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Original article

Study of the effect of intravitreal dexamethasone implant in pseudophakic macular edema. Preliminary[☆]



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ABSTRACT

Objective: To evaluate the efficacy of intravitreal dexamethasone implant on the treatment of pseudophakic macular edema (PME).

Materials and methods: A retrospective, observational, descriptive study was conducted on 4 patients who received an intravitreal injection of dexamethasone implant due to PME in the period from 1st January 2013 to 31st December 2013 in the Hospital Universitario de La Ribera (Alzira, Valencia, Spain). A complete ophthalmic examination was performed on these patients. Best-corrected visual acuity (BCVA), macular thickness, and duration of the effect of the treatment were studied.

Results: At baseline, the mean MT was 414 μm . After dexamethasone implant, mean values of MT decreased to 330.25 μm at month one. The mean change from baseline MT was 83.75 μm . The baseline mean BCVA was 0.3 and improved to 0.575 at month one and 3. The mean duration of the effect of the treatment was 3.5 months.

Conclusions: Intravitreal dexamethasone implant is a possible treatment for Irvine-Gass syndrome as it improved visual acuity and reduced the macular thickness of these patients.

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Estudio de la eficacia del implante intravítreo de dexametasona en el edema macular pseudofáquico. Resultados preliminares

RESUMEN

Objetivo: Estudiar la eficacia del implante intravítreo de dexametasona (Ozurdex) en el tratamiento del edema macular (EMQ) pseudofáquico.

Material y métodos: Se ha realizado un estudio descriptivo observacional retrospectivo de un periodo de un año de duración (desde el 1 de enero de 2013 hasta el 31 de diciembre del

Palabras clave:

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Irvine-Gass
Tratamiento

2013) sobre todos aquellos pacientes con EMQ pseudofáquico tratados con dexametasona intravítrea en el Hospital Universitario de La Ribera. Las variables a estudio son la agudeza visual (AV), el espesor macular y el tiempo de duración del efecto del tratamiento.

Resultados: Los resultados preliminares obtenidos muestran una disminución del espesor macular de 83,75 μ de media, comparando la media de los valores previos al tratamiento (414 μ) y los de un mes tras el tratamiento (330,25 μ). La AV aumentó, con una AV media pretratamiento de 0,3 mientras que la AV media al mes y a los 3 meses de tratamiento fue de 0,575. La media de la duración del efecto fue de 3,5 meses.

Conclusiones: El implante intravítreo de dexametasona (Ozurdex) es un posible tratamiento para el síndrome de Irvine-Gass, dado que reduce el espesor macular y mejora la AV de estos pacientes.

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Introduction

Cystic macular edema (CME) is the accumulation of extracellular liquid between the external plexiform layer and the internal nuclear layer of the macula due to alterations in the retinal barrier permeability.

CME occurring after cataract surgery is known as the Irvine-Gass syndrome.¹

When cataract surgery was performed with the intracapsular technique, the incidence of CME was 60%. Subsequently, with new techniques such as extracapsular extraction, said percentage went down to 20–30%. At present, with the use of phacoemulsification an incidence of between 1% and 2% is estimated.²

Risk factors for CME include capsular rupture, intraocular lens (IOL) dislocation, IOL in anterior chamber, patients with diabetes, epiretinal membrane and retinal venous occlusion.³

As set forth in the literature, persistent CME is treated applying topical NSAIDs, topical corticoids or posterior periorbital injection. In some cases, systemic and topical carbonic anhydrase inhibitors could be useful, as well as intravitreal triamcinolone or intravitreal anti-VEGF. In some cases, pars plana vitrectomy can be considered when CME is resistant to medical treatment.⁴

At this point in time, the use of intravitreal dexamethasone is not indicated and there are no clinical trials for this use. However some published clinic cases have reported the use of intravitreal dexamethasone for pseudophakic CME.⁵ Accordingly, at present the only indications approved for the utilization of intravitreal implant of dexamethasone (Ozurdex) are macular edema associated to retinal venous occlusion, diabetic macular edema and non-infectious uveitis in the posterior segment of the eye. However, in view of the positive response of patients treated with this drug for the Irvine-Gass syndrome, the authors have considered carrying out a retrospective observational study supported by existing data in a study published in 2013 in which the use of said drug provided statistically significant results⁶ for assessing response to treatment with dexamethasone after pseudophakic CME.

The objective of this study is to assess whether treatment with intravitreal dexamethasone improves CME caused by cataract surgery. Accordingly, considering the null hypothesis

that the intravitreal implant of dexamethasone does not produce any improvement in the Irvine-Gass syndrome, the alternative hypotheses proposes that treatment with Ozurdex does improve CME caused after lens phacoemulsification.

Subjects, materials and methods

The present study is a retrospective observational descriptive case series study collecting data of all patients who in the course of a year were treated with intravitreal dexamethasone implant (Ozurdex) due to the appearance of CME in the post-operative period of cataract extraction surgery, excluding all patients with previous CME or retinal surgery prior to phacoemulsification.

The injection of the intravitreal dexamethasone implant (Ozurdex) was performed in the operating room, with previous antibiotic prophylaxis with topical ciprofloxacin every 8 h 3 days prior to the injection. In the operating room, iodine povidone was applied on the periorbital area and diluted iodine povidone in the ocular surface after placing the blepharostat. Subsequently, 2% subconjunctival lidocaine was injected for anesthesia, after which the dexamethasone intravitreal implant was injected. The entire procedure was performed with sterile gloves and mask. The patient was released the same day with the prescription of maintaining the antibiotic treatment for 5 additional days. The following day intraocular pressure was checked.

Study variables comprise macular thickness, visual acuity (VA) and duration of treatment effects. Macular thickness was measured with a Carl Zeiss optic coherence tomography equipment having the micron as unit of measure. VA was explored with the Snellen table at 6m distance, taking the decimal scale as unit of measure. The duration of the effect was measured in months.

Results

The preliminary results obtained after analyzing data of 4 treated patients with intravitreal dexamethasone implant are the following.

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