Macula Society Collaborative Retrospective Study of Ocriplasmin for Vitreomacular Traction

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OBJECTIVE To describe the "real world" outcomes of the use of ocriplasmin for vitreoretinal macular traction.

PURPOSE To assess anatomic and visual outcomes of ocriplasmin for treatment of vitreomacular traction (VMT).

METHODS Macula Society members were surveyed online to retrospectively collect data on patients receiving ocriplasmin for VMT. Clinical findings, optical coherence tomography (OCT) parameters, change in visual acuity, and adverse events were collected online using standardized forms.

RESULTS 223 eyes with VMT received ocriplasmin. Baseline macular hole (MH) was noted in 79 eyes (35%). VMT was focal (<1500 μ) in 95% of eyes and MH was < 400 μ in 83% of eyes. VMT resolved in 44% of eyes by 1 week, 50% by 1 month, 58% by 12 weeks and 74% at the final visit. Pars plana vitrectomy (PPVx) was performed in 6% by 1 month, 15% by 12 weeks and 29% by the last follow-up. MH closure without PPVx occurred in 16% by 1 week, 35% by 4 weeks, 40% at 12 weeks and 40% at the final visit. Mean change between baseline and final visual acuities was -0.14 logMAR;15% of eyes lost ≥ 2 lines and 39% gained ≥ 2 lines. Scleral buckling with PPVx was performed in 1 eye and cataract extraction in 10 eyes. Complications included photopsias (35 eyes), dimness of vision (35 eyes), decreased color vision (23 eyes), new MH (11 eyes), macular

RPE atrophy (6 eyes), retinal detachment (4 eyes), retinal tear (2 eyes) and diminished ERG (9 eyes, 8 of which had MH). No cases of endophthalmitis were reported.

CONCLUSION Ocriplasmin results in release of VMT in 45% of eyes and closure of macular holes in 40% without PPVx with stable or improved visual acuity in 85% eyes. Adverse events were not infrequent but mostly not serious.

TAKE HOME MESSAGE Release of VMT and macular hole closure rates were equivalent in patients with symptomatic VMT; adverse events, although frequent, were typically not severe.

HUMAN RESEARCH This study involves human research.
IRB Approval Status: Approved by institutional review board

A New Biosimilar Ranibizumab for Retinal Diseases

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OBJECTIVE To evaluate the efficacy and safety of a new intravitreal biosimilar ranibizumab injection in retinal vascular diseases

PURPOSE To evaluate the efficacy and safety of a new intravitreal biosimilar ranibizumab (0.5mg) injection in the treatment of various retinal vascular diseases.

METHODS A prospective consecutive case series of eyes with choroidal neovascularization (CNV) secondary to age-related macular degeneration (AMD), retinal vein occlusion (RVO) and diabetic macular edema (DME), each of which received intravitreal injections of a biosimilar ranibizumab (0.5mg). Comprehensive ophthalmic examinations and detailed systemic evaluations were performed at baseline and all follow-up visits. Electroretinography (ERG) was performed at day 30 or later. Primary outcome measures were changes in best-corrected visual acuity and central subfield thickness. Secondary outcome measures included safety parameters in the form of signs of clinical and electroretinographic toxicity.

RESULTS Forty three eyes of 33 patients were treated with a total of 53 injections. Of these, 19 eyes had CNV from AMD, 15 eyes had DME and 9 eyes had macular edema due to RVO. All eyes had resolution of retinal edema with the central subfield thickness reducing from a mean of 334.15 microns to 289.63 microns ($p<0.001$). Mean post-injection LogMar visual acuity also significantly imrpoved from 0.61 to 0.50 ($p<0.05$). None of the patients complained of blurred vision, ocular pain, or bulbar

injection at any of the follow-up visits, nor was intraocular inflammation noted. None of the patients experienced serious ocular or systemic adverse events. ERG did not reveal any abnormalities.

CONCLUSION Intravitreal injections of a new biosimilar ranibizumab in retinal vascular diseases appear to be effective and safe. This new biosimilar ranibizumab could become a safe, low-cost therapy for retinal diseases.

TAKE HOME MESSAGE A new biosmilar ranibizumab (0.5mg) given intravitreally could be a safe, effective and cost-effective treatment in retinal vascular diseases.

