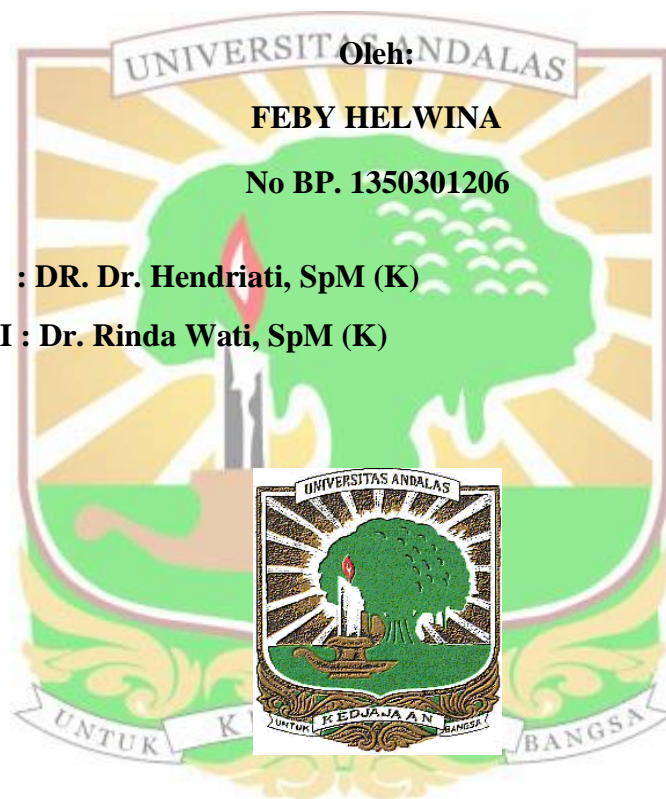


**PERBANDINGAN GAMBARAN HISTOPATOLOGI PENYEMBUHAN LUKA
STROMAL KORNEA TIKUS DENGAN DAN TANPA PEMBERIAN VITAMIN A
TOPIKAL**

Tesis

Diajukan sebagai pemenuhan syarat untuk mendapatkan gelar

Dokter Spesialis Mata



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**PERBANDINGAN GAMBARAN HISTOPATOLOGI PENYEMBUHAN LUKA
STROMAL KORNEA TIKUS DENGAN DAN TANPA PEMBERIAN VITAMIN A
TOPIKAL**

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Abstrak

Pendahuluan: Kornea terdiri dari lima lapisan, yaitu: lapisan epitel, membran bowman, Stromal, membran descemet serta lapisan endotel. Stromal kornea terdiri dari matrix ekstraseluler, keratosit, fibroblas dan serat saraf. Matrix ekstraseluler terdiri dari kolagen dan glikosaminoglikan. Kolagen membentuk lebih dari 70% dari berat kornea. Vitamin A memberikan efek terhadap proliferasi dan migrasi keratosit stromal kornea. Vitamin A dapat menyebabkan peningkatan produksi beberapa komponen matriks ekstraselular stromal seperti kolagen, proteoglikan (*keratocan, lumican, decorin*) dan menurunnya *Matrix Metalloproteinase* (MMPs) serta mengurangi densitas *scar*.

Tujuan: Mengetahui perbandingan jumlah keratosit pada kornea tikus yang mengalami luka stromal pada preparat histopatologis dengan dan tanpa pemberian vitamin A topikal selama 3 hari dan selama 5 hari.

Metode: Metode pengambilan sampel berdasarkan perhitungan besar sampel yang didapatkan dari 28 ekor tikus yang kemudian dibagi dalam 4 kelompok, yaitu kelompok A1 diberi antibiotik topikal selama 3 hari, kelompok A2 diberi antibiotik topikal dan vitamin A topikal selama 3 hari, kelompok B1 diberi antibiotik topikal selama 5 hari, kelompok B2 diberi antibiotik topikal dan vitamin A topikal selama 5 hari. Seluruh tikus diberikan luka stromal kornea dengan kedalaman luka kornea 0,1 mm, panjang 2 mm.

