

9:30 AM

Persistent Macular Thickening After Ranibizumab Treatment for Diabetic Macular Edema With Vision Impairment

- Lee Jampol, MD

OBJECTIVE To assess subsequent visual and anatomic outcomes of eyes with central-involved diabetic macular edema (DME) persisting for 24 weeks after initiating treatment with 0.5 mg of ranibizumab.

PURPOSE Clinically relevant information regarding the prevalence of persistent diabetic macular edema (DME) after months of anti-vascular endothelial growth factor therapy and its effects on visual acuity can be of value in the management of diabetic macular edema (DME), prompting this post-hoc secondary analysis of data from the DRCR Network's Protocol I randomized clinical trial.

METHODS In an exploratory analysis, among 296 eyes from 296 participants randomly assigned to receive ranibizumab with prompt or deferred focal/grid laser, 117 eyes (40%) had DME persisting (central subfield thickness never falling below 250 μ m on time-domain optical coherence tomography) for 24 weeks after monthly 0.5-mg intravitreal ranibizumab with prompt or deferred focal/grid laser. Baseline best-corrected electronic ETDRS letter scores ranged from 78 through 24 (approximate Snellen equivalent 20/32 to 20/320). Visual acuity and central subfield thickness data on optical coherence tomography (OCT) were collected prospectively.

RESULTS Outcomes were similar regardless of whether focal/grid laser was given promptly or deferred; therefore, data from these groups were combined. The probability of chronic persistent DME among eyes with persistent DME at the 24-week visit decreased from 100% at the 32-week visit to 81% (99% CI, 70%-89%), 56% (99% CI,

43%-67%), and 40% (99% CI, 27%-53%) at the 1-, 2-, and 3-year visits, respectively, with resolution defined as central subfield thickness less than 250 μ m and a 10% or greater reduction relative to the 24-week study visit on two consecutive visits. Baseline central subfield thickness and macular volume were greater in the eyes with persistent DME. At 3 years, visual acuity improved in eyes with and without chronic persistent DME by a mean of 7 letters and 13 letters from baseline, respectively. Among 40 eyes with chronic persistent edema through 3 years, 43% (99% CI, 23%-64%) gained 10 or more from baseline, whereas 13% (99% CI, 3%-32%) lost 10 letters or more from baseline

CONCLUSION These data suggest less than half of eyes treated for DME with ranibizumab have persistent DME through 24 weeks. Among the 40% that have chronic persistent DME through 3 years, long-term visual acuity outcomes appear slightly worse than in the 60% in which DME does not persist. Nevertheless, long-term improvement in visual acuity from baseline is typical, even when DME chronically persists

TAKE HOME MESSAGE DRCCR.net protocol I retreatment and visit regimen should be considered by treating ophthalmologist while other studies for alternatives to treat chronic persistent DME are pursued.

HUMAN RESEARCH This study involves human research.

IRB Approval Status: Approved by institutional review board

9:38 AM

Persistent Macular Thickening Following Intravitreal Aflibercept, Bevacizumab, or Ranibizumab for Center-Involving DME With Vision Impairment



- John A. Wells, MD, FACS

OBJECTIVE Assess visual and anatomic outcomes of diabetic macular edema (DME) persisting for 24 weeks after 2.0-mg aflibercept, repackaged 1.25-mg bevacizumab, or 0.3-mg ranibizumab.

PURPOSE Identify the percentages of eyes with persistent DME 6 months after initial treatment with aflibercept, bevacizumab, or ranibizumab and the number of eyes with chronic persistent DME through 2 years. Evaluate differences in visual acuity and OCT central subfield thickness outcomes among eyes with and without persistent DME.

