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Choroidal Changes after Suprachoroidal Injection of Triamcinolone in Eyes with Macular Edema Secondary to Retinal Vein Occlusion

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Purpose: To evaluate choroidal and suprachoroidal changes following suprachoroidal injection of triamcinolone acetonide injectable suspension (CLS-TA), in eyes with macular edema due to retinal vein occlusion (RVO).

Design: Prospective cohort study within a randomized, controlled phase 2 clinical trial.

Methods: Enhanced-depth imaging optical coherence tomography (EDI-OCT) images were analyzed from 38 eyes of 38 treatment naïve patients with macular edema due to RVO, enrolled in the prospective Suprachoroidal Injection of Triamcinolone Acetonide with Intravitreal Aflibercept in Subjects with Macular Edema Due to Retinal Vein Occlusion (TANZANITE) study who received either a suprachoroidal injection of CLS-TA with an intravitreal injection of aflibercept (combination arm) or only an intravitreal injection of aflibercept (monotherapy arm) followed by monthly intravitreal aflibercept injections in both arms based on pro re nata (PRN) criteria.

Results: Macular choroidal thickness measured to the outer choroidal vessel lumen (vascular choroidal thickness, VCT), outer choroid stroma (stromal choroidal thickness, SCT), or inner scleral border (total choroidal thickness, TCT) showed no significant changes over 3 months in both study arms (P = 0.231-0.342). Eyes that received combination therapy showed a trend toward thickening of the suprachoroidal space (SCS) compared with monotherapy alone (13.4 µm vs 5.3 µm at 3 months; P=0.077). In the 15 eyes that demonstrated a visible SCS at baseline, the SCS expanded significantly after suprachoroidal CLS-TA injection (16.2 µm to 27.8 µm at 3 months; P=0.033).

Conclusions: Suprachoroidal injection of CLS-TA does not alter choroidal thickness in eyes with macular edema due to RVO, but may result in expansion of the SCS.