

AMERICAN ACADEMY OF OPHTHALMOLOGY 2015 ANNUAL MEETING

The American Academy of Ophthalmology (AAO) 2015 Annual Meeting was held November 13-17 in Las Vegas, Nev. Retina Subspecialty Day included a number of important presentations featuring data that may shape the future of retina practice. As a service to our readers, we gathered information on a few of those talks. This list is not meant to be exhaustive; rather, it is meant to serve as a quick refresher and a jumping-off point for further reading.

—Karen Roman, Editor-in-Chief, Retina Today

Protocol S: Ranibizumab for PDR Was Noninferior to Laser at 2 Years

Treatment with ranibizumab (Lucentis, Genentech) was noninferior to panretinal photocoagulation (PRP) for the treatment of proliferative diabetic retinopathy (PDR) at 2 years, according to a presentation by Jeffrey Gross, MD.¹ The study was published in the *Journal of the American Medical Association* moments before his presentation.²

Investigators in the Diabetic Retinopathy Clinical Research Network (DRCR.net) Protocol S trial randomly assigned 394 eyes with PDR to treatment with PRP or ranibizumab 0.5 mg. PRP was completed in one to three visits, and ranibizumab injection occurred at baseline and as frequently as every 4 weeks.

Eyes in the ranibizumab group showed a mean 2.8-letter improvement from baseline at 2 years; eyes in the PRP group showed a mean 0.2-letter improvement ($P < .001$ for noninferiority). PRP treatment was associated with a significantly greater mean peripheral visual field sensitivity loss, a significantly higher rate of vitrectomy, and significantly more frequent development of diabetic macular edema (DME) at 2 years.

In the corresponding article in the *Journal of the American Medical Association*, the study authors wrote that “although longer-term follow-up is needed, ranibizumab may be a reasonable treatment alternative [to PRP], at least through 2 years, for patients with PDR.”

1. Gross JG. DRCRnet Protocol S. Paper presented at: American Academy of Ophthalmology 2015 Annual Meeting, Retina Subspecialty Day; November 13-14, 2015; Las Vegas, NV.

2. Writing Committee for the Diabetic Retinopathy Clinical Research Network. Panretinal photocoagulation vs intravitreal ranibizumab for proliferative diabetic retinopathy: a randomized clinical trial. *JAMA*. 2015;314(20):2137-2146.



Jeffrey Gross, MD, sits down with Eyetube Daily Coverage to discuss his AAO presentation on Protocol S.



bit.ly/AAOProtocolS

FAME Study: Low-Dose Steroid Treatment Prevented Some Progression to PDR

Use of the fluocinolone acetonide intravitreal implant 0.19 mg (Iluvien, Alimera Sciences) resulted in significantly fewer patients with DME advancing to PDR at 36 months compared with sham treatment, according to a presentation by Charles C. Wykoff, MD.¹

Patients in the FAME trial, a pair of 3-year phase 3 clinical trials, received continuous low-dose fluocinolone acetonide therapy (0.2 mg) for treatment of DME or sham treatment. At month 36, 17% of patients in the treatment arm progressed to PDR, compared with 31% in the sham arm ($P < .001$). Researchers determined progression to PDR based

on fundus photographs that were graded by a masked, certified reading center and by the incidence of the use of PRP or vitrectomy to treat PDR.

1. Wykoff CC. Analysis of diabetic retinopathy progression in patients treated with 0.2 micrograms/day fluocinolone acetonide over 36 months. Paper presented at: American Academy of Ophthalmology 2015 Annual Meeting, Retina Subspecialty Day; November 13-14, 2015; Las Vegas, NV.

Post-Hoc Analysis: Long-Term Response to Anti-VEGF for DME Predictable After Three Injections

The long-term response of patients receiving anti-VEGF injections for DME can be assessed after three injections, according to an analysis presented by Pravin Dugel, MD.¹

Dr. Dugel reviewed data from the DRCR.net Protocol I study, assessing 854 eyes with DME that received anti-VEGF injections. Patients were placed in three cohorts based on the number of letters gained on the ETDRS visual acuity chart at week 12. The cohorts were defined as those who gained less than 5 letters, gained between 5 and 9 letters, and gained at least 10 letters. Researchers compared patients' 12-week statistics with their statistics at 3 years.

At week 12, the unadjusted differences in mean BCVA change from baseline in the three groups were -0.3, 6.9, and 15.2 letters, respectively. At year 3, the unadjusted differences in mean BCVA change in those groups were 3.0, 8.2, and 13.8, respectively. After multivariate adjustment, significant correlation remained between BCVA gain at week 12 and at years 1 and 3 ($P < .001$).

1. Dugel PU. Long-term response to anti-VEGF therapy for diabetic macular edema can be predicted after 3 injections: an analysis of Protocol I data. Paper presented at: American Academy of Ophthalmology 2015 Annual Meeting, Retina Subspecialty Day; November 13-14, 2015; Las Vegas, NV.

Gene Therapy for Congenital Amaurosis Helped Improve Vision

Gene therapy for the treatment of congenital amaurosis, a disease caused by mutation of the RPE65 gene, resulted in improved vision at 1 year, according to a presentation by Albert M. Maguire, MD.¹

Patients in a multicenter phase 3 trial were randomly assigned to intervention or control group. Those in the intervention group received gene therapy with SPK-RPE65 (Spark Therapeutics) in both eyes.

More than one-third of patients (seven of 20) in the treatment group experienced a 15-letter gain at 1 year in the first treated eye, compared with no patients in the control group. One-fifth of patients (four of 20) in the treatment group experienced a 15-letter improvement at 1 year in the second treated eye, compared with none in the control group.

According to the visual acuity data presented at the

AAO meeting, the phase 3 trial met its primary endpoint (bilateral mobility testing from baseline to 1 year) and three secondary endpoints (visual acuity improvement, full-field light sensitivity threshold testing, and mobility testing for the first treated eye, all measured at 1 year).

1. Maguire AM. Phase 3 trial of AAV2-hRPE65v2 (SPK-RPE65) to treat RPE65 mutation-associated inherited retinal dystrophies. Paper presented at: American Academy of Ophthalmology 2015 Annual Meeting, Retina Subspecialty Day; November 13-14, 2015; Las Vegas, NV.

OHR-102 Plus Ranibizumab Treatment Improved Visual Acuity in Wet AMD Patients

Patients with wet age-related macular degeneration (AMD) and small occult choroidal neovascularization (CNV) lesions had improved visual acuity scores after combination therapy with OHR-102 (Squalamine, Ohr) and ranibizumab, according to a presentation by David S. Boyer, MD.¹

Patients in the phase 2 IMPACT study were randomized to ranibizumab monotherapy or ranibizumab plus OHR-102. Forty percent of patients with occult CNV area of less than 10 mm² in the combination therapy arm showed 3-line gains, compared with 26% of patients in the monotherapy arm. Patients in the combination therapy arm showed a mean 11-letter improvement, compared with a 5.7-letter improvement in the monotherapy arm. ■

1. Boyer DS. Squalamine eye drops in retinal vascular diseases. Paper presented at: American Academy of Ophthalmology 2015 Annual Meeting, Retina Subspecialty Day; November 13-14, 2015; Las Vegas, NV.