

Session 4-B: Cataract: Specialty IOLs

Title: Light-Adjustable Lens: Clinical Trial Results

Presenter: Arturo S. Chayet, MD

Purpose: To determine whether a Light Adjustable Lens can undergo precise adjustment of spherical and astigmatic power post-operatively.

Method: Sixteen cataract patients were implanted with a foldable, silicone Light Adjustable Lens (LAL) after standard phacoemulsification. 7-14 days post-operatively, each patient's BCVA, auto-refraction, and contrast sensitivity was determined. Using a digital light delivery device (Carl Zeiss Meditec), adjustment of lens power was then performed to achieve a pre-determined spherical and/or astigmatic change. One day after adjustment BCVA, auto-refraction, and contrast sensitivity were determined.

Results: Adjustment of spherical refractive error was successfully achieved in eight consecutive patients from +1.5 D to -1.25D. All of the achieved power changes were within 0.25 D of the attempted values with the exception of one patient (within 0.5 D). Additional patients were successfully adjusted for post-operative astigmatic error. All patients maintained pre-adjustment BCVA and contrast sensitivity. No eyes showed any evidence of inflammation. The adjustment procedure was well tolerated by all patients without complications.

Conclusion: A Light Adjustable Lens has been implanted and precisely adjusted to correct spherical and astigmatic refractive error. The biocompatibility of the LAL lens in the human eye has been demonstrated with implant data up to 24 months.