Correlation of Best Corrected Visual Acuity and Central Subfield Thickness in Macular Edema Due to Retinal Vein Occlusion, Diabetic Retinopathy and Uveitis

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Financial Disclosures

• MI: Consultant: Clearside, Boehringer Ingelheim, Thrombogenics, Genentech, Astellas, Allergan, Novartis, Alimera, Regeneron, RegenexBio

• TC: Clearside Biomedical, Inc. (Employment, Personal Financial Interest)
Summary Slide

• Variable-frequency anti-vascular-growth (anti-VEGF) factor and corticosteroid treatment is often guided by OCT outcomes.

• Thus, it is important to understand the relationship between OCT outcomes and visual acuity.

• We conducted this analysis to examine the relationship between visual acuity and OCT across 6 clinical studies (certified visual acuity examiners and personnel) that included 3 different disease states.

• This analysis showed that there were moderate correlations between BCVA and CST in all diseases at baseline and for change at Week 24.

• These correlations provide context around the use of OCT outcomes in clinical decision making and in clinical trial results.
2015 PAT Survey

Over 90% of retina specialists, both in the U.S. and internationally, utilize OCT-guided variable frequency anti-vascular endothelial growth factor (VEGF) treatment protocols for nAMD.¹

Background

• In clinical practice, physicians often base treatment decisions on both BCVA and OCT assessment.

• Given the clinical importance of visual acuity and macular edema, this analysis demonstrates structure-function correlations.
Methods

- Relationships between BCVA and CST at baseline and changes from baseline at week 24 were analyzed.
- Data from 6 clinical trials across 3 disease states:
  - Standardized protocol refractions and OCT reading center evaluation.
- Correlations were calculated, univariate regressions were conducted to assess the analyses were performed for pooled data and separate disorders.
Across diseases and trials:
Moderate negative correlation between BCVA and CST

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<th>Baseline(^1)</th>
<th>At Week 24(^2)</th>
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<tr>
<td>Average improvement of 3.3 ETRDS letters for every 100µm reduction in CST</td>
<td>Average improvement of 3.5 ETRDS letters for every 100µm reduction in CST</td>
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<td>95% CI: 3.0 - 3.7 ETDRS letters, CST accounted for 30.1% of the total variation in BCVA, (r = -0.55, (P &lt; 0.001))</td>
<td>95% CI: 2.8 – 4.3 ETDRS letters, CST accounted for 16.2% of the total variation in BCVA, (r = -0.40, (P &lt; 0.001))</td>
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1. 1063 eyes from 1063 subjects
2. 721 subject eyes who completed 24 weeks of follow-up
Pooled By Disease: RVO
Moderate relationship between BCVA and CST

\[
PCC: -0.56 \ (-0.61, -0.51; p<0.001)
\]
Pooled By Disease: RVO
Moderate relationship between BCVA and CST

BCVA v. CST,
Change from Baseline at Week 24

PCC: -0.35 (-0.43, -0.27; p<0.001)
Pooled By Disease: DME
Moderate relationship between BCVA and CST

PCC: **-0.50** (-0.64, -0.33; p<0.001)
Pooled By Disease: DME
Moderate relationship between BCVA and CST

BCVA v. CST, Change from Baseline at Week 24

PCC: -0.30 (-0.48, -0.09; p=0.006)
Pooled By Disease: NIU
Moderate relationship between BCVA and CST

PCC: -0.38 (-0.49, -0.26; p<0.001)
Pooled By Disease: NIU
Moderate relationship between BCVA and CST

BCVA v. CST,
Change from Baseline at Week 24

PCC: -0.42 (-0.53, -0.29; p<0.001)
Conclusion

• The relationship between OCT outcomes and visual acuity is important.

• We conducted this analysis to examine the relationship between visual acuity and OCT across 6 clinical studies (certified visual acuity examiners and personnel) that included 3 different disease states.

• This analysis showed that there were moderate correlations between BCVA and CST in all diseases at baseline and for change at Week 24.

• These correlations provide context around the use of OCT outcomes in clinical decision making and in clinical trial results.