HUMAN RESEARCH This study involves human research.
IRB Approval Status: Approved by institutional review board

Secondary Ocular Hypertension and the Need for Glaucoma Surgery After Dexamethasone Intravitreal Implant in Routine Clinical Practice

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OBJECTIVE To determine the rate of ocular hypertension after dexamethasone intravitreal implant use in real-world clinical use and identify patient characteristics associated with a subsequent need for glaucoma surgery.

PURPOSE Secondary ocular hypertension (OHT) is one of the most concerning adverse events of the sustained-release dexamethasone intravitreal implant. We conducted a multicenter retrospective study to evaluate the incidence of secondary OHT induced by dexamethasone intravitreal implant and requiring glaucoma surgery.

METHODS The charts of 262 eyes from patients with diabetic macular edema (DME), retinal vein occlusion (RVO), uveitis and macular edema (ME) secondary to various causes treated with one or more implants were retrospectively reviewed. Intraocular pressure (IOP), IOP-lowering medications and glaucoma interventions were collected before and after implantation. The main outcome measures were the incidence of IOP greater than 25 mmHg, the incidence of IOP greater than 35 mmHg, the incidence of IOP elevation more than 10 mmHg from baseline, and severe OHT requiring glaucoma surgery.

RESULTS Patients' mean age was 66.37±16.49 years. 52 eyes had DME, 120 eyes had RVO, 78 eyes had uveitis and 12 eyes had ME secondary to miscellaneous causes. Mean baseline IOP was 14.43±3.78 mmHg. The mean number of injections was 3.03; the median was 2 injections (1-23). After implant, 7.25% had IOP greater than 35 mmHg. IOP greater than 35 mmHg occurred in 7.69% (4/52), 10% (12/120), 1.28% (11/50) and 40% (4/10) of DME, RVO, uveitis and other ME eyes, respectively. 30.15% had IOP greater than 25 mmHg. 4.96% (13 eyes) developed severe OHT requiring glaucoma surgery; 5 eyes were in the RVO group, 8 eyes were in the uveitis group. There is evidence ($P<0.001$) of an association between pre-existing glaucoma or glaucoma suspect status (103 eyes) and a subsequent need for glaucoma surgery after dexamethasone intravitreal implant injection. Eyes developing IOP>25 mmHg received more injections than eyes that did not ($P=0.003$). The RVO subgroup has an association ($P=0.02$) with a rise in IOP of 10 mmHg or more from baseline.

CONCLUSION Secondary OHT induced by dexamethasone intravitreal implant can usually be controlled by medications. The incidence of OHT requiring glaucoma surgery is 4.96%, which is significantly higher than the rates reported in the literature. Patients should be advised of the possible need for glaucoma surgery before undergoing treatment with dexamethasone intravitreal implant.

TAKE HOME MESSAGE Dexamethasone intravitreal implant use may be associated with secondary ocular hypertension or even the need for glaucoma surgery, especially in patients with pre-existing glaucoma or glaucoma suspect status.

HUMAN RESEARCH This study involves human research.
IRB Approval Status: Approved by institutional review board

Late Phase Fluorscein Angiographic Findings Which Can Predict Capillary Dropout and Drug Treatment Which Can Lead to Capillary Preservation

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OBJECTIVE To show possible drug therapy to prevent capillary dropout.

PURPOSE To demonstrate that indistinct capillary margins in the late phase fluorscein angiogram precedes capillary dropout in several retinal vascular diseases (FEVR) and drug therapy which increases the production of intra endothelial adhesive proteins can reverse these findings and preserve capillary integrity.

METHODS We will present both laboratory and patient data which shows that steroid and Norrin increase intra endothelial adhesive proteins Claudin 5 and VE Cadherin also data that suggests that Norrin maybe a more potent drug to increase these proteins Two patients with FEVR and indistinct capillaries and retinal edema by OCT one patient treated with topical steroid and NSAID and one treated with intravitreal steroid will be presented with visions decreasing both to 20/80.

RESULTS Tissue culture and OIR model eyes show potential effects of Norrin to act as a potent NSAID agent Both patients showed resolution of indistinct capillary margins reduction of the OCT thickening and visual acuity improvement to 20/20 and 20/40 on either topical medications or 2 injections over 9 months without any anti VEGF injections.

CONCLUSION Norrin may be a useful and potent NSAID to prevent capillary dropout and reduce retinal edema.

TAKE HOME MESSAGE there maybe drug therapy to prevent retinal capillary drop out.