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Case Report

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Resolution of Refractory Non-Infectious Chronic Uveitic Cystoid Macular Oedema with a Single Intravitreal Etamsylate Injection

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Abstract

Uveitic (or inflammatory) macular oedema is one of the most common cause of visual impairment in patients with uveitis and the most frequent structural complications of uveitis. This study showed efficacy and safety of intravitreal etamsylate injection in the treatment of macular oedema due to posterior chronic uveitis. In parallel with resolution of the macular oedema, visual acuity was significantly improved after treatment. It is concluded that, in such a condition, etamsylate may be an effective treatment option to control macular oedema.

Keywords: *Refractory uveitic macular oedema; Fibroblast growth factor; Intravitreal etamsylate*

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Introduction

Uveitis is a group of ocular inflammatory conditions that can lead to severe vision loss. Macular oedema is one of the clinical manifestation of uveitis leading to reduced visual acuity. Uveitic macular oedema most commonly occurs because of chronic intraocular inflammation [1]. Macular oedema causes an inflammatory response releasing mediators which damage the retinal pigment epithelium (RPE). This results in leakage into the retina, especially at the macula [2]. Chronic macular oedema in uveitis patients may lead to macular cysts and macular holes, resulting in no reversible loss of visual acuity. Development of an epiretinal membrane is also a consequence of chronic uveitic macular oedema. Refractory macular oedema usually occurs in patients with chronic or recurrent uveitis.

Therapeutic interventions are targeted to resolve the inflammatory response in uveitis as well as to treat or prevent the recurrence of macular oedema. In this sense, steroids (by means of injections or implants) are the standard treatment of uveitic macular oedema but they may be associated with risk of intraocular pressure elevation as well as predisposition to cataract formation [3].

Furthermore, anti-VEGF agents, administered as a single or multiple intravitreal injections, have been used to treat uveitic macular oedema but no long-term prospective studies have proven to be effective in uveitic macular oedema [4-7]. In this scenario, research on new anti-inflammatory compounds with safety profiles in toxicity has been salient. Previously, we have reported the efficacy and safety of etamsylate, an inhibitor of fibroblast growth factor (FGF) [8] in several inflammatory diseases, including both types of age-related macular degeneration (AMD) [9,10]. Etamsylate is the N-Ethylethanamine salt of the dobesilic acid, an analogous of gentisic acid, a main catabolite of aspirin [8]. The objective of this study was to investigate the effects of intravitreal administration of etamsylate in a patient with refractory non-infectious chronic uveitis.

Case Presentation

A 32-year-old female who has a history of right eye posterior uveitis for two years presented with decreased vision in the affected eye. She had previously received intravitreal dexamethasone implant (Ozurdex) and 6 Lucentis injections in her right eye. A full general and ophthalmic examination (including anterior segment bio-microscopy, fundoscopy, intraocular pressure measurement, best-corrected visual acuity (BCVA) and a spectral-domain optical coherence tomography (SD-OCT) were performed. BCVA was obtained with a projected Snellen chart. According to fundoscopy and SD-OCT data patient showed morphological features of non-infectious uveitic macular oedema. BCVA was 0.10 and central macular thickness (CMT) was 402 µm. After discussion with the patient regarding the benefits, risks and alternatives of treatment, she chose intravitreal etamsylate administration. Informed consent was obtained. The study was approved by the institution review board and it followed the principles outlined in the Declaration of Helsinki.

Treatment

Intravitreal etamsylate (Dycinone®, Sanofi. France) injection (150 µl) was administered in the operating room under complete aseptic conditions with topical anesthesia. Topical ciprofloxacin was given 4 times a day for 5 days postoperatively. After treatment, patient was examined at day 1 and 7, and 3 months thereafter. At day 1 and day 7, injected eye underwent an ophthalmic examination for anterior chamber reaction and intraocular pressure rise. All ocular and systemic adverse events, including information on their relationship to drug and procedure, were recorded at each visit.

Results and Discussion

A substantial reduction of CMT after intravitreal etamsylate injection (402 µm vs 270 µm) was observed. Furthermore, BCVA improves significantly from 0.10 at baseline (treatment start) to 0.70 at last follow-up visit (3 months). No adverse effects were referred.

Chronic inflammatory process has a significant, if no primary role, in ophthalmic diseases. The goal of uveitis treatment should not only be to suppress inflammation when it recurs but also to attain complete remission of inflammation and prevent complications such as cystoid macular oedema.

An inflammatory agent has been described to be closely related to several ocular diseases, which is the protein known as fibroblast growth factor (FGF) [11]. Inflammation elicited by FGF is prone to the consolidation of a positive inflammatory feedback loop typical of chronic diseases since it induces the upregulation of the synthesis of COX-2 and phospholipase A2 which reciprocally promote the expression of FGF [12]. Inhibition of FGF obviously interrupts these loops, which probably explain the success of the clinical benefits in treating chronic inflammatory diseases [13], as shown in the results presented here with a single punctual treatment of etamsylate.

Conclusion

Intravitreal etamsylate for the management of uveitis can favourably modify the course of this condition, indicating that blockade of FGF may restore the integrity of the blood-retinal barrier, reduce central macular thickness and significantly improve visual function. Additional studies are needed to confirm the results.

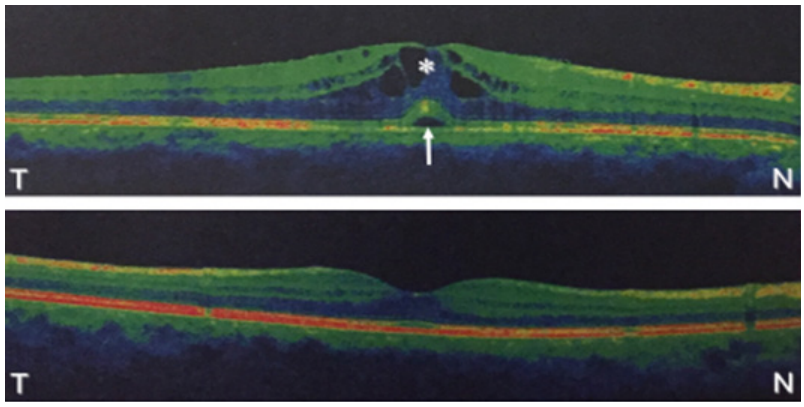

Figure 1: *Comparison Cross-sectional spectral-domain optical coherence scans in a patient with uveitic macular oedema.*

Upper image: pre-treatment scan showing central macular thickness of 402 µm. Arrow indicates neurosensory detachment; asterisk denotes, cystic oedema. Lower image: post-treatment scan showing normal retina with central macular thickness reduction to 270 µm. Note the resolution of macular oedema as well as neurosensory detachment. N, nasal; T, temporal.

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