FOVEAL THICKNESS FLUCTUATIONS IN ANTI-VASCULAR ENDOTHELIAL GROWTH FACTOR TREATMENT FOR CENTRAL RETINAL VEIN OCCLUSION

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PURPOSE: We examined the effects of foveal thickness (FT) fluctuation (FTF) on visual and morphological outcomes of eyes with central retinal vein occlusion (CRVO) receiving long-term anti-vascular endothelial growth factor (VEGF) treatment based on a pro re nata regimen for recurrent macular edema (ME).

METHODS: We analyzed 141 treatment-naïve patients with CRVO-ME. We assessed FT using optical coherence tomography at each study visit. The patients were divided into Groups 0, 1, 2, and 3 according to the ascending order of FTF.

RESULTS: The mean baseline logarithm of the minimal angle of resolution (logMAR) best-corrected visual acuity (BCVA) and FT were 0.65 ± 0.52 and 661.1 ± 257.4 µm, respectively. The mean number of anti-VEGF injections administered was 5.6 ± 3.6. At the final examination, the mean logMAR BCVA and FT values were significantly improved relative to the baseline values (both p<0.01). FTF was significantly and positively associated with the logMAR BCVA and length of the foveal ellipsoid zone band defect at the final examination (p<0.01). The final logMAR BCVA of patients developing neovascular complications was 1.27 ± 0.72, which was significantly poorer than that of patients without complications (p=0.001). There was no significant difference in the neovascular complication rate among the FTF groups (p=0.106).

Conclusions: In eyes receiving anti-VEGF treatment for CRVO-ME, FTF can longitudinally impair the visual acuity and foveal photoreceptor status during the observation period, thus influencing the final outcomes. However, neovascular complications, which would also lead to a poor visual prognosis, may not be associated with FTF.