Hasil: Rerata keratosit pada kelompok tanpa terapi Vitamin A topikal selama 5 hari ($30,163 \pm 3,200$) lebih banyak dibandingkan selama 3 hari ($25,436 \pm 3,821$). Rerata keratosit pada kelompok dengan terapi vitamin A topikal selama 5 hari ($36,758 \pm 4,120$) lebih banyak dibandingkan selama 3 hari ($32,108 \pm 3,622$). Rerata jumlah keratosit kelompok dengan terapi vitamin A topikal selama 3 hari lebih banyak dibandingkan tanpa terapi vitamin A topikal. Rerata jumlah keratosit kelompok dengan terapi vitamin A topikal selama 5 hari lebih banyak dibandingkan tanpa terapi vitamin A topikal. Analisis statistik dari rerata jumlah keratosit dilakukan menggunakan uji T-Test dan pada penelitian ini memberikan perbandingan signifikan karena didapatkan nilai $p=0,000$.

Kesimpulan: Pemberian vitamin A topikal pada luka stromal tikus dapat meningkatkan jumlah keratosit selama dibandingkan tanpa vitamin A topikal. Pemberian vitamin A topikal pada luka stromal kornea dapat mempercepat penyembuhan luka stromal.

Keyword: Luka stromal, vitamin A topikal, keratosit



**COMPARISON OF HISTOPATHOLOGICAL DESCRIPTION OF RAT
CORNEA STROMAL WOUND HEALING WITH AND WITHOUT TOPICAL
VITAMIN A THERAPY**

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Abstract

Introduction: The cornea consists of five layers, namely: epithelial layer, Bowman's membrane, Stromal, Descemet's membrane and endothelial layer. The corneal stromal is composed of extracellular matrix, keratocytes, fibroblasts and nerve fibers. The extracellular matrix consists of collagen and glycosaminoglycans. Collagen makes up more than 70% of the weight of the cornea. Vitamin A has an effect on the proliferation and migration of corneal stromal keratocytes. Vitamin A can increase the production of several stromal extracellular matrix components such as collagen, proteoglycans (keratocan, lumican, decorin) and decrease Matrix Metalloproteinases (MMPs) and reduce scar density.

Objective: To compare the number of keratocytes in the cornea of rats with stromal injuries on histopathological preparations with and without topical vitamin A therapy for 3 days and for 5 days.

Methods: The sampling method based on the calculation of the sample size obtained from 28 rats which were then divided into 4 groups, namely group A1 was given topical antibiotics for 3 days, group A2 was given topical antibiotics and topical vitamin A for 3 days, group B1 was given topical antibiotics for 5 days, group B2 was given topical antibiotics and topical vitamin A for 5 days. All rats were given corneal stromal wounds with a corneal wound depth of 0.1 mm, a length of 2 mm.

Results: The mean of keratocytes in the group without topical Vitamin A therapy for 5 days ($30,163 \pm 3,200$) was higher than for 3 days ($25,436 \pm 3,821$). The mean of keratocytes in the group with topical vitamin A therapy for 5 days ($36,758 \pm 4,120$) was higher than for 3 days ($32,108 \pm 3,622$). The mean number of keratocytes in the group with topical vitamin A therapy for 3 days was higher than in the group without topical vitamin A therapy. The mean number of keratocytes in the group with topical vitamin A therapy for 5 days was higher than in the group without topical vitamin A therapy. Statistical analysis of the mean number of keratocytes was carried out using the T-Test test and in this study provides a significant comparison because the p value was 0.000.

Conclusion: Topical vitamin A therapy to rat stromal wounds can increase the number of keratocytes compared to without topical vitamin A therapy. Topical vitamin A therapy to corneal stromal wounds can accelerate stromal wound healing.

Keyword: Stromal wound, topical vitamin A, keratocytes

