The efficacy of dexamethasone implant in the treatment of cystoid macular edema secondary to non-infectious posterior uveitis

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Background:

Uveitis is an ocular inflamatory disorder that can lead to severe vision loss. Cystoid macular edema (CME) is leading cause of vision loss in patients with posterior and panuveitis. Many different interventions have been used in the treatment of uveitic CME. Corticosteroids remain the mainstay of treatment, while long term therapy is avoided due to ocular and systemic side effects. Slow-release intravitreal corticosteroid implants have been developed in an effort to minimize systemic side effects by delivering locally and ocular side effects by reducing treatment frequency.

In this study, we examine the use of single or multiple dose intravitreal 0.7 mg dexamethasone (DEX) implant (Ozurdex; Allergan, Inc, Irvine, CA) in patients with non-infectious posterior or panuveitis, with the aim to investigate anatomic efficacy and visual acuity outcomes.

Patients & Methods:

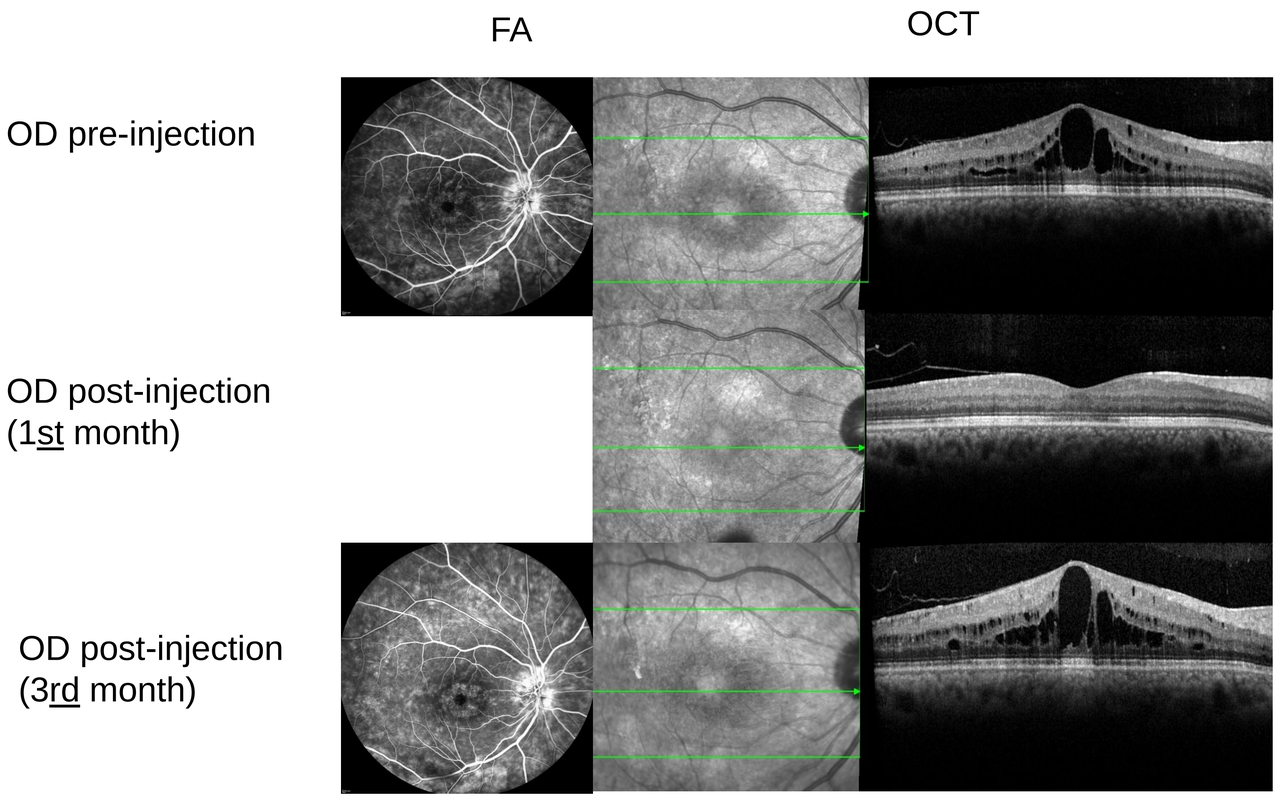
A retrospective review of patients treated with 0.7 mg DEX intravitreal implant for uveitic CME was conducted. Patients with CME due to diabetes and retinal vein occlusion were excluded. Patients were treated with single or repeat dose of slow-release DEX intravitreal implant. Cystoid macular edema was defined as central macular thickness (CMT) >300 μm with the presence of typical intraretinal cysts on spectral domain optical coherence tomography (SD-OCT, Spectralis HRA+OCT, Heidelberg Engineering, Heidelberg, Germany) Best-corrected visual acuity (BCVA)(Snellen scale) and CMT were recorded at baseline, 1 and 3 months after injections. Post-injection complications such as increased intraocular pressure was recorded.

Results:

A total of 11 patients who did not respond sufficiently to standard uveitis therapy and had CME secondary to non-infectious posterior or pan-uveitis were included in the study. There were 9 female and 2 male patients, with the mean age of 45.7 ± 14.1 years. The etiology of uveitis in these patients were Behcet Disease (n=2), systemic lupus erithematosus (n=1) and idiopathic posterior or panuveitis (n=8). A total of 19 implants were administered in 13 eyes. 3 eyes (23.1%) underwent repeated injections because of an increase in CMT after 6 months. At baseline mean BCVA was 0.53 ± 0.21 logMAR and mean CMT was 527 ± 144 μm. 1 month after the injections, mean BCVA improved to 0.40 ± 0.21 logMAR ($p=0.059$) and mean CMT decreased to 245 ± 71 μm ($p<0.05$).Cystoid macular edema resolved in 12 eyes (92.3 %), only 1 eye had still CME with 100 μm decrease in CMT (7.7%). Three months after the injections, mean BCVA decreased to 0.45 ± 0.22 logMAR ($p>0.05$) and CMT was 327 ± 149μm ($p<0.05$). Post-injection intraocular pressure increase was recorded in 2 eyes (15.4%) and treated with topical antiglaucomatous therapy.

Figures case 1:

- **A 47 year-old woman**



Conclusions:

Slow-release DEX intravitreal implant improved CME at first month in 92.3% of eyes and >100 μm decrease in CMT as measured by SD-OCT was seen in all eyes. The results of our study were comparable to other studies, this is probably because of the high anti-inflammatory activity of DEX. Time to relapse of CME was shorter than 6 months in 38.5% of eyes. 23.1% of the total eyes underwent repeat injections at 6 months. Reinjection is recommended to be performed at 4-6 months.

The mean BCVA in our study improved at first and third months compare to the baseline, but the difference is not statistically significant. The study population has long-standing macular edema, resistant to standard therapy. DEX intravitreal implant can restore structural changes even in severe cases. However, secondary photoreceptor damage can limit the improvement in visual acuity.

The rate of intraocular pressure increase as an adverse event was comparable to other studies. Incidence of cataract can not be observed probably because of the short follow-up period.

The main limitations of this study are the retrospective study design, the small sample size and the short duration of follow-up.

In conclusion, the results of our study suggest that the DEX intravitreal implant seems to be effective in resolution of CME secondary to non-infectious posterior or panuveitis in short term but uveitic CME tends to relapse in 6 months.