

INTISARI

PERBANDINGAN EFEKTIVITAS PEMBERIAN DOSIS TUNGGAL TRIAMSIKINOLON ASETONID DAN 5-FLUOROURASIL DENGAN DOSIS KOMBINASI TRIAMSIKINOLON ASETONID-5-FLUOROURASIL TERHADAP MIGRASI DAN PROLIFERASI FIBROBLAS PADA STUDI *IN VITRO* FIBROBLAS KELOID

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Latar Belakang : Angka rekurensi tinggi terjadi pada pasien keloid yang menjalani bedah eksisi. Hasil baik didapatkan pada eksisi keloid disertai dengan pemberian *triamcinolone acetonide* (TAC) dan 5-*fluorouracil* (5-FU). Proliferasi dan migrasi sel fibroblas keloid dapat ditekan dengan pemberian 5-FU murni. Efektivitasnya meningkat pada pemberian tambahan TAC. Pemberian kombinasi TAC dan dosis rendah 5-FU diharapkan lebih efektif menekan proliferasi dan migrasi fibroblas keloid.

Tujuan : Mengetahui efektifitas dosis tunggal TAC, 5-FU, serta kombinasi TAC/5-FU untuk menghambat proliferasi dan migrasi sel fibroblas keloid

Metode: Penelitian *in vitro* dengan menggunakan rancangan eksperimental. Sampel penelitian adalah sel fibroblas yang diisolasi dari 2 jaringan keloid pasien dewasa. Jaringan fibroblas keloid yang sudah dibiakkan kemudian dibagi menjadi beberapa kelompok yaitu kelompok perlakuan dengan pemberian dosis tunggal TAC, 5-FU, dosis kombinasi TAC/5-FU, dan kelompok kontrol. Proliferasi sel fibroblas keloid diukur dengan metode MTT, sedangkan migrasi diukur dengan metode *scratch assay* pada jam ke-24, 48, dan 72.

Hasil : Proliferasi fibroblas keloid paling rendah pada dosis B (8 mg/ml 5-FU) [34,73%], diikuti dosis D (17,38 µg/ml TAC + 0,5 mg/ml 5-FU) [53,19%], dan dosis A (70 µg/ml TAC) [73,15%]. Pada penelitian migrasi fibroblas keloid didapatkan hasil (jam ke-24, 48, dan 72), berurutan dari paling poten adalah dosis dosis B [13,96%, 6,6%, 6,34%], A [12,37%, 9,72%, 14,56%], dan dosis C (34,74 µg/ml TAC + 0,25 mg/ml 5-FU) [18,88%, 12,76%, 19,08%]. Hasil uji Anova didapatkan dengan signifikansi <0,05 menunjukkan adanya perbedaan signifikan antara kelompok perlakuan terhadap kontrol pada indeks proliferasi dan migrasi fibroblas keloid.

Kesimpulan : Dosis tunggal 5-FU lebih efektif dari dosis tunggal TAC dan kombinasi TAC/5-FU untuk menekan proliferasi dan migrasi fibroblas keloid. Dosis kombinasi mampu menekan proliferasi dan migrasi keloid secara signifikan terhadap kontrol. Dosis kombinasi digunakan untuk mengurangi efek samping.

Kata Kunci : Fibroblas keloid, *in vitro*, TAC, 5-FU, dosis kombinasi

ABSTRACT

COMPARISON OF THE EFFECTIVENESS BETWEEN GIVING SINGLE DOSE AND COMBINATION DOSE OF TRIAMCINOLONE ACETONIDE AND 5-FLUOROURACIL ON PROLIFERATION AND MIGRATION OF KELOID FIBROBLAST, *IN VITRO* STUDY

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Background : High recurrence rates occurred in keloid patients undergoing excision surgery. Good results were found in keloid excision accompanied by administration of triamcinolone acetonide (TAC) and 5-fluorouracil (5-FU). Proliferation and migration of keloid fibroblasts can be suppressed by administration of pure 5-FU. Its effectiveness is increased in the addition of TAC. Giving a combination of TAC and low-dose 5-FU is expected to more effectively suppress the proliferation and migration of keloid fibroblasts.

Objective : To determine the effectiveness of a single dose of TAC, 5-FU, and the combination of TAC / 5-FU to inhibit proliferation and migration of keloid fibroblasts

Method : An *in vitro* study using an experimental design. The research sample was fibroblast cells isolated from 2 keloid tissues of adult patients. The tissue of keloid fibroblasts that have been cultured was divided into several groups, namely the treatment group by administering a single dose of TAC, 5-FU, the combination dose of TAC / 5-FU, and the control group. Proliferation of keloid fibroblasts was measured by the MTT method, while migration was measured by the scratch assay method at 24, 48 and 72 hours.

Results : The lowest proliferation of keloid fibroblasts was seen at dose B (8 mg/ml 5-FU) [34.73%], followed by D dose (17.38 µg / ml TAC + 0.5 mg / ml 5-FU) [53 , 19%], and dose A (70 µg / ml TAC) [73.15%]. In the migration study of keloid fibroblasts, results were obtained (at 24th, 48th and 72nd hour), the most potent sequences were the dose B dose [13.96%, 6.6%, 6.34%], A [12.37% , 9.72%, 14.56%, and dose C (34.74 µg / ml TAC + 0.25 mg / ml 5-FU) [18.88%, 12.76%, 19.08%] . The ANOVA test was done to compare difference between the treatment and control groups.

Conclusion : A single 5-FU dose is more effective than a single dose of TAC and a combination of TAC / 5-FU to suppress the proliferation and migration of keloid fibroblasts. Combination doses can significantly reduce keloid fibroblast proliferation and migration. Combination doses are used to reduce side effects.

Keywords : Keloid fibroblasts, *in vitro*, TAC, 5-FU, combination doses