



ORIGINAL ARTICLE

# Indicators of Post-Operative Intraocular Pressure Elevation after Naïve Fluocinolone Acetonide Surgical Implantation

Aaron J. Sadowsky, MS, Paula E. Pecen, MD, Eric Feinstein, MD, and Alan G. Palestine, MD

*Department of Ophthalmology, University of Colorado School of Medicine, Aurora, CO, USA*

## ABSTRACT

**Purpose:** To determine factors conferring an increased risk of developing ocular hypertension secondary to the fluocinolone acetonide (FA) sustained-release surgical implant (Retisert).

**Design:** Retrospective, observational case series.

**Methods:** Patients with a history of chronic noninfectious posterior uveitis undergoing naïve surgical FA implantation from 2007 to 2018 at the University of Colorado were studied. Patient demographics and multiple clinical measures were noted one year before and after FA implantation.

**Results:** Twenty-nine eyes of 21 patients were studied. The median age experiencing an IOP rise vs median age experiencing no IOP rise post-FA implantation was 27.0 and 54.0 years old, respectively ( $p = .01$ ). A pre-FA implant risk factor of needing future glaucoma surgery after FA implantation is prior to maximum IOP ( $p = .02$ ).

**Conclusions:** A **risk factor** of elevated post-FA implantation IOP includes younger age. A potential risk factor for glaucoma surgery after FA implantation was higher maximum IOP before FA implantation.

**Keywords:** Fluocinolone acetonide implant, glaucoma, inflammatory bowel disease, intraocular pressure, retinal vasculitis, Retisert

Increased intraocular pressure (IOP) is a significant complication of uveitis that can arise due to the uveitis itself or to corticosteroid therapy. Glaucoma is an optic neuropathy where elevated IOP is a risk factor for visual loss and is defined as optic nerve cupping, progressive visual field loss, or retinal nerve fiber layer thinning on optical coherence tomography scan.<sup>1</sup> **Secondary glaucoma from steroid exposure has been reported to occur in 9.6–18.3% of patients with uveitis.**<sup>2–5</sup> The prevalence of secondary glaucoma also depends on disease chronicity and has been observed in 12% of patients with an acute uveitis and 26% of patients with chronic uveitis.<sup>6</sup>

**Posterior uveitis often requires treatment with intravitreal or periocular corticosteroids or systemic immunosuppression as it is usually not responsive to topical medications prescribed for anterior uveitis.**<sup>7</sup> Corticosteroid therapies for noninfectious uveitis resulting in elevated IOP have been well-described; one-third

of eyes treated with topical corticosteroid therapy such as betamethasone or dexamethasone for noninfectious uveitis develop elevated IOP.<sup>4,8–10</sup> Other forms of local corticosteroid therapy have been found to elevate IOP as well. For example, 34.6% of patients receiving intravitreal triamcinolone acetonide therapy for a variety of posterior segment disorders experienced IOP elevation in excess of 21 mmHg from baseline, within 12 months post-injection.<sup>11</sup> Additionally, data from the POINT study showed that both an intravitreal triamcinolone acetonide implant, as well as an intravitreal dexamethasone implant, were superior modes of treatment for treating uveitic macular edema in comparison to periocular triamcinolone acetonide.<sup>12</sup> Fluocinolone acetonide (FA) intravitreal surgical implantation (Retisert; Bausch & Lomb, Inc., Rochester, New York, USA) is preferable in some patients to avoid repeated injections and provide long-term stable inflammation control, whereas the three drugs studied in the POINT study had a maximum effect

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Correspondence: Paula E. Pecen, MD, Rocky Mountain Lions Eye Institute, 1675 Aurora Court, Mailstop F731, Aurora, CO 80045, USA.  
E-mail: paula.pecen@ucdenver.edu