Uveitic Macular Edema: OCT Anatomic and Temporal Biomarkers

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Purpose
❖ To evaluate correlations between best corrected visual acuity (BCVA) and central subfield OCT anatomic and temporal features in macular edema (ME) associated with noninfectious uveitis (NIU).

Methods
❖ This post-hoc analysis evaluated relationships between BCVA and the presence of cystoid spaces, presence of subretinal fluid (SRF), and ellipsoid zone (EZ) integrity, based on standard OCT reading center gradings, from two Phase 3, 24-week clinical trials (AZALEA and PEACHTREE) of CLS-TA (suprachoroidal triamcinolone acetonide suspension) for NIU-associated ME.
❖ Correlation analyses evaluating baseline and change from baseline relationships were conducted, from all 198 patients, except those with ungradable images or who dropped out.
❖ A longitudinal treatment-response analysis was created to model the temporal relationship between change in BCVA and CST in patients treated with CLS-TA.
❖ In CLS-TA patients, early CST anatomic response, defined as a reduction in CST of 50 μm or greater at 4 weeks, was assessed for relationship to BCVA prognosis.

Results

Patient Characteristics:
❖ Of the 198 patient eyes:
  ○ 134 received suprachoroidal CLS-TA, of which 13 (9.7%) received rescue.
  ○ 64 eyes received a sham procedure as a control, of which 46 (72%) received rescue.
  ❖ Mean age: 50.6 years, 57% female
  ❖ Mean baseline BCVA: 57.0 letters
  ❖ Mean baseline CST: 468μm

❖ Changes in BCVA and CST in eyes with ME showed less improvement at 24 weeks, compared to those eyes with center-involvement (5.5 vs 13.7 letters, P=0.012); likewise, eyes without central SRF at baseline showed less improvement at 24 weeks, compared to those eyes with center-involvement (8.9 vs 17.2 letters, P=0.001).
❖ Longitudinal modeling showed CST required approximately 3 weeks to reach over 90% of full response and BCVA required approximately 9 weeks to reach the same magnitude of response.
❖ Eyes that showed an early anatomical response experienced a greater 24-week improvement in BCVA.

Conclusions
❖ Important and clinically meaningful relationships exist between BCVA and OCT anatomic and temporal features in eyes with uveitic macular edema, with anatomic improvement preceding BCVA improvement.