu membantu proses penyembuhan luka pasca ekstraksi gigi. Tujuan dilakukan penelitian ini adalah untuk mengetahui pengaruh pemberian ekstrak etanol daun kirinyuh terhadap kepadatan serabut kolagen pada luka pasca ekstraksi gigi marmot.

Enam puluh ekor marmot (*Cavia cobaya*) jantan berusia 9-10 minggu, berat badan 300-350 gram dibagi ke dalam lima kelompok yaitu kelompok kontrol negatif dan kontrol positif, serta kelompok perlakuan konsentrasi 2,5%, 5%, dan 10%. Ekstrak daun kirinyuh konsentrasi 2,5%, 5%, dan 10% dibuat dalam sediaan topikal. Hewan uji diadaptasikan selama tujuh hari sebelum diberikan perlakuan. Gigi marmot diekstraksi pada hari yang sama lalu diaplikasikan sediaan secara topikal. Setelah prosedur tersebut, hewan uji dilakukan eutanasia dan dibuat preparat histologi pada hari ke-3, 7, 10, dan 14 dengan pewarnaan *Mallory* kemudian dilakukan pengamatan menggunakan mikroskop. Analisis kepadatan serabut kolagen menggunakan *Kruskal Wallis* dan uji *Post hoc Mann Whitney*.

Hasil pengamatan menunjukkan bahwa rerata serabut kolagen kelompok perlakuan lebih tinggi dibandingkan kelompok kontrol. Hasil uji *Kruskal Wallis* menunjukkan bahwa terdapat perbedaan bermakna ($p < 0,05$) pada seluruh kelompok pada hari ke-3, 7, 10, dan 14. Hasil uji *Post hoc Mann Whitney* menunjukkan terdapat perbedaan bermakna antara kelompok perlakuan seluruh konsentrasi dibandingkan dengan kelompok kontrol. Kesimpulan dari penelitian ini adalah ekstrak etanol daun kirinyuh dapat meningkatkan kepadatan serabut kolagen pada luka pasca ekstraksi gigi. Peningkatan kepadatan kolagen tertinggi ditunjukkan setelah aplikasi ekstrak etanol daun kirinyuh konsentrasi 10% dibandingkan konsentrasi lainnya.

Kata kunci: ekstraksi gigi, marmot, kirinyuh, kepadatan serabut kolagen

ABSTRACT

Tooth extraction is a surgical procedure of removing tooth from the socket which causes wound. *Kirinyuh* leaves (*Chromolaena odorata*) contain flavonoids, saponins, tannins that may help the wound healing process after tooth extraction. The purpose of this study is to determine the effect of application of *Kirinyuh* leaves ethanol extract on the density of collagen fibers on the wound after tooth extraction of guinea pig.

Sixty male guinea pigs (*Cavia cobaya*), aged 9-10 weeks and weighted at 300-350 gr were used as subject and divided into five groups. The groups were negative control group, positive control group, and treatment groups at concentration of 2.5%, 5%, and 10%. The subject were adapted for seven days prior to the treatment. Extract of *Kirinyuh* leaves concentration at 2,5%, 5%, and 10% were made in topical products. *Cavia cobaya*'s teeth were extracted on the same day and extract of *Kirinyuh* leaves was applied topically on the wound. Thereafter, the subject was given euthanasia, made into histopathology specimens on the 3rd, 7th, 10th, and 14th days with Mallory stain, then observed under a microscope. Analysis of collagen fiber density was carried out by using *Kruskal Wallis* test and post hoc *Mann Whitney* test.

Results showed that treatment groups have higher density of collagen fibers compared to control groups. *Kruskal Wallis* test showed that there was significant difference ($p < 0.05$) on all groups on 3rd, 7th, 10th, and 14th days. Post hoc *Mann Whitney* test also showed that there were significant differences between the treatment groups at all concentrations compared to the control groups. The conclusion of this study is that the ethanol extract of *Kirinyuh* leaves may increase the density of collagen fibers in post-tooth extraction wounds. The highest increase in collagen density is shown at 10% of *Kirinyuh* leaves concentration compared to other concentrations.

Key words: tooth extraction, *Kirinyuh*, density of collagen fibers