

ARVO 2012 Annual Meeting Abstracts

Examination by slit-lamp found seven patients (6% of the total) with distended capsular bags of different degrees. The distension was confirmed and measured using Scheimpflug photography.

Results: The IOL was in all cases an Acrysof® (MA60BM; Alcon Inc). Best corrected visual acuity (BCVA) was logMAR (0.32 (20/38) - -0.18 (20/17)). All 3 patients with a BCVA less than 20/24 had previously diagnosed age-related maculopathy. The difference between high contrast BCVA and low contrast visual acuity 10% was between normal limits (0.3 - 0.48 logMAR units) for all patients. The distance between the IOL and the posterior capsule was between 300 and 650µm. One patient died 6 months after the examination, and 3 patients had neodymium:YAG capsulotomy between 6 months to 2 years after the examination. More than 4 years after the examination 3 patients still had no need for capsulotomy.

Conclusions: This study suggests there is an asymptomatic time span in cases with late onset capsular bag distension syndrome. It is important to be aware of this syndrome when examining patients who had cataract surgery many years previously and no posterior capsulotomy. If there is a tendency for accumulation of fluid behind the intraocular lens some patients will need posterior capsulotomy within a few years, especially if the distance between the IOL and the posterior capsule is more than 500 µm.

Commercial Relationships: Eva Monestam, None

Support: Västerbottens County Council unrestricted grant

Program Number: 6630 **Poster Board Number:** A619

Presentation Time: 11:15 AM - 1:00 PM

Objective Discrimination Between Operable And Non-operable Cataracts

Clemente Paz Filgueira¹, Roberto F. Sanchez¹, Luis A. Issolio¹, Meritxell Vilaseca², Jaume Pujol², Elisa M. Colombo¹. ¹Departamento de Luminotecnia, ILAV, CONICET - UNT, San Miguel de Tucuman, Argentina; ²CD6-Optica i Optometria, Universitat Politècnica Catalana, Terrassa, Spain.

Purpose: To obtain a limit value in terms of the Objective Scatter Index (OSI), which is based on double-pass retinal images, in order to discriminate between operable and non-operable cataracts. To compare the obtained OSI values with subjective assessments made by a group of ophthalmologists in patients with different grades of cataracts.

Methods: Forty-five eyes from 24 patients (from 50 to 70 years old) with posterior subcapsular cataracts (PSC), nuclear cataracts (NC), and cortical cataracts (CC) were included in the study. They did not report any ocular alteration other than the cataract itself and their BSCVA was higher than 0.6. Cataracts were classified according to the LOCS III classification system which consists of the direct observation of the crystalline lens through the slit-lamp (Chylack et al. Arc Ophthalmol 1993). From this subjective analysis made by three different ophthalmologists it was established whether the cataract should be scheduled for surgery or not. Subjects were also analyzed by means of the double-pass instrument (OQAS, Visiometrics SL, Spain), which provides an objective assessment of the intraocular scattering by means of the OSI parameter (Artal et al. Plos 2011).

Results: Twenty-two of the eyes measured (49%) had a PSC cataract, 20 (44%) a NC, and 3 (7%) corresponded to CC. According to the subjective procedure 13 (29%) of the examined eyes showed a severity in their cataract grade that made it operable according to the ophthalmologist criteria. Mean OSI for non-operable cataracts was of 1.30 ± 0.9 (\pm SD) while for operable cataracts it was of 3.33 ± 1.62 . These values were significantly different ($p < 0.001$). We identified a critical OSI value of 1.80 separating both conditions from the intersection of weighted distributions, which could be used to split the early cataract group from the surgery susceptible group. That value corresponds to the early cataracts category previously established in the literature (Artal et al. Plos 2011).

Conclusions: We evaluated the feasibility of using the OSI to discriminate between operable and non-operable cataracts. Results showed that the OSI values obtained in operable cataracts (according to the medical criteria) are distinguishable from those obtained in cataracts that have not been considered for surgery. Therefore this objective parameter may help in taking an objective decision about the convenience of scheduling the cataract surgery.

Commercial Relationships: Clemente Paz Filgueira, None; Roberto F. Sanchez, None; Luis A. Issolio, None; Meritxell Vilaseca, None; Jaume Pujol, Visiometrics (I); Elisa M. Colombo, None

Support: CONICET Grant PIP 0308; ANPCyT Grant PICT 1920; CIUNT Grant 26/E410; Ministerio de Educación y Ciencia (Spain) Grant DPI2008-06455-C02-01; Ministerio de Asuntos Exteriores (Spain) Grant D/030286/10

Program Number: 6631 **Poster Board Number:** A620

Presentation Time: 11:15 AM - 1:00 PM

Subjective Outcomes Evaluation of Aspheric Diffractive and Apodized Diffractive Aspheric Multifocal IOLs

Dwayne K. Logan¹, Ehsan Sadri². ¹Cataract and Refractive Surgery, Atlantis Eyecare, Long Beach, CA; ²Cataract and Refractive Surgery, Atlantis Eyecare, Newport Beach, CA.

