Optical Purity of Hydrophobic Acrylic IOL Models

Tuesday, April 17, 2018
11:13 AM - 11:18 AM
Walter E. Washington Convention Center - Level 1, 144B

ASCRS Cataract

Purpose
To generate and compare glistening formation in two different hydrophobic acrylic intraocular lens (IOL) models

Methods
Two IOL models (Eyecryl Plus Natural HD ASHFY600 [BioTech Vision Care] and AcrySof IQ SN60WF [Alcon]) were compared. Glistenings were created in an experimental setup as aqueous-filled microvacuoles (MVs) in ten IOLs per model using an accelerated laboratory method. The IOLs were immersed in aqueous NaCl-solution (0.9%) at 45°C for 24 hours and then placed in a water bath with a temperature of 37°C for 2.5 hours to reduce the temperature. Images of the IOLs were taken with a camera attached to a microscope. The images were analyzed with an image analysis software (ImageJ) for the comparison of glistening formation

Results
The Eyecryl Plus Natural HD IOL demonstrated a very low level of glistening formation not only in the central area (0.74 ± 0.54 MVs/mm²) but also in five different peripheral areas of the IOL (0.52 ± 0.24 MVs/mm²). The amount of glistenings generated within this IOL correlates to the Miyata Scale zero. Therefore, this lens can be considered as glistening-free. In comparison, the AcrySof IQ IOL formed a larger amount of glistenings for both the central area (41.8 ± 27.7 MVs/mm²) and the peripheral areas (19.9 ± 10.6 MVs/mm²) of the optic and is therefore classified as grade one on the Miyata Scale

Conclusion
The new Eyecryl Plus Natural HD lens formed a very small amount of glistenings and can thus be perceived as a glistening-free lens

Authors

Patrick R. Merz, Dipl.-Ing. (FH), Dr. rer. nat.

Hui Fang, MD

Qiang Wang, MD

Sonja K. Schickhardt

Elfriede Friedmann, Dr. rer. nat.

Gerd U. Auffarth, MD, PhD

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