

## ABSTRACT

### **Efficacy of Sub-tenon Triamcinolone Acetonide 40 mg Versus 0.1% Dexamethasone Eye Drops in Interleukin-6 (IL-6) Tear Levels and Clinical Changes in Subjects with Complicated Cataract after Phacoemulsification.**

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#### **Background**

To compare the efficacy of sub-tenon corticosteroid triamcinolone acetonide (TCA) 40mg injections with corticosteroid dexamethasone 0.1% eye drops in Interleukin-6 (IL-6) levels in tears and ocular clinical parameters after performing phacoemulsification in complicated cataracts.

#### **Methods**

This study was a randomized double blinded-controlled trial with total of 36 patients (36 eyes) who had complicated cataracts and underwent uneventful phacoemulsification were divided equally into a control group (18 patients) who received topical dexamethasone 0.1% eye drops and an intervention group (18 patients) who received a sub-tenon injection of Triamcinolone acetonide 40 mg. IL-6 levels in tears, Macular OCT (Optical Coherence Topography), Best Corrected Visual Acuity (BCVA), and Intraocular Pressure (IOP) were measured one day prior to surgery and 28 days postoperatively.

#### **Results**

The mean IL-6 levels 28 days post-operation was  $23.82 \pm 18.12$  pg/ml in the control group and  $7.88 \pm 3.07$  pg/ml in the intervention group. The mean CST, CV, and CAT was  $259.20 \pm 54.63$   $\mu$ m,  $10.16 \pm 1.56$  mm<sup>3</sup>, and  $296.27 \pm 57.32$   $\mu$ m in the control group. The mean CST, CV, and CAT was  $264.20 \pm 42.33$   $\mu$ m,  $10.32 \pm 1.43$  mm<sup>3</sup>,  $275.77 \pm 50.78$   $\mu$ m. The mean BCVA 28 days post-operation was 1.01 LogMar in the control group and 1.02 LogMar in the intervention group. The mean IOP 28 days post-operation was 17.72 mmHg in the control group and 15.05 mmHg in the intervention group. There was no statistical difference between both groups in the IL-6 tear levels, OCT macular thickness (CST, CV, CAT), BCVA, and IOP.

#### **Conclusion**

There was no statistical difference between both groups in IL-6 tear levels, Macular OCT Thickness, BCVA, and IOP. Both groups had similarities in terms of anti-inflammatory properties as well as clinical safety. The option of choosing anti-inflammatory drugs after phacoemulsification in complicated cataracts is based on surgeon preference.

#### **Keywords**

Complicated cataract, phacoemulsification, IL-6, anti-inflammation

## INTISARI

### **Efek Injeksi Subtenon Triamcinolone Acetonide (TCA) 40mg Dibandingkan dengan Tetes Mata Dexamethasone 0,1%: Pengamatan Kadar IL-6 Air Mata dan Tanda Klinis Peradangan Sebelum dan Sesudah Fakoemulsifikasi pada Katarak Komplikata.**

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### **Latar Belakang**

Penelitian ini bertujuan untuk membandingkan efek injeksi triamcinolone acetonide 40mg dengan tetes topikal dexamethasone 0.1% pada kadar IL-6 air mata serta parameter klinis lain pada pasien dengan katarak komplikata yang menjalani prosedur fakoemulsifikasi.

### **Metode**

Penelitian ini merupakan jenis *randomized double blinded-controlled trial* dengan total 36 pasien yang terdiagnosis katarak komplikata dan menjalani fakoemulsifikasi tanpa komplikasi. Sampel dibagi menjadi 2 kelompok yaitu kelompok kontrol (18 pasien) yang menerima tetes mata topikal dexamethasone 0.1%, dan kelompok intervensi (18 pasien) yang menerima injeksi subtenon triamcinolone acetonide 40mg. Dilakukan penelitian kadar IL-6 air mata, ketebalan OCT makula, *Best Corrected Visual Acuity* (BCVA), dan tekanan intrakokular (TIO) pada 1 hari sebelum operasi dan 28 hari pasca operasi.

### **Hasil**

Rerata kadar IL-6 28 hari pasca operasi adalah  $23.82 \pm 18.12$  pg/ml pada kelompok kontrol dan  $7.88 \pm 3.07$  pg/ml pada kelompok intervensi. Rerata CST, CV, dan CAT adalah  $259.20 \pm 54.63$   $\mu$ m,  $10.16 \pm 1.56$  mm<sup>3</sup>, dan  $296.27 \pm 57.32$   $\mu$ m pada kelompok kontrol, sedangkan rerata CST, CV, dan CAT yaitu  $264.20 \pm 42.33$   $\mu$ m,  $10.32 \pm 1.43$  mm<sup>3</sup>, dan  $275.77 \pm 50.78$   $\mu$ m pada kelompok intervensi. Rerata BCVA 28 pasca operasi adalah 1.01 LogMar pada kelompok kontrol and 1.02 LogMar pada kelompok intervensi. Rerata TIO 28 hari pasca operasi adalah 17.72 mmHg pada kelompok kontrol dan 15.05 mmHg pada kelompok intervensi. Tidak ditemukan perbedaan signifikan pada kadar IL-6 air mata, ketebalan OCT makula (CST, CV, CAT), BCVA, dan TIO.

### **Kesimpulan**

Tidak ditemukan perbedaan signifikan pada kadar IL-6 air mata, ketebalan OCT makula (CST, CV, CAT), BCVA, dan TIO. Kedua kelompok memiliki efek anti-inflamasi dan keamanan yang serupa. Pemilihan anti-inflamasi pasca fakoemulsifikasi pada katarak komplikata berdasarkan preferensi dokter mata.

### **Kata Kunci**

Katarak komplikata, fakoemulsifikasi, IL-6, anti-inflamasi