Cumulative Neodymium: YAG laser rates after large series of MICS IOL implantations

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Purpose

To study the cumulative Neodymium:YAG laser rate after 4377 implantations with 4 different hydrophilic Acrylic MICS lens during cataract surgery.
Methods

• **Retrospective study:**
  – 4377 implantations performed between 2006 and 2013
  – B-MICS without complication

• **4 Hydrophilic Acrylic MICS lenses:**
  – Akreos MICS (B&L)  491 IOL  100 Yag
  – CT Asphina (Zeiss)  870 IOL  71 Yag
  – MicroSlim (PhysIOL)  671 IOL  114 Yag
  – Micro AY (PhysIOL)  2345 IOL  98 Yag
Methods

- Enrolment and personal follow up decrease bias.
- ANOVA test for populations comparison.
- Kaplan-Meier survival analysis.
- Mann-Whitney test for data comparison.
**Akreos MICS**

- **26% Hydrophilic Acrylic**
- Optical zone 6.2 to 5.6mm
- Total diameter 10.5 to 11mm
- Square edge 360° 2 designs before and after end of 2010
- Posterior angulation 10°
- 0 D to +30 D with Medicel 1.8
- IolMaster 118.9

**CT ASPHINA**

- **25% Hydrophilic Acrylic “hydrophobic coating”**
- Optical zone 6.0mm
- Total diameter 11mm
- Square edge 360°
- Posterior angulation 0°
- 0 D to +32 D with Medicel 1.8
- IolMaster 117.9
MicroSlim
- 25% Hydrophilic Acrylic
- Optical zone 6.15mm
- Total diameter 10.75mm
- 360° square edge
- Posterior angulation 5°
- -10 D to +35 D
- IolMaster 118.9

Micro AY
- 25% Hydrophilic Acrylic
- Aspheric and blue filter
- Optical zone 6.15mm
- Total diameter 10.75mm
- 360° square edge
- Posterior angulation 5°
- -10 D to +35 D
- IolMaster 118.9
## Results

<table>
<thead>
<tr>
<th>3345 IOL</th>
<th>Akreos MICS</th>
<th>CT Asphina</th>
<th>MicroSlim</th>
<th>Micro AY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean Power</strong></td>
<td>21.96 D ± 2.72</td>
<td>20.66 D ± 2.61</td>
<td>21.38 D ± 2.82</td>
<td>20.76 D ± 4.17</td>
</tr>
<tr>
<td><strong>Mean Age</strong></td>
<td>73 years ± 8</td>
<td>78 years ± 7</td>
<td>80 years ± 8</td>
<td>77 years ± 9</td>
</tr>
</tbody>
</table>

**B-MICS:** TA or STA  
**Follow up:** 1 to 84 months
## Results

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<tr>
<td><strong>Survival rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>1 year</strong></td>
<td>92% IC 95% 92-92</td>
<td>97% IC 95% 97-97</td>
<td>96% IC 95% 95-97</td>
<td>96% IC 95% 95-97</td>
</tr>
<tr>
<td><strong>2 years</strong></td>
<td>59% IC 95% 49-71</td>
<td>83% IC 95% 83-83</td>
<td>87% IC 95% 86-88</td>
<td>89% IC 95% 88-90</td>
</tr>
</tbody>
</table>

*Mann-Whitney test not significant*
Results

Modification of the Akreos MICS optic edge
End of 2010
Results

Kaplan-Meier survival analysis
Conclusion

- No excessive PCO after MICS lens implantation.
- The cumulative ND:YAG laser rate after MICS are comparable between CT Asphina, MicroSlim and Micro AY.
- The Akreos MICS lens shows the highest PCO rate (NS) perhaps due to the first optic edge design and lack of haptic stiffness.
- The study must be continued in the future to determine if the improvement of design and material decrease the ND:YAG rate.
Thank you for your attention