

**Pemanfaatan Ekstrak Daun Kelor (*Moringa oleifera* lamk) untuk
Penyembuhan Luka Tikus Ovariectomi yang
Diberi Diet Tinggi Lemak**

Sucia Fadillah

19/452982/PKH/00724

INTISARI

Luka merupakan bentuk kerusakan jaringan dimana kulit kehilangan struktur kompleksnya. Faktor yang dapat mengganggu penyembuhan luka salah satunya adalah kondisi obesitas. Pemberian obat berbahan alami dapat mengoptimalkan reaksi penyembuhan luka dan mengurangi risiko timbulnya efek samping. Penelitian ini bertujuan untuk mengetahui berat badan, kadar kolesterol total, trigliserida dan glukosa darah, serta mengetahui efektivitas pemberian salep ekstrak etanol daun kelor (EEDK) pada penyembuhan luka berdasarkan total leukosit dalam darah, jumlah leukosit pada jaringan luka, ketebalan epitel dan gambaran histopatologi. Enam belas ekor tikus *Sprague-Dawley* betina umur 3-4 bulan dengan berat 150-200 g dibagi menjadi 4 kelompok perlakuan (A, B, C, dan D) secara acak. Seluruh tikus diovariectomi dan diberi pakan selama 8 minggu. Kelompok A dan C diberi pakan normal sedangkan B dan D diberi pakan tinggi lemak. Setelah 8 minggu dilakukan penimbangan berat badan, pengambilan darah untuk analisis kadar lemak (kolesterol total dan trigliserida), glukosa, dan pembuatan luka di area punggung kiri dan kanan dengan *biopsy punch* (8 mm). Perawatan dilakukan dengan pemberian salep selama 7 hari dan injeksi antibiotik. Kelompok A dan B diberi salep basis sedangkan C dan D diberi salep EEDK 20%. Pada hari ke-7 dilakukan pengambilan darah untuk analisis total leukosit dan pengambilan jaringan kulit luka untuk analisis histopatologi. Hasil selisih berat badan, kadar lemak, glukosa, total leukosit darah, jumlah leukosit di jaringan dan ketebalan epitel dianalisis secara statistik dan hasil pengamatan histopatologis dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa total leukosit darah, jumlah leukosit di jaringan dan ketebalan epitel dipengaruhi oleh jenis salep ($P < 0,05$). Terdapat interaksi yang signifikan antara pakan dan pemberian salep terhadap total leukosit darah ($P < 0,05$) Salep EEDK 20% dapat menurunkan jumlah leukosit di jaringan, meningkatkan ketebalan epitel dan memiliki gambaran histopatologi kulit yang baik. Dapat disimpulkan bahwa pemberian salep EEDK 20% memperlihatkan hasil yang baik pada penyembuhan luka tikus yang diovariectomi dan diberi pakan tinggi lemak.

Kata kunci: Daun kelor, salep EEDK, tinggi lemak, obesitas, luka, penyembuhan.

Utilization of Moringa Leaf Extract (*Moringa oleifera lamk*) for Wound Healing in Ovariectomized Rats Given a High-Fat Diet

Sucia Fadillah

19/452982/PKH/00724

ABSTRACT

Wounds are a form of tissue damage in which the skin loses its complex structure. One of the factors that can interfere with wound healing is obesity. Administration of natural medicines can optimize wound healing reactions and reduce the risk of side effects. This study aims to determine body weight, total cholesterol, triglyceride and blood glucose levels, and to determine the effectiveness of giving moringa leaf ethanol extract ointment (EEDK) on wound healing based on blood total leukocytes, tissue leukocyte count in wound tissue, epithelial thickness and histopathological features. Sixteen female Sprague-Dawley rats aged 3-4 months weighing 150-200 g were randomly divided into 4 treatment groups (A, B, C, and D). All rats were ovariectomized and fed for 8 weeks. Groups A and C were given normal diet while B and D were given a high-fat diet. After 8 weeks of treatment, body weight was measure, blood was collected for analysis of lipid levels (cholesterol and triglycerides) and glucose. Skin biopsy (8 mm) was done on the left and right back of rats. Treatment was done by giving ointment for 7 days and injection of antibiotics. The wound of the rats in group A and B was treated with base ointment, while group B and D was treated with 20% moringa leaf ethanol extract (EEDK 20%) ointment. On the 7th day, blood was collected for a total leukocyte analysis and wounded skin was taken for histopathological analysis. Results of this experiment showed that blood total leukocytes and tissue leukocyte count were influenced by the type of ointment ($P<0.05$). Wound care is done by giving ointment for 7 days and injection of antibiotics. On the 7th day, blood was drawn for analysis of total leukocytes and skin tissue was taken for histopathological analysis. The results of differences in body weight, total cholesterol, triglyceride, glucose, blood total leukocytes, tissue leukocyte count and epithelial thickness were analyzed statistically and the results of histopathological observations were analyzed descriptively. The results showed that the blood total leukocytes, tissue leukocyte count and the thickness of the epithelium were affected by the type of ointment ($P<0.05$). There was a significant interaction between diet and ointment administration on total blood leukocytes ($P<0.05$). EEDK 20% ointment could reduce the tissue leukocyte count, increase epithelial thickness and have a good histopathological image of the skin. It can be concluded that the administration of EEDK 20% ointment showed good results in wound healing in ovariectomized rats fed a high-fat diet.

Keywords: Moringa leaves, EEDK ointment, high-fat, obesity, wounds, healing.