

ABSTRACT

**Changes in Interleukin-6 Tear Concentration and Clinical Outcome in
Moderate-to-Severe Bacterial Corneal Ulcers After Autologous Platelet Rich
Plasma Eyedrop as Adjuvant Therapy**

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Objective: To evaluate interleukin-6 (IL-6) tear concentration and clinical outcome in patients with moderate-to-severe bacterial corneal ulcers pre and post autologous platelet rich plasma (PRP) eye drop therapy.

Material and Methods: This pre-post designed study involving 21 moderate-severe corneal ulcer patients who got autologous platelet rich plasma eye drop. Subjects were got autologous platelet rich plasma eye drop as adjuvant therapy at the eye clinic of Dr. Sardjito hospital. Tear sampling was performed before therapy using sterile schirmer paper from conjunctival inferior fornix. PRP therapy was performed for 7 days. Data recording and tear sampling were then performed at day 0, day 7, and day 14 after platelet rich plasma therapy. Data recording included, presence of pericorneal injection, blepharospasm, size of corneal defects, and hypopyon.

Results: There was a decrease in IL-6 tear concentration by day 14 after PRP therapy ($P=0.000$). IL-6 concentration at day 7 after therapy (7525.67 ± 7092 pg/mL) tended to be lower than before therapy (10599 ± 6158 pg/mL), but the difference was not statistically significant ($P=0.156$). The size of corneal defects decreased significantly post PRP at day 7 ($P=0.035$) and at day 14 ($P=0,001$). There were significant blepharospasm decrease at day 7 ($P=0.012$) and day 14 ($P=0,000$). There was a significant pericorneal injection only at day 14 ($P=0.002$). There was no significant decrease hypopyon.

Conclusion: There was significant reduction in IL-6 tear concentration and clinical improvement in moderate to severe bacterial corneal ulcers which got autologous PRP eye drop as adjuvant therapy.

Keywords: platelet rich plasma, corneal ulceration, interleukin 6

INTISARI

Perubahan Kadar IL-6 di Air Mata Pada Ulkus Kornea Infeksi Bakteri Derajat Sedang-Berat Sebelum dan Sesudah Terapi Tambahan Platelet Rich Plasma Autolog Tetes Mata

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Tujuan: Mengetahui perubahan kadar IL-6 di air mata dan perubahan kondisi klinis pada pasien ulkus kornea infeksi bakteri derajat sedang-berat sebelum dan sesudah pemberian tetes mata *platelet rich plasma* (PRP).

Bahan dan Metode: Menggunakan rancangan penelitian pre-post design dengan jumlah sampel 21 pasien ulkus kornea sedang-berat yang mendapatkan terapi tambahan tetes mata PRP di Poliklinik Mata RSUP Dr.Sardjito. Sampel air mata pertama diambil menggunakan kertas Schimer secara steril, dari fornix inferior konjungtiva. Terapi tambahan tetes mata PRP diberikan selama 7 hari. Pencatatan data dan pengambilan sampel air mata dilakukan pada hari 0, 7, dan 14 1 jam dan 7 hari sesudah terapi tambahan tetes mata PRP; data meliputi injeksi perikornea, blepharospasme, luas defek kornea, dan hipopion.

Hasil: Terdapat penurunan kadar IL-6 pada hari ke 14 setelah pemberian terapi (P=0.000). Kadar IL-6 pada hari ke 7 setelah pemberian terapi tambahan PRP (7525.67±7092 pg/mL) cenderung menurun dibandingkan dengan sebelum terapi (10599±6158 pg/mL), tetapi tidak bermakna signifikan (P=0.156). Ukuran defek kornea menurun secara signifikan pada hari ke 7 setelah pemberian PRP (P=0.035) dan hari ke 14 (P=0,001). Terdapat penurunan derajat blepharospasme pada hari ke 7 (P=0.012) dan hari ke 14 (P=0,000). Penurunan derajat injeksi perikornea signifikan hanya terjadi pada hari ke 14 (P=0.002). Tidak ada penurunan signifikan pada hipopion.

Kesimpulan: Terdapat penurunan kadar IL-6 secara signifikan dan terjadi perbaikan klinis pada ulkus kornea infeksi bakteri derajat sedang-berat setelah terapi tambahan tetes mata PRP.

Kata Kunci: *platelet rich plasma*, ulkus kornea, interleukin-6