METHODS A post hoc, exploratory analysis of a randomized clinical trial from the subset of the 660 eyes with center involving DME and impaired visual acuity, randomly assigned to receive aflibercept, bevacizumab, or ranibizumab. The subset of eyes included in this persistent DME analysis received at least 4 of the maximum 6 monthly injections prior to 24 weeks, missed no more than 2 visits between the 28-week and 1-year visits, and did not receive alternative treatment prior to 1 year was

performed. Vision and CST data were collected prospectively. Persistent DME was defined as central subfield thickness ≥ 250 μm at every study visit through 24 weeks.

RESULTS Results will be available for presentation at the ASRS meeting.

CONCLUSION Conclusions will be available for presentation at the ASRS meeting

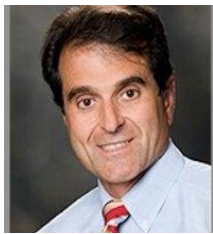
TAKE HOME MESSAGE This study analyzes the treatment course, and visual and anatomic outcomes, of eyes with persistent DME despite 6 months of treatment with either aflibercept, bevacizumab, or ranibizumab.

HUMAN RESEARCH This study involves human research.

IRB Approval Status: Approved by institutional review board

9:46 AM

"Real-World" Outcomes for Anti-VEGF Therapy of Diabetic Macular Edema in the United States



- Thomas A. Ciulla, MD, MBA
- David F. Williams, MD, MBA

OBJECTIVE To assess "real world" visual acuity outcomes of anti-VEGF therapy for diabetic macular edema in a demographically diverse sample of U.S. retina specialists' electronic medical records.

PURPOSE "Real world" treatment outcomes can vary meaningfully from outcomes noted in randomized clinical trials (RCTs). This study assessed "real world" visual acuity (VA) outcomes of anti-VEGF therapy for diabetic macular edema (DME) in a demographically diverse sample of U.S. retina specialists' electronic medical records (EMR).

METHODS Analysis was performed on a large database of aggregated, longitudinal EMR from a demographically diverse sample of U.S. retina specialists (Vestrum Health Retina Database). DME patients who underwent at least 3 monthly anti-VEGF injections between January 2011 and April 2016 were eligible if follow up data was available up to October 2016. The eyes were divided into 3 groups based on choice of initial intravitreal anti-VEGF agent. These eyes were then subdivided into three cohorts, depending on length of follow-up (6-, 12-, 24-months), with each cohort being mutually exclusive. VA outcomes were assessed on each cohort and also stratified by baseline VA.

RESULTS 5872 patients were included in this analysis. In the 12-month cohort, for the 1262 patients who initially underwent treatment with bevacizumab, the mean 12-month improvement was 6.0 letters after an average of 8.6 injections, compared to ranibizumab (609 patients, 6.1 letters, 8.41 injections), and aflibercept (444 patients, 7.4 letters, 8.4 injections). The mean number of macular and pan-retinal laser treatment sessions was similar in each group. In the 12-month cohort, when stratified by baseline VA of 20/201 or worse, 20/71-20/200, 20/41-20/70, and 20/40 or better, the final mean change in number of letters gained or lost in the bevacizumab group was +37.3, +8.7, +3.0, and -2.3 letters respectively, in the ranibizumab group was +31.3, +10.2, +4.5, and -1.9 letters respectively, and in the aflibercept group was +36.6, +11.3, +4.3, -2.0 respectively. With respect to the effect of treatment duration on visual acuity outcomes, there were no meaningful trends.

CONCLUSION "Real World" VA outcomes following anti-VEGF therapy for DME were meaningfully inferior to those noted in RCTs. Eyes with better baseline VA experienced worse visual outcomes compared to those with worse baseline VA. There was no meaningful difference in outcomes based on choice of initial anti-VEGF agent. Duration of treatment did not correlate with visual outcomes.

TAKE HOME MESSAGE Visual outcomes following anti-VEGF therapy for DME in the "real world" do not achieve those seen in randomized clinical trials. Eyes with better baseline VA are disproportionately affected.

HUMAN RESEARCH This study involves human research.

IRB Approval Status: Exempt from approval