Comparative Study of Visual Acuity, Spectacle Independence and Patient Satisfaction with Aspheric Diffractive Multifocal IOL and Blended Aspheric Hinged Accommodating IOL

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Financial Disclosure

(*stock options)

Abbott Medical Optics, Inc.
Advanced Vision Science, Inc.
Bausch & Lomb Surgical, Inc.
Carl Zeiss Surgical, Inc.
Celgene, Inc.
GE Healthcare
Haag-Streit USA
Ista Pharmaceuticals
LensAR, Inc.*
Rayner Intraocular Lenses, Ltd.
Surgiview LLC*
Transcend Medical, Inc.*
TrueVision Systems, Inc.*
WaveTec Vision Systems*

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Relevant Financial Disclosure
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Purpose

• To evaluate the visual function, use of spectacle correction and patient satisfaction with bilateral implantation of an aspheric diffractive multifocal lens versus bilateral implantation of an accommodative intraocular lens.
Methods

• 50 sequentially implanted subjects (25 with bilateral Tecnis Multifocal IOLs and 25 with bilateral crystallens HD IOLs) completed a questionnaire about their visual function
• Use of spectacle correction and vision-related quality of life (Modified Cataract Type Specification as Validated for Multifocal Intraocular Lens Outcomes Assessment)
• Manifest refraction
• Uncorrected and best distance-corrected photopic visual acuity testing at distance, intermediate and near
• Dark adaptation
• Uncorrected and best distance-corrected mesopic visual acuity testing at distance, intermediate and near
• Photopic and mesopic pupillometry.
Patient Demographics

• In this interim analysis of 20 patients, mean age was 65.2 years (range: 50-81)
• 60% of patients were female
• 100% were Caucasian
• Mean post-op SE was -0.07 and mean cylinder was 0.36
• No statistically significant between-group differences in any patient demographic
VA-Distance Photopic

Mean VA (LogMar)

-0.043  P=.660  Crystalens

0.031

-0.058  P=.860  Tecnis

UCVA  BCVA
Near VA Photopic

- UCVA: P = 0.006
- DCVA: P < 0.001
Intermediate VA Photopic

Mean VA (LogMar)

- **UCVA**
  - Crystalens: 0.01
  - Tecnis: 0.107
  - P = 0.091

- **DCVA**
  - Crystalens: 0.08
  - Tecnis: 0.154
  - P = 0.169

Legend:
- Crystalens
- Tecnis
Distance VA Mesopic

- **UCVA**
  - Crystalens: 0.107
  - Tecnis: 0.118
  - P = 0.879

- **BCVA**
  - Crystalens: 0.027
  - Tecnis: 0.089
  - P = 0.177
Near VA Mesopic

<table>
<thead>
<tr>
<th></th>
<th>UCVA</th>
<th>DCVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalens</td>
<td>0.667</td>
<td>0.77</td>
</tr>
<tr>
<td>Tecnis</td>
<td>0.471</td>
<td>0.54</td>
</tr>
</tbody>
</table>

P values:
- UCVA: P = 0.066
- DCVA: P = 0.008
Intermediate VA Mesopic

UCVA
- Crystalens: 0.34
- Tecnis: 0.505
  - P = 0.050

DCVA
- Crystalens: 0.43
- Tecnis: 0.548
  - P = 0.029
Patient Satisfaction

% of patients reporting that each task was easy or very easy

<table>
<thead>
<tr>
<th>Task</th>
<th>Crystalens</th>
<th>Tecnis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading small print in dim light</td>
<td>0</td>
<td>62</td>
</tr>
<tr>
<td>Working on a computer</td>
<td>83</td>
<td>69</td>
</tr>
<tr>
<td>Seeing objects far away</td>
<td>84</td>
<td>92</td>
</tr>
</tbody>
</table>

P = .018
Rating Distance at Which it’s Comfortable to Read

<table>
<thead>
<tr>
<th>Distance</th>
<th>Crystalens</th>
<th>Tecnis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Much Too Far</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A Little Too Far</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Distance is Perfect</td>
<td>50</td>
<td>83</td>
</tr>
<tr>
<td>A Little Too Close</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Much Too Close</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

% of Patients
Other Patient Satisfaction Outcomes

• No significant difference at this point in:
  – Satisfaction with vision
  – Use of lenses or glasses
  – Convenience
  – Rates of recommendation to friends or family
    • 100% would recommend
Conclusion

• Under both photopic and mesopic conditions, Tecnis may provide better visual acuity at near, while under mesopic conditions Crystalens may provide better visual acuity at intermediate.

• Both lenses provided a high degree of patient satisfaction.

• Complete data set to be presented at a later date.