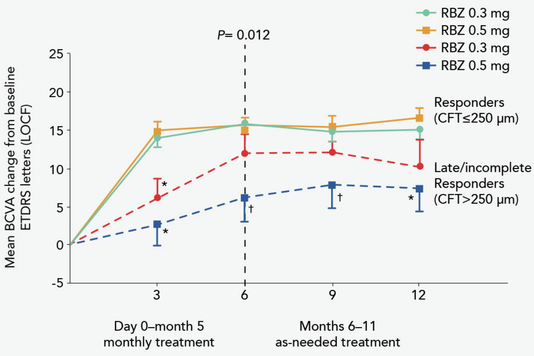
Predictive value in retinal vein occlusions of early versus late or incomplete ranibizumab response defined by optical coherence tomography

Bhisitkul RB, Campochiaro PA, Shapiro H, et al. *Ophthalmology.* 2013;120:1057–1063.
doi: http://dx.doi.org/10.1016/j.ophtha.2012.11.011

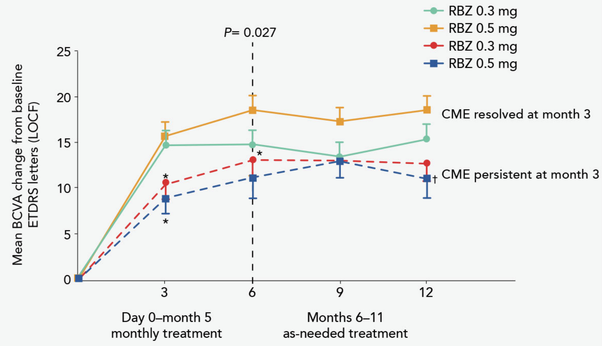
The objective of this study was to determine if optical coherence tomography (OCT) at baseline or month 3 in the Treatment of Macular Edema following Branch Retinal Vein Occlusion (BRVO): Evaluation of Efficacy and Safety (BRAVO) and Treatment of Macular Edema following Central Retinal Vein Occlusion (CRVO): Evaluation of Efficacy and Safety (CRUISE) studies provide information that predict visual outcome. The study design was a post hoc analysis from 2 prospective, randomized, controlled clinical trials.

Late or incomplete ranibizumab responders with CRVO (central foveal thickness (CFT) >250 µm at month 3) did not fare as well as early responders (CFT ≤250 µm) if they were treated with 0.3 mg ranibizumab



Each point represents the mean (standard error of the mean) change from baseline in BCVA at the designated time points.
*P< .01 and †P< .05 for difference from corresponding responder group by 2-sample t test.
BCVA = best-corrected visual acuity, ETDRS = Early Treatment Diabetic Retinopathy Study, LOCF = last observation carried forward

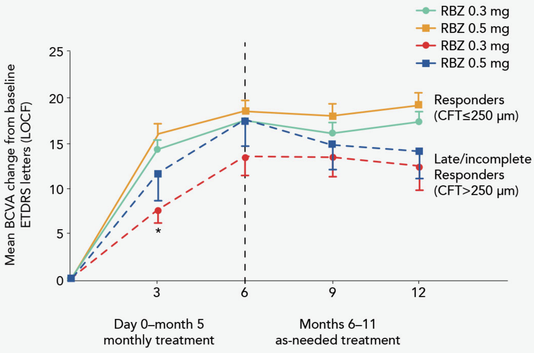
At month 6, compared with ranibizumab-treated CRVO patients with resolved cystoid macular edema (CME) at month 3, those with persistent CME did worse, on average, and significantly so for the 0.5 mg dose



At baseline, subretinal fluid (SRF) was present in 57% of patients with CRVO and in 45% of patients with BRVO

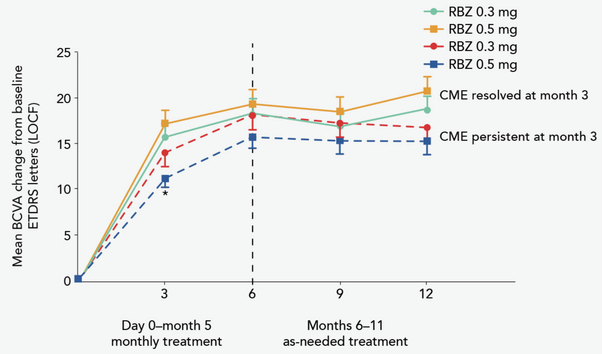
Each point represents the mean (standard error of the mean) change from baseline in best-corrected visual acuity (BCVA) in patients with resolved or persistent CME at month 3 in the 2 ranibizumab (RBZ) treatment groups at the indicated time points. *P< .05 and †P< .01 for difference from corresponding responder group by 2-sample t test.
BCVA = best-corrected visual acuity

Ranibizumab-treated patients who were late or incomplete responders demonstrated a trend toward lower gains in ETDRS scores, but this was not statistically significant with the exception of the 0.3 mg dose at month 3



Each point represents the mean (standard error of the mean) change from baseline in best-corrected visual acuity (BCVA) in early and late or incomplete ranibizumab (RBZ) responders. Early responders are patients with CFT of 250 µm or less at month 3, and late or incomplete responders are patients with CFT of more than 250 µm at month 3. *P= .0010 for difference from corresponding responder group by 2-sample t test.

The presence of residual CME at month 3 had no statistically significant effect on visual outcomes among the ranibizumab-treated BRVO patients at months 6, 9, and 12



Each point represents the mean (standard error of the mean) change from baseline in best-corrected visual acuity (BCVA) in patients with resolved or persistent CME in the 2 ranibizumab treatment groups of the Treatment of Macular Edema following Central Retinal Vein Occlusion: Evaluation of Efficacy and Safety study at the indicated time points. *P= .011 for difference from corresponding responder group by 2-sample t test.

Conclusions

At month 3 of ranibizumab treatment, OCT images provide predictive information for patients with CRVO, but not for those with BRVO. Visual outcome at months 6 and 12 was reduced in 0.5 mg ranibizumab-treated patients with CRVO who had persistent CME at month 3.