Purpose: To assess subjective outcomes in patients that have undergone cataract extraction and received two different presbyopia correcting IOLs: ZMA00/ZMB00 or SN6AD1 IOLs.

Methods: Single-center, open-label, retrospective/prospective comparison study on patients that have undergone cataract surgery and have been implanted with either an aspheric diffractive IOL (model ZMA00/ZMB00) (T) or an apodized diffractive aspheric IOL (model SN6AD1) (R). Quality of life questionnaires were obtained on all patients with at least 3 months post-cataract extraction.

Results: Fifty-one patients (T=33, R=18) were evaluated for this study. Mean age: (T: 74, R: 71). Percentage of patients satisfied or very satisfied with overall vision without correction (T: 90%, R: 93%). Percentage of patients not needing glasses after surgery: (T: 72%, R: 78%). Percentage of patients able to read easily: (T: 76%, R: 59%). Percentage of patients that will most likely have the same implant again: (T: 94%, R: 76%).

Conclusions: Both presbyopia-correcting IOLs showed good overall visual satisfaction without correction, with the aspheric diffractive multifocal lens patients being able to read more easily than the patients with the apodized diffractive aspheric multifocal lens. The aspheric diffractive multifocal patients also reported higher likelihood of having the same lens implanted again.

Commercial Relationships: Dwayne K. Logan, Abbott Medical Optics (C, R); Ehsan Sadri, Abbott Medical Optics (R)

Support: Unrestricted grant - Abbott Medical Optics

Program Number: 6632 **Poster Board Number:** A621

Presentation Time: 11:15 AM - 1:00 PM

Quantitative Evaluation Of The Effect Of Oral Propranolol And Sublingual Timolol On Hand Tremor And Its Effect On Surgical Performance. Using The EYESi Surgical Simulator

Claudia CASTILLO AYOMETZI, Alfonso Garcia Lopez, Alejandro Babayan Sosa, Alfredo R. Castillejos. Hospital Nuestra Señora de la Luz, Mexico, Mexico.

Purpose: To quantitatively evaluate and compare the effect of oral propranolol 10mg and sublingual timolol maleate 0.5% on hand tremor and its effect on surgical performance assessed while performing the anti-tremor level 3 training module of the EYESi surgical simulator (Mannheim, Germany, VRmagic)

Methods: A randomized, single masked study was performed at Hospital Nuestra Señora de la Luz, Mexico. 19 ophthalmology residents (PGY2 to 4) volunteered for the study. Residents were tested on 4 separate days. On each day subjects injected 10 mg of propranolol, 1 sublingual drop of timolol maleate 0.5%, placebo or 1 sublingual drop of sodium hyaluronate 30 minutes prior to performing the anti-tremor level 3 training modules. Scores were recorded with the standardized software of the simulator. Two variables were evaluate: average tremor and out of tolerance percentage. The means of both variables were calculated for the two groups. A T-test was used to compare each group against placebo.

Results: There was a significant effect of propranolol in reducing surgical tremor ($p=0.02$). Statistically significant difference was not observed with timolol ($p=0.9$). Comparing the two beta-adrenergic receptor blocking agents, propranolol achieved significantly better tremor scores ($p=0.004$). The out of tolerance percentage was also lower with propranolol however the difference was not statistically significant ($p=0.35$)

Conclusions: Oral propranolol taken 30 min before surgery may reduce hand tremor of the surgeon. Further investigation of this possible beneficial effect on surgical performance is warranted.

Commercial Relationships: Claudia Castillo ayometzi, None; Alfonso Garcia Lopez, None; Alejandro Babayan Sosa, None; Alfredo R. Castillejos, None

Support: None

Program Number: 6633 **Poster Board Number:** A622

Presentation Time: 11:15 AM - 1:00 PM

Postoperative Refractive Error After Simultaneous Vitrectomy and Phacoemulsification with Sulcus Fixation of Intraocular Lens

eok soo suh, seungwoo LEE, junwoo Chun. department of ophthalmology, Dongguk University Gyeongju Hospital, Gyeongju, Republic of Korea.

Purpose: To determine the appropriate correction of predicted intraocular lens (IOL) power for a simultaneous vitrectomy and cataract surgery with a sulcus fixation of IOL

Methods: We compared the spread between predicted and actual refraction in 18 eyes after simultaneous vitrectomy and phacoemulsification with a sulcus fixation of IOL (group 1), 40 eyes after simultaneous vitrectomy and phacoemulsification with posterior chamber IOL implantation (group 2), and in 85 eyes after cataract only (group 3). Axial lengths of all eyes were between 22mm and 25mm.

Results: The spread between predicted and actual refraction (actual - predicted) was -1.3 ± 0.73 diopters (D) in group 1, -0.50 ± 0.79 D in group 2 and 0.03 ± 0.57 D in group 3 (statically significant, $p = 0.00$). The actual refractive errors in the two combined surgery groups were found to shift toward myopia when compared with group 3. Among the combined surgery groups, group 1 showed a more myopic shift from the predicted in-the-bag refraction.

Conclusions: Significant postoperative refractive errors occurred in study subjects.