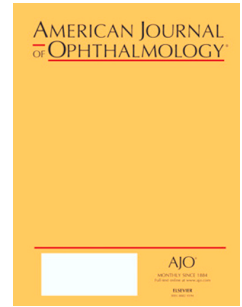


Accepted Manuscript

Disorganization of the Retinal Inner Layers as a Predictor of Visual Acuity in Eyes with Macular Edema Secondary to Vein Occlusion

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PII: S0002-9394(17)30339-2

DOI: [10.1016/j.ajo.2017.08.005](https://doi.org/10.1016/j.ajo.2017.08.005)

Reference: AJOPHT 10230

To appear in: *American Journal of Ophthalmology*

Received Date: 28 April 2017

Revised Date: 4 August 2017

Accepted Date: 5 August 2017

Please cite this article as: Mimouni M, Segev O, Dori D, Geffen N, Flores V, Segal O, Disorganization of the Retinal Inner Layers as a Predictor of Visual Acuity in Eyes with Macular Edema Secondary to Vein Occlusion, *American Journal of Ophthalmology* (2017), doi: 10.1016/j.ajo.2017.08.005.

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ABSTRACT

PURPOSE: To determine whether spectral domain–optical coherence tomography (SD-OCT) disorganization of the retinal inner layers (DRIL) is predictive of best-corrected visual acuity (BCVA) in retinal vein occlusion macular edema (RVO-ME).

DESIGN: Retrospective cohort study.

METHODS: Setting: two tertiary centers. Patients: treatment naive RVO-ME receiving monthly intravitreal bevacizumab. Observation procedures: spectral-domain optical coherence tomography (SD-OCT) images from baseline, 4-month, and 8-month visits. The DRIL extent and additional parameters were evaluated in the 1-mm-wide fovealcentered area. Main outcome measures: BCVA at each visit.

RESULTS: A total of 136 eyes (n=136) were included in this study. Greater DRIL extent at baseline correlated with worse baseline BCVA (point estimate, 0.04; 95%CI, 0.01-0.07 per 100 μ m, P=0.003). In multivariate analysis extent of DRIL (P=0.03) and ellipsoid zone disruption (P<0.001) correlated with baseline BCVA. Four month DRIL reduction was associated with 8-month BCVA improvement (point estimate, 0.02; 95%CI, 0.01-0.04, P=0.01) with only DRIL remaining significant in multivariate analysis (P=0.02). Baseline DRIL predicted 8-month improvement in BCVA (point estimate, 0.03, 95%CI 0.01-0.05, P=0.04) with only DRIL remaining significant in multivariate analysis (P=0.006). Eight-month DRIL change was associated with 8-month BCVA change (point estimate, 0.03, 95%CI 0.01-0.05, P=0.001) with only DRIL remaining significant in multivariate analysis (P=0.002).

CONCLUSIONS: The change of the DRIL extent following the first three monthly injections identifies eyes with a high likelihood of subsequent BCVA improvement or decline. Therefore, the extent of DRIL before and after treatment is an additional SD-OCT parameter that may serve as a biomarker for patients with RVO-ME.

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