CONTRAST SENSITIVITY WITH BILATERAL BIOANALOGIC POLYFOCAL INTRAOCULAR LENS WIOL-CF: COMPARISON WITH RESTOR ASPHERIC +3.0 IOL

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DISCLOSURE OF THE CONFLICT OF INTEREST

In relation to this presentation, I declare the following, real or perceived conflicts of interest:

Kopriva J. is Medical Director of Medicem International company
PURPOSE

To evaluate the visual functions after bilateral implantation of a bioanalogic, polyfocal, accommodative intraocular lens WIOL-CF versus diffractive aspheric ReStor +3.0 intraocular lens.
WIOL-CF (Medicem)

- Bioanalogic intraocular lens
- Polyfocal hyperbolic optics
- Material: WIGEL® biocompatible hydrogel

ReStor aspheric IOL + 3.0D (Alcon)

- Diffractive aspheric multifocal IOL
- Material: Hydrophobic acrylate
- UV, Blue light filter IOL
**MATERIAL AND METHODS**

Comparative, non randomized study, 2 groups of patients
Follow-up time: 6 months

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bilateral implantation of WIOL-CF (Medicem)</td>
<td>• Bilateral implantation of ReSTOR aspheric +3.0D (Alcon)</td>
</tr>
<tr>
<td>• 56 eyes of 28 patients</td>
<td>• 40 eyes of 20 patients</td>
</tr>
<tr>
<td>• 13 men, 15 women</td>
<td>• 8 men, 12 women</td>
</tr>
<tr>
<td>• Mean age: 63.2 years (48–79)</td>
<td>• Mean age: 59.5 years (47–64)</td>
</tr>
</tbody>
</table>
MATERIALS AND METHODS

Analysed parameters

- UCDVA
- UCNVA
- Subjective refraction

- Contrast sensitivity (CSV-1000 E, VectorVision)
  - Photopic condition: 85 cd/m²
  - Mesopic condition: 6 cd/m²
  - Spatial frequencies of 3, 6, 12 and 18 cycles per degree (cpd)
# RESULTS

## UCDVA BINOCULAR

<table>
<thead>
<tr>
<th>UCDVA binocular 6M (decimal)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A: WIOL-CF</td>
<td>0.98</td>
<td>0.08</td>
</tr>
<tr>
<td>Group B: ReSTOR asph +3.0</td>
<td>0.92</td>
<td>0.07</td>
</tr>
</tbody>
</table>

**Subjective refraction - far**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A: WIOL-CF</td>
<td>+0.02</td>
<td>0.37</td>
</tr>
<tr>
<td>Group B: ReSTOR asph +3.0</td>
<td>-0.18</td>
<td>0.41</td>
</tr>
</tbody>
</table>
# RESULTS

**UCNVA BINOCULAR**

<table>
<thead>
<tr>
<th>UCNVA binocular 6M (Jaeger)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A: WIOL-CF</td>
<td>J2.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Group B: ReSTOR asph +3.0</td>
<td>J1.5</td>
<td>0.45</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Subjective refraction - near</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A: WIOL-CF</td>
<td>+1.45</td>
<td>0.94</td>
</tr>
<tr>
<td>Group B: ReSTOR asph +3.0</td>
<td>+0.2</td>
<td>0.52</td>
</tr>
</tbody>
</table>
RESULTS

CONTRAST SENSITIVITY - PHOTOPIC

Contrast Sensitivity Values in Log Units

- WIOL-CF 6M photopic
- ReSTOR 6M photopic
- Older Age Group: 50 - 75 photopic
- Younger Age Group: 20 - 55 photopic

Row A (3 cpd) Row B (6 cpd) Row C (12 cpd) Row D (18 cpd)

RESULTS
CONTRAST SENSITIVITY - MESOPIC

Contrast Sensitivity Values in Log Units

- WIOL-CF 6M mesopic
- ReSTOR 6M mesopic
- Younger Age Group: 20 - 55 mesopic

CONCLUSION

Both groups of these two presbyopia correcting IOLs provided excellent uncorrected distance VA.

The near VA was shown with both IOLs in social reading range, better in the ReSTOR group of patients.

The WIOL-CF IOL with its polyfocal and large optics design improved contrast sensitivity mainly in mesopic conditions which should be important for the vision used in real life.
Thank you for your attention