TITLE: Visualizing Relative Blood Flow Speeds in Choroidal Neovascularization Using Variable Interscan Time Analysis (VISTA-) Optical Coherence Tomography Angiography (OCTA)

ABSTRACT BODY:
Purpose: Recent advances in optical coherence tomography angiography (OCTA) provide insight into the natural history of choroidal neovascularization (CNV) secondary to neovascular age related macular degeneration (nAMD). Visualizing relative blood flow speeds longitudinally within CNV may provide valuable additional information regarding the evolution of CNV and their response to vascular endothelial growth factor (VEGF) inhibitors.

Methods: OCTA imaging of patients with nAMD was performed using a 400kHz, 1050nm swept source OCT system with a 5 repeated B-scan protocol. Variable interscan time analysis (VISTA) was used to compute relative flow speeds from pairs of B-scans having 1.5 ms and 3.0 ms separations, which were then mapped to a color space for display.

Results: Seven eyes of 6 subjects (4 women and 2 men) with nAMD were evaluated. Prior to initial imaging, 6 of 7 eyes received anti-VEGF injections, while 1 eye was treatment naïve (Figure 1). CNV in all eyes at each visit showed
relatively higher flow speed in the trunk vessels and lower flow speed at the periphery. Changes in the extent and
distribution of high and low speed vessels was observed as anti-VEGF treatment continued, with some low speed
vessels near the central trunk becoming larger in diameter and acquiring high flow speed characteristics.

**Conclusions:** Longitudinal follow-up of CNV secondary to nAMD demonstrated increased flow speed in the main trunk
vessels and decreased flow speed in the smaller vessels, generally at the periphery of the lesion. Changes in flow
characteristics were observed after anti-VEGF treatment. Visualization of relative blood flow speeds with VISTA-
OCTA in CNV may be useful for developing quantitative clinical endpoints.
A) OCTA-VISTA of treatment naïve CNV. B) OCTA-VISTA 1 month after first treatment with anti-VEGF. Note faster flow in central trunk vessels (white arrowheads) and slower flow in the periphery (pink asterisks). In VISTA-OCTA images, blue corresponds to slower blood flow and red to faster blood flow.
DETAILS

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Other Registry Site (Abstract): (none)
Registration Number (Abstract): (none)
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TRAVEL GRANTS and AWARDS APPLICATIONS

AWARDS: ARVO and ARVO Foundation Travel Grants|ARVO Members-in-Training Outstanding Poster Award

AFFIRMATIONS

Affirmations: Affirmation that submission of this abstract has been approved by the Principal Investigator.
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