

ABSTRAK

Latar belakang: Masalah penyembuhan luka bakar sering berhubungan dengan ekspresi TNF- α dan VEGF. Namun sejauh ini belum diketahui bagaimana manfaat dan pengaruh krim ekstrak etanol daun sirsak terhadap ekspresi TNF- α dan VEGF pada proses penyembuhan luka bakar.

Tujuan: Mengetahui bahwa krim ekstrak etanol daun sirsak mempunyai manfaat dan pengaruh dalam menurunkan ekspresi TNF- α dan merangsang peningkatan VEGF pada kondisi kulit mencit BALB/c yang dipapar UVB akut

Metode: Penelitian eksperimental laboratorik dengan rancangan *post test only control group design*. Subjek penelitian secara keseluruhan berjumlah 48 ekor mencit BALB/c betina, yang dibagi menjadi 24 ekor untuk penelitian TNF- α dan 24 ekor untuk penelitian VEGF, dibagi secara acak menjadi 4 kelompok pada setiap penelitian dan masing-masing kelompok berjumlah 6 ekor mencit BALB/c. Kelompok K dioleskan base krim 0.3 gr tiga kali sehari, sedangkan kelompok P1, P2 dan P3 masing-masing diberi olesan 0,3gr krim ekstrak etanol daun sirsak 2.5%, 5%, dan 10% tiga kali sehari. Pada hari keenam dilakukan terminasi pada 24 ekor mencit untuk menilai ekspresi TNF- α dan pada hari ke delapan juga dilakukan terminasi pada 24 ekor mencit untuk menilai ekspresi VEGF. Pembuatan preparat menggunakan metode IHC, dianalisis menggunakan uji Kruskal Wallis dilanjutkan dengan uji Mann Whitney.

Hasil: Hasil analisis ekspresi TNF- α dan VEGF berdasarkan uji Kruskal Wallis diperoleh nilai p sebesar 0,0001($p<0,05$) menunjukkan bahwa rerata ekspresi TNF- α dan VEGF diantara keempat kelompok berbeda bermakna. Hasil uji Mann Whitney diketahui bahwa perbedaan ekspresi TNF- α dan VEGF antar dua kelompok semuanya menunjukkan perbedaan bermakna ($p<0,05$). Rerata ekspresi TNF- α pada ketiga kelompok perlakuan (P1, PII, PIII) secara bermakna lebih rendah daripada kelompok kontrol. Rerata ekspresi TNF- α pada kelompok perlakuan PII dan PIII secara bermakna lebih rendah daripada kelompok PI, dan rerata ekspresi TNF- α pada kelompok perlakuan PIII secara bermakna lebih rendah daripada kelompok PII. Rerata ekspresi VEGF pada ketiga kelompok perlakuan (P1, PII, PIII) secara bermakna lebih tinggi daripada kelompok kontrol. Rerata ekspresi VEGF pada kelompok perlakuan PII dan PIII secara bermakna lebih tinggi daripada kelompok PI, dan rerata ekspresi VEGF pada kelompok perlakuan PIII secara bermakna lebih tinggi daripada kelompok PII.

Kesimpulan: Krim ekstrak etanol daun sirsak bermanfaat dan berpengaruh menurunkan ekspresi TNF- α dan meningkatkan ekspresi VEGF pada mencit BALB/c yang dipapar sinar UVB akut.

Kata Kunci: Krim ekstrak etanol daun sirsak, ekspresi TNF- α , ekspresi VEGF

ABSTRACT

Background: Wound healing problems are often associated with TNF- α and VEGF expressions. However, the benefits and effects of ethanol extract cream from soursop leaves towards TNF- α and VEGF expression for burns healing process are yet to be known.

Purpose: To evaluate the benefits and influence of ethanol extract cream from soursop leaves in decreasing TNF- α expression and stimulate VEGF expression in BALB/c skin's mice exposed to acute UVB radiation.

Method: This study is a laboratory-based experimental study with post test only control group design. The subjects were 48 BALB/c female mice, divided into 24 subjects for TNF- α and 24 for the VEGF group, and were randomly distributed into 4 groups in each study, with each group containing 6 BALB/c mice. Group K was smeared with a base cream of 0.3 grams three times daily, while P1, P2 and P3 groups were each applied 0.3 grams of ethanol extract with consecutive concentrations of 2.5%, 5%, and 10% three times daily. On the sixth day, termination was performed on 24 mice to assess Tnf- α expression and on the eighth day also termination on 24 mice to assess VEGF expression. Preparation of substances was done using IHC method, analyzed using Kruskal Wallis test followed by Mann Whitney test.

Results: The results of TNF- α and VEGF expression analysis based on Kruskal Wallis test obtained a p value of 0.0001 ($p<0.05$) showing that the mean expression of TNF- α and VEGF among the four groups were significantly different. Mann Whitney test results revealed that the differences in expression of TNF- α and VEGF between the two groups were all significant differences ($p<0.05$). The mean TNF- α expression in the three treatment groups (PI, PII, PIII) were significantly lower than the control group. The mean TNF- α expression in the PII and PIII treatment groups were significantly lower than in the PI group, and the mean TNF- α expression in the PIII treatment group was significantly lower than the PII group. The mean VEGF expression in the three treatment groups (PI, PII, PIII) were significantly higher than the control group. The mean VEGF expression in the PII and PIII treatment groups were significantly higher than the PI group, and the mean VEGF expression in the PIII treatment group was significantly higher than in the PII group.

Conclusion: Ethanol creams made of soursop leaves extract is proven to be useful and decreasing TNF- α expression and increase VEGF expression in BALB/c mice exposed to acute UVB rays.

Keywords: Ethanol cream of soursop leaves extract, TNF- α expression, VEGF expression