Visual outcomes after implantation of polyfocal, bioanalogic intraocular lens

Mach R.\textsuperscript{1}; Kopriva J.\textsuperscript{2}

\textsuperscript{1}Department of Ophthalmology, Hospital Most, Czech Republic
\textsuperscript{2}Medical department, Medicem International, Prague, Czech Republic

Co-author is employee of Medicem International
**Polyfocal hyperbolic optics:** refractive power is maximal in the center and continuously decreases without steps to periphery

**Polyfocality** = increased depth of focus

**Key WIOL-CF mode of action:**

Extended depth of focus (EDOF) achieved by non-diffractive optics approach (i.e. minimizing diffractive optics limitations like low contrast sensitivity, high optical phenomena rate/severity, etc.) combined with pseudo-accommodation driven by pupil constriction.
Methods

Study settings:

• Prospective, single center study

• Patients with WIOL-CF polyfocal, bioanalogic intraocular lens implanted binocularly or monocularly were invited to follow-up examinations

Patients:

• 15 eyes, 14 patients (9 male, 5 female)

• Mean age 71.1 (± 8.7) year, (53-86 year)

• Cataract as indication, no selection criteria

• WIOL-CF implanted binocularly 1 patients and 13 monocularly

• Implantation before 3 months
## Results

### VA monocular and refractive outcome at 3 month

<table>
<thead>
<tr>
<th>VA monocular</th>
<th>N</th>
<th>Mean (logMAR)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDVA</td>
<td>15</td>
<td>0.11</td>
<td>0.07</td>
</tr>
<tr>
<td>BCDVA</td>
<td>15</td>
<td>0.09</td>
<td>0.10</td>
</tr>
<tr>
<td>UNVA</td>
<td>15</td>
<td>0.19</td>
<td>0.23</td>
</tr>
<tr>
<td>BCNVA</td>
<td>15</td>
<td>0.16</td>
<td>0.22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spherical equivalent (D)</th>
<th>N</th>
<th>Mean (D)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE Distance</td>
<td>15</td>
<td>0.10</td>
<td>0.61</td>
</tr>
<tr>
<td>SE Near</td>
<td>15</td>
<td>0.63</td>
<td>1.48</td>
</tr>
</tbody>
</table>
Results

93% of patients express subjective satisfaction

- Very satisfied: 66%
- Satisfied: 27%
- Rather satisfied: 7%
- Rather dissatisfied: 0%
- Dissatisfied: 0%
- Very dissatisfied: 0%

93% of patients is spectacle independent

- Spectacle independent: 93%
- Spectacle dependent: 7%
Conclusions

• Implantation of polyfocal, bioanalogic, large optics IOL in patients with cataract was a simple, safe and accurate option.

• Extended depth of focus design and biocompatible material provides surgeons with a feasible option for meeting patient expectations of an enhanced lifestyle resulting from decreased spectacle dependence.