

## INTISARI

### **Efek Pemberian Salep Ekstrak Etanol Daun Mahkota Dewa (*Phaleria macrocarpa* (Scheff) Boerl) Terhadap Angiogenesis Jaringan Luka Kulit Tikus Model Diabetes Mellitus Kronis**

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**Latar Belakang** : Penyembuhan luka kulit pada kondisi DM terganggu, salah satunya dikarenakan berkurangnya angiogenesis sehingga memperpanjang kondisi hipoksia jaringan. Daun mahkota dewa mengandung senyawa flavonoid, saponin, dan tanin yang mirip dengan kandungan senyawa *Martynia annua* Linn., *Azidirachta indica*, dan herbal Cina NF3 yang telah dilaporkan mampu meningkatkan angiogenesis pada luka kulit DM. Penelitian ini bertujuan untuk mengetahui efek salep ekstrak etanol daun mahkota dewa (EEDMD) pada jaringan luka kulit tikus model DM kronis.

**Metode** : Penelitian dilakukan dengan desain *quasi experimental*. Subyek adalah 40 ekor tikus Wistar jantan usia 6 minggu dengan berat 100-200gram dibagi menjadi lima kelompok. Luka kulit di bagian punggung dengan diameter 1cm diolesi salep EEDMD setiap hari dengan konsentrasi berbeda. Dua ekor tiap kelompok diterminasi pada hari ketiga dan enam ekor pada hari kesembilan. Jaringan luka kemudian dibuat sediaan histologis dengan pengecatan Hematoxylin-Eosin (HE). Distribusi pembuluh darah diberi skor 0-4 secara semikuantitatif.

**Hasil** : Sembilan ekor tikus mati sebelum diterminasi. Skor angiogenesis pada jaringan luka hari ketiga adalah 1-2. Skor angiogenesis jaringan luka hari kesembilan pada kelompok kontrol DM adalah 3-4, kelompok EEDMD 5% paling banyak memiliki skor 3, kelompok EEDMD 10% paling banyak memiliki skor 4, dan kelompok EEDMD 20% paling banyak memiliki skor 4. Pada kelompok kontrol tanpa streptozotosin skor angiogenesis bervariasi antara 2-4.

**Kesimpulan** : Skor angiogenesis pada jaringan luka kulit tikus model DM kronis yang diberi EEDMD cenderung lebih tinggi.

**Kata Kunci** : luka kulit diabetes, daun mahkota dewa, angiogenesis

## ABSTRACT

### **Ethanol Extract of Mahkota Dewa (*Phaleria macrocarpa* (Scheff) Boerl) Leave Ointment Effects on Angiogenesis of Chronic Diabetic Rat's Skin Wound Tissue**

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**Background** : Disturbance of diabetic wound healing is associated with decrease of angiogenesis which leads to tissue hypoxia. The compound of Mahkota dewa leave, flavonoid, saponin, and tannin, are similar with the compound of *Martynia annua* Linn., *Azidirachta indica*, and China herbal NF3, which have been reported promote angiogenesis of diabetic skin wound. The aim of this study was to know the effect of ethanol extract of mahkota dewa leave ointment on angiogenesis of chronic diabetic rat's skin wound tissue.

**Methods** : This study was done using quasi experimental study design. Subjects who involved in this study were 40 male Wistar rats with body weight 100-200gram, divided in five treatment groups. Different concentration of ethanol extract of mahkota dewa leave were applied everyday on rat's skin wound which made on the back with 1cm in size. In each group, three rats were terminated on third day and six rats were terminated on ninth day. Sections were stained with Hematoxylin-Eosin (HE). Angiogenesis score was assessed using semiquantitative method.

**Results** : Nine rats were died before terminated. Angiogenesis scores of wound tissue on third day were 1-2. Angiogenesis scores of wound tissue on ninth day DM control group were 3-4, EEDMD 5% group mostly have score 3, EEDMD 10% group mostly have score 4, and EEDMD 20% mostly have score 4. Angiogenesis score of ninth day control group without streptozotocin were vary between 2-4.

**Conclusion** : Angiogenesis score of chronic diabetic rat's skin wound tissue tend to be higher upon topical administration of ethanol extract of mahkota dewa leave.

**Keywords** : diabetic skin wound, mahkota dewa leave, angiogenesis