Purpose: To assess the frequency of negative waveform electroretinograms (ERGs) complaining night blindness in a tertiary referral center for Turkish Armed Forces.

Methods: Retrospective chart review of all patients who had an ERG performed for differential diagnosis of night blindness at the electrophysiology clinic at GATA Military Medical Academy, Ankara, Turkey, from January 2003 through December 2012, were included in the study. Patients with b-wave amplitude ≤ a-wave amplitude during the dark-adapted bright flash recording, in at least one eye, were identified as having a “negative ERG”. Clinical information, such as age, symptoms, best corrected visual acuity (BCVA), and diagnoses were recorded for the patients when available.

Results: A total of 2495 male patients underwent ERG testing during the last decade Age ranged from 15 to 40 years. All were man. BCVA ranged from 0.1 to 0.0. Of those, 102 patients had a negative ERG, for a frequency of 4%. Of those patients, the most common diagnoses associated with a negative ERG were congenital stationary night blindness (CSNB, n = 93) in 91.3%, X-linked retinoschisis (XLRs, n = 7), in 6.8%, high myopia (15 dpt) in 1%, and muscular dystrophies in 1%.

Conclusions: The overall frequency of negative ERGs in this retrospective review was 4%. CSNB appear to be the most likely diagnoses among male military personnel who had a negative ERG.

Commercial Relationships: Mustafa Eren, None; Gungor Sobaci, None; Yusuf Uysal, None; Erdem Uzeyir, None

Program Number: 1561 Poster Board Number: C0200
Presentation Time: 8:30 AM–10:15 AM
Surgical Complications and Visual Outcomes Following Cataract Surgery in Patients with Age-Related Macular Degeneration in the VA System
Xi Chen1, Giulia Cakiner-Egilmez2, Luis A. Gonzalez3, Amy Chomsky4, Elizabeth Baze5, David Vollman6, Mary G. Lawrence7, Mary K. Daly2, 3, 4, 7, 8, 9 Ophthalmology, VA Boston Healthcare System, Boston, MA; 7, 8, 9 Ophthalmology, Boston University School of Medicine, Boston, MA; 3, 7 Ophthalmology, Harvard Medical School - Massachusetts Eye and Ear Infirmary, Boston, MA; 3 Ophthalmology, VA Tennessee Valley Healthcare System Center, Nashville, TN; 5, 6 Vanderbilt Eye Institute, Vanderbilt University, Nashville, TN; 6 Ophthalmology, Michael E. DeBakey VA Medical Center, Houston, TX; 7 Cullen Eye Institute, Baylor College of Medicine, Houston, TX; 9 Ophthalmology, St Louis VA Medical Center, St Louis, MO; 9 Ophthalmology, Washington University School of Medicine, St Louis, MO; 8 Department of Defense, DoD/VA Vision Center of Excellence, Boston, MA.

Purpose: To compare the complication rates and visual outcomes of cataract surgery in veterans with age-related macular degeneration versus those without age-related macular degeneration (AMD).

Methods: This multicenter retrospective cohort analysis from the Ophthalmic Surgical Outcomes Data Project (OSOD) included 4891 of 4,923 cataract surgery cases from five VAMC sites. Data were collected according to OSOD definitions. Variables included in the analysis were ASA classification, age, gender, BMI, diabetes mellitus, hypertension, and glaucoma. Outcome variables were: BCVA, occurrence of minor complication, major complications and intraoperative events. Fisher’s exact, chi square, and McNemar’s tests were used for statistical analysis. A longitudinal data analysis using multivariate logistic regression for the main outcome, and multivariable logistic regression models for secondary outcomes were performed adjusting for potential confounders.

Results: Of 4891 eyes included, 394 (8.1%) had AMD. We compared this subset to those without AMD (91.9%, n=4497). Mean age was significantly higher in patients with AMD (77.5 ± 8.8 versus 69.96 ± 15.43 years).

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Five-Year Incidence of Clinically Significant Cataract in Urban Chinese Population

Elizabeth Baze

Guangzhou, China

Decai Wang, Mingguang He, Lanhua Wang, Qiuxia Yin, Wenyong Huang, Shengsong Huang,

Five-Year Incidence of Clinically Significant Cataract in Urban

program number: 1562

Presentation Time: 8:30 AM–10:15 AM

Program Number: 1562 Poster Board Number: C0201
Presentation Time: 8:30 AM–10:15 AM

Five-Year Incidence of Clinically Significant Cataract in Urban Southern China: The Liwan Eye Study
Lanhua Wang, Qiuxia Yin, Wenyong Huang, Shengsong Huang, Decai Wang, Mingguang He. Zhongshan Ophthalmic Center, Guangzhou, China.

