

ABSTRAK

Pencabutan gigi anak adalah tindakan rutin yang dapat menimbulkan perlukaan di jaringan lunak. Fase inflamasi yang terjadi selama penyembuhan luka memicu rangkaian perubahan jaringan yang dimediasi oleh sistem imun dan sitokin. Kadar sitokin *IL-1* dan *IL-6* seharusnya turun seiring menyembuhnya luka, tetapi jika tidak maka akan memperlambat penyembuhan luka dan menyebabkan inflamasi kronis. Penggunaan ekstrak daun kelor yang mengandung flavonoid dan fitokimia lainnya diharapkan mampu mengurangi kadar *IL-1* dan *IL-6* dan mempercepat penyembuhan luka. Tujuan studi ini ialah untuk mengetahui efek ekstrak etanol daun kelor terhadap proses penyembuhan luka.

Penelitian ini dilakukan pada tikus Wistar sebanyak 27 yang dibagi kedalam tiga kelompok perlakuan secara acak, yaitu kelompok perlakuan ekstrak daun kelor (300mg/Kg/BB), kortikosteroid (Methylprednisolone 12mg/Kg/BB), dan aquadest. Tikus diberi perlukaan dengan *punch biopsy* di gingiva dan diberi perlakuan per oral setiap hari selama 7 hari. Pengambilan sampel darah dari sinus orbita dilakukan di hari ke-4, -7, dan -14 setelah perlukaan dan kadar *IL-1* dan *IL-6* diukur dengan ELISA. Data yang didapat diuji dengan *two-way ANOVA* dan *Post Hoc LSD*.

Hasilnya, *IL-6* paling rendah ditemukan pada kelompok ekstrak daun kelor di hari ke-7 dengan rerata $66,36 \pm 3,33$, sedangkan *IL-1* paling rendah ditemukan pada kelompok K(+) hari ke-7 dengan $0,74 \pm 0,04$. Ada perbedaan penurunan *IL-6* di hari ke-7 antara kelompok kortikosteroid dan ekstrak daun kelor dibandingkan dengan kelompok aquadest. Terdapat perbedaan signifikan antar kelompok uji dan waktu pengamatan dengan $p < 0,05$.

Kesimpulannya, pemberian ekstrak daun kelor secara oral memiliki efektivitas dalam menurunkan kadar *IL-1* dan *IL-6* dalam darah dan membantu menyembuhkan luka.

Kata kunci: Ekstrak Daun Kelor, Inflamasi, *IL-1*, *IL-6*, Penyembuhan Luka.

ABSTRACT

Tooth extraction is a routine procedure that creates wounds. The inflammation that occurs during wound healing triggers a series of changes mediated by the immune system and cytokines. The amount of cytokines, especially *IL-1* and *IL-6* should decrease as the wound heals, or it slows the wound healing and leads to chronic inflammation. Moringa leaf extract contains flavonoids and other phytochemicals that are able to reduce the amount of *IL-1* and *IL-6* and accelerate wound healing. The aim of this study was to analyze the effect of Moringa leaf extract on the wound healing process.

This study was conducted on 27 Wistar rats, randomly separated into three treatment groups: Moringa leaf extract (300mg/Kg/BW), corticosteroid (12mg/Kg/BW), and aquadest. The wounds were simulated with punch biopsy in the gingiva and treated orally every day for 7 days. Blood samples from the orbital sinus were taken on the 4th, 7th, and 14th days after wounding, and the levels of *IL-1* and *IL-6* were measured by ELISA. The data obtained were tested by two-way ANOVA and Post Hoc LSD.

The result was, the lowest *IL-6* and *IL-1* levels were found on the 7th day. The lowest *IL-6* level was in the Moringa leaf extract group and the lowest *IL-1* was in the corticosteroid group, with means of 66.36 ± 3.33 and 0.74 ± 0.04 , respectively. There was a difference between the *IL-6* level of corticosteroid and Moringa leaf extract groups compared to the aquadest group on the 7th day. There was a significant difference between the test groups and the time of observation with $p < 0.05$.

In conclusion, the oral administration of Moringa leaf extract is able to reduce *IL-1* and *IL-6* levels in the blood and promote wound healing.

Keywords: *IL-1*, *IL-6*, Inflammation, Moringa Leaf Extract, Wound Healing.