

ASSESSMENT OF STRUCTURE FUNCTION CORRELATION IN UVEITIC CYSTOID MACULAR OEDEMA AND TREATMENT RESPONSE USING NON-INVASIVE OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY

Purpose: To investigate whether the area of foveal avascular zone (FAZ), vessel density (VD) in the superficial capillary plexus (SCP) and deep capillary plexus (DCP), extent of disorganization of retinal inner layers (DRIL) and size of the intraretinal cyst (IRC) on en face imaging using optical coherence tomography angiography (OCTA) correlates with corrected visual acuity (VA) in eyes with non-infectious CME.

Methods: Cross-sectional study of 32 eyes of 26 patients (13 female) with CME (central subfield thickness $>320\mu\text{m}$) who underwent treatment with either periocular triamcinolone (40mg/0.1mL), intra-vitreous triamcinolone 4mg or 0.7mg Ozurdex. Baseline and follow up B scan and en face OCT images, and 3x3 mm OCTA images (Zeiss Angioplex) centered on the fovea were analyzed.

Results: Mean baseline VA (ETDRS letters) was

38.1 and at last post treatment follow up was 37.9 ($p=0.8$). Baseline VA (ETDRS letters) positively correlated with the VD in the SCP ($r=0.61$, $p=0.09$) and DCP ($r=0.65$, $p=0.08$). There was a negative correlation of FAZ area in the SCP ($r=-0.53$, $p=0.04$) and DCP ($r=-0.42$, $p=0.2$) with VA. Extent of DRIL in the central $1000\mu\text{m}$ foveal area ($r=-0.54$, $p=0.05$) and IRC area on en face OCT ($r=-0.62$, $p=0.05$) at baseline correlated negatively with vision. Following treatment, there was a 52.9% reduction in DRIL at final follow-up.

Conclusion: Using OCTA, VD and FAZ in the SCP and DCP correlated with VA. DRIL and IRC size negatively correlated with VA indicating that these vascular and structural changes on OCTA could potentially serve as a non-invasive surrogate biomarkers for VA.