

## Abstract 50

### REFRACTIVE OUTCOME IN COMBINED PHACOVITRECTOMY: ANTERIOR SEGMENT OCT ASSESSMENT AND CORRECTIVE FACTOR FOR IOL POWER CALCULATION IMPROVEMENT

Oral

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#### Purpose:

To analyze differences in refractive outcome Delta (difference between postoperative and expected refractive error) and in anterior segment changes between cataract surgery patients and combined phacovitrectomy patients. We also aimed to provide a corrective formula allowing to minimize the refractive outcome Delta in combined surgery patients.

#### Methods:

Candidates for phacoemulsification and combined phacovitrectomy (respectively PHACO and COMBINED groups) were prospectively enrolled in two specialized centers. Patients underwent best corrected visual acuity (BCVA) assessment, ultra-high speed anterior segment optical coherence tomography (OCT), gonioscopy, retinal OCT, slit lamp examination and biometry at baseline, 6 weeks postoperatively and 3 months postoperatively.

#### Results:

No differences in refractive Delta, refractive error and anterior segment parameters were noted between PHACO and COMBINED group (109 and 110 patients respectively) at 6 weeks. At 3 months, COMBINED group showed a spherical equivalent of  $-0.29 \pm 0.10$  D versus  $-0.03 \pm 0.15$  D in PHACO group ( $p=0.023$ ). COMBINED group showed a significantly higher Crystalline Lens Rise (CLR), angle-to-angle (ATA) and anterior chamber width (ACW) and a significantly lower anterior chamber depth (ACD) and refractive Delta with all 4 considered formulas at 3 months. For IOL power lower than 15, a hyperopic shift was observed instead.

#### Conclusions:

Anterior segment OCT suggests anterior displacement of the effective lens position in patients undergoing phacovitrectomy. A corrective formula can be applied to IOL power calculation to minimize undesired refractive error.

