

ABSTRAK

Latar belakang: Pembentukan jaringan kolagen yang terganggu akibat kondisi DM, akan menghambat proses penyembuhan luka. Mahkota dewa kaya akan kandungan *flavonoid* dan *phenolic* seperti pada kandungan *Aloe vera* dan *Mellolitus officinales* yang telah diketahui dapat memperbaiki pembentukan kolagen pada tikus DM.

Tujuan: Pada penelitian ini ingin dikaji pengaruh Ekstrak Ethanol Daun Mahkota Dewa (EEDMD) terhadap kolagenisasi luka tikus model DM kronis.

Metode: Subyek adalah 40 ekor tikus dibagi menjadi lima kelompok. Streptozotocin (STZ) dan Nicotinamide (Na) digunakan untuk menginduksi DM. Luka kulit di punggung berdiameter 1 cm diolesi salep ekstrak etanol daun mahkota dewa (EEDMD) dengan konsentrasi berbeda. Tikus diterminasi dan diambil jaringan luka kulit pada hari ketiga dan kesembilan. Sediaan histologis jaringan luka kulit diwarnai dengan Mallory. Pembentukan jaringan kolagen diberi skor secara semikuantitatif.

Hasil: Pada subyek yang diterminasi hari ketiga, kelompok kontrol non DM, kontrol DM, EEDMD 5%, 10%, dua subyek tiap kelompok menunjukkan kepadatan kolagen longgar, kecuali pada kelompok EEDMD 20%, dua subyek menunjukkan kepadatan kolagen sedang. Pada subyek diterminasi hari kesembilan, kepadatan kolagen kelompok kontrol non DM kepadatan kolagen semua subyek padat (n= 6), sedangkan pada kelompok kontrol DM kepadatan kolagen semua subyek sedang (n= 2). Pada kelompok yang diberi salep EEDMD 5%-20%, 3-4 subyek didapatkan kolagen yang padat (n= 4 atau 5).

Kesimpulan: Kepadatan kolagen luka tikus model DM kronis fase inflamasi dan fase proliferasi cenderung lebih padat pada pemberian salep EEDMD dibandingkan kontrol DM.

Kata Kunci: penyembuhan luka, diabetes mellitus, derajat kepadatan kolagen, *Phaleria macrocarpa* (Scheff.) Boerl

ABSTRACT

Background: The formation of collagen tissue was disrupted by DM condition, this will impede the wound healing process. Mahkota dewa are rich in flavonoids and phenolics such as the content of *Aloe vera* and *Mellolitus officinales* which were already known to improve collagen formation in diabetic rats.

Objective: To examine how the influence EEDMD on DM chronic rat model.

Method: Subjects were 40 rats divided into five groups. Streptozotocin (STZ) and Nicotinamide (Na) were used to induce diabetes. Skin wound in the back of rats with a diameter of 1 cm were smeared by ethanol extract of mahkota dewa (EEDMD) with different concentrations. Rats were terminated and the wound tissue in the skin was taken at the third and ninth day. Histological tissue preparations were stained with Mallory skin wounds. The formation of collagen tissue were scored semiquantitatively.

Results: On the subject of who terminated on the third day, the control group of non DM, DM control, EEDMD 5%, 10%, two subjects of each group showed loose collagen density, except in the group of EEDMD 20%, two subjects showed moderate collagen density. On the ninth day the subject was terminated, control group's collagen density were all dense (n = 6), whereas in the control group DM all subjects were moderate (n = 2). In the group given ointment EEDMD 5% -20%, 3-4 subjects were dense collagen (n = 4 or 5).

Conclusion: The density of collagen wound DM rat model of chronic inflammatory phase and *proliferative* phase tends to be better at giving EEDMD ointment.

Keywords: *wound healing, diabetes mellitus, collagen density, Phaleria macrocarpa (Scheff.) Boerl*