INTISARI

KOMBINASI TERBAIK PEMBERIAN TRIAMSINOLON ASETONID DAN 5-FLUOROURASIL TERHADAP MIGRASI SEL DAN SINTESIS TGF-β PADA FIBROBLAS KELOID

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Latar belakang: Keloid merupakan tumor jinak fibroproliferatif dermis yang hanya terdapat pada manusia, ditandai dengan pertumbuhan jaringan parut yang melebihi batas luka aslinya. Proliferasi fibroblas yang berlebihan pada keloid dipengaruhi oleh *Transforming Growth Factor-Beta* (TGF-β) yang berperan mempercepat mitogenesis fibroblas, migrasi fibroblas, merangsang pembentukan kolagen, elastin, dan fibronektin. Tata laksana dengan injeksi kombinasi TAC dengan 5-FU memberikan hasil lebih baik dibandingkan pemberian TAC tunggal maupun 5-FU tunggal secara injeksi intralesi.
Tujuan: Mengetahui perbandingan injeksi TAC dan 5-FU terbaik untuk menghambat migrasi sel dan sintesis TGF-β pada fibroblas keloid.
Metode: Penelitian *in vitro* dengan menggunakan rancangan eksperimental dengan sampel penelitian yang digunakan adalah fibroblas normal dan fibroblas keloid yang diambil dari jaringan keloid kulit dan jaringan normal 2 orang pasien. Fibroblas normal yang digunakan dibiakkan dalam medium *Dulbecco's Modified Eagle's Medium* (DMEM)-Sigma™ lengkap yang mengandung CO_2 5%, 100µg/mL penisilin streptomisin (Penstrep). Gibco™, dengan jumlah sel $5x10^4$ sel/mL. Pengukuran migrasi fibroblas dengan metode *in vitro scratch assay* dan pengukuran TGF-β fibroblas dilakukan sesuai protokol yang dikeluarkan dari *Bender Med System* sebagai prosedur kit pengukuran *Human* TGF-β1.
Hasil : Persentase migrasi pada dosis kombinasi yang paling rendah didapatkan pada dosis V (4,35 µg/mL TAC dan 2 mg/mL 5-FU) yaitu 5,25% dengan *one-way* ANOVA $p<0,05$. Sedangkan hasil hambatan sintesis TGF-β terendah adalah pada dosis VI (2,18 µg/mL TAC dan 4 mg/mL 5-FU) yaitu 67,02 pg/mL dengan *one-way* ANOVA $p<0,05$.
Kesimpulan : Perbandingan injeksi terbaik dalam menghambat migrasi sel dan sintesis TGF-β fibroblas keloid adalah 2,18 µg/mL Triamsinolon asetonid (TAC) dan 4 mg/mL 5-Fluorourasil (5-FU)

Kata kunci: Keloid, TGF-β, migrasi fibroblas, TAC, 5-FU

ABSTRACT

BEST COMBINATION FOR THE TREATMENT OF TRIAMCINOLON ACETONIDE AND 5-FLUOROURACIL ON CELL MIGRATION AND SYNTHESIS OF TGF-β ON FIBROBLAST KELOID

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Background: Keloids are benign fibroproliferative dermis tumors found only in humans, characterized by growth of scar tissue that exceeds the original wound limit. Excessive fibroblast proliferation in keloids is influenced by Transforming Growth Factor-Beta (TGF-β) which plays a role in accelerating mitogenesis of fibroblasts, migration of fibroblasts, stimulating the formation of collagen, elastin, and fibronectin. Management with a combination of TAC and 5-FU injection gives better results than the administration of a single TAC or 5-FU by intralesional injection.
Objective: To find out the best combination of TAC and 5-FU injection to inhibit cell migration and TGF-β synthesis in keloid fibroblasts.
Method: An in vitro study using experimental design with the study sample used was normal fibroblasts and keloid fibroblasts taken from the skin keloid tissue and normal tissue of 2 patients. The normal fibroblasts used were cultured in the Dulbecco Modified Eagle's Medium (DMEM)-Sigma™ medium containing 5% CO_2, 100μg/mL penicillin streptomycin (Penstrep). Gibco™, with a cell number of $5x10^4$ cells/mL. Measuring the migration of fibroblasts with the in vitro scratch assay method and measuring TGF-β fibroblasts were carried out according to the protocol issued by the Bender Med System as a human measurement kit procedure TGF-β1.
Results: The percentage of migration at the lowest combination dose was obtained at dose V (4.35 μg/mL TAC and 2 mg/mL 5-FU) which was 5.25% with one-way ANOVA $p<0.05$. While the lowest inhibition of TGF-β synthesis was at dose VI (2.18 μg/mL TAC and 4 mg/mL 5-FU), which was 67.02 pg/mL with one-way ANOVA $p<0.05$.
Conclusions: Comparison of the best injections in inhibiting cell migration and synthesis of keloid TGF-β fibroblasts is 2.18 μg/mL Triamsinolone acetonide (TAC) and 4 mg/mL 5-Fluorouracil (5-FU)

Keywords: Keloid, TGF-β, migration of fibroblasts, TAC, 5-FU