Abstract 46

RETINAL THICKNESS DEVIATION: A NEW OCT PARAMETER FOR ASSESSING DIABETIC MACULAR EDEMA

Oral

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Purpose:

To determine associations between visual acuity (VA) and a new parameter, the retinal thickness deviation (RTD) from normative age-adapted retinal thickness data, in diabetic macular edema (DME) eyes treated with intravitreal anti-vascular endothelial growth factor (VEGF) or corticosteroid therapy.

Methods:

In this retrospective study, eighty-one patients (104 eyes) with center-involved DME undergoing intravitreal anti-VEGF or corticosteroid therapy with two years of follow-up imaging data were included.
Linear and nonlinear regression analyses with curve fitting estimation were performed to explore the relationship between VA and optical coherence tomography (OCT)-based parameters at 12 and 24-month follow-up visits. RTD was calculated as the absolute value of the difference between measured and normative retinal thickness values.

Results:

The VA had a statistically significant linear association with central subfield thickness (CST) at 12 months (R2=0.077 and p=0.004), while this association was not statistically significant at 24 months (R2=0.036 and p=0.053). Compared with linear models, the quadratic function provided the best fit between VA and CST at 24-months (R2=0.144 and p<0.001). Conversely, the linear function was the best fitting for VA and RTD both at 12 and 24-month follow-up visit (R2=0.158 and p<0.001, R2=0.212 and p<0.001, respectively).

Conclusions:

In DME eyes undergoing intravitreal treatment, deviation values from normative retinal thickness data better correlate with VA than CST, with a greater linear association. This suggest RTD as a good surrogate for VA, being able to interpret retinal thickness changes above but also below normal thickness values.