Purpose: To determine five-year incidence of clinically significant cataract and its risk factors in an elderly urban Chinese population.

Methods: Participants underwent a comprehensive eye examination at baseline in 2003 and then five years later. Clinically significant cataract was defined as people with lens opacity and best-corrected visual acuity (BCVA) > 20/63 in both eyes at baseline in 2003 but decreased to <20/63 caused by cataract in either eyes at follow-up in 2009, or those with cataract surgery performed between baseline and 5-year follow up visits.

Results: Among 1405 baseline participants, 924 (75.0%) of 1232 survivors participated in the 5-year follow-up. The incidence of clinically significant cataract was 3.45% (17 cases) among the persons aged less than 65 years whereas this incidence increased to 23.9% (72 cases) among the participants > 65 years (p < 0.001), with an overall incidence of 11.2% (95% confidence interval [CI] 9.20% - 13.6%). In univariable analysis, incidence of cataract increased significantly with older age (P < 0.001), less BMI (p = 0.036) and less education (P < 0.001), but not associated with gender, income status, hypertension and diabetes. In multivariable logistic regression models, incidence of cataract was significantly associated with age (p < 0.001) and BMI (p = 0.038).

Conclusions: The incidence of clinically significant cataract is high in urban Chinese. These data may help the public health planner to estimate the demand of cataract surgery service in the community.

Commercial Relationships: Xi Chen, None; Tulay Cakiner-Egilmez, None; Luis A. Gonzalez, None; Amy Chomsky, None; Elizabeth Baze, None; David Vollman, None; Mary G. Lawrence, None; Mary K. Daly, None

Commercial Relationships:

Program Number: 1562 Poster Board Number: C0201
Presentation Time: 8:30 AM–10:15 AM

Decision Making in Cataract Surgery
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Purpose: To assess the relationship of patient-physician communication with patient perceptions of cataract surgery.

Methods: The DECISIONS study was a computer-assisted telephone interview survey assessing decision-making in 9 common medical decisions, including cataract surgery. A nationally representative sample of 3010 adults in households with telephones in the US completed interviews. Of these, 282 respondents either had or discussed cataract surgery with their health care provider (HCP) in the previous 2 years and were included in the present analysis. Univariate and multivariate analyses were performed to determine the relationships of four factors – patient-physician communication, decision-making, factual knowledge about cataract surgery, and sociodemographic information – with patient confidence in their decision and their perceived success of cataract surgery.

Results: 96% of respondents indicated they discussed reasons to have surgery with their HCP but only 44% indicated they discussed reasons not to have surgery. African-Americans and females were significantly less likely to have discussed the reasons not to have surgery than whites (p=.0004) and males (p=.005). While 45% of individuals felt very well informed prior to making the decision about surgery, there was no relationship between feeling informed and factual knowledge about cataract surgery. Knowledge scores also did not influence whether individuals felt confident in their decision about whether to have cataract surgery, but feeling informed was strongly associated with confidence (p < .0001). When asked to rate the success of their cataract surgery, most respondents indicated it was successful, but only 29% of respondents felt their surgery was very successful. Elements of patient-physician communication were not significantly associated with perceived success of surgery. Compared to those who reported a shared decision-making process with their HCP, individuals who reported their HCP made the decision about whether to proceed with surgery had 5.6 times higher odds of indicating their surgery was very successful.

Conclusions: From the patient perspective, patient-physician communication about cataract surgery is highly variable, without consistent discussion of pros, cons, and patient preferences. In this cohort, shared decision-making for cataract surgery did not produce the intended outcomes of improving patient knowledge, confidence in their decision, or perceived success of surgery.

Commercial Relationships: Roni M. Shtein, None; Taylor Blachley, None; Paul P. Lee, None; David C. Musch, None; Angela Fagerlin, None; Brian J. Zikmund-Fisher, None
Program Number: 1564  Poster Board Number: C0203
Presentation Time: 8:30 AM–10:15 AM
Pediatric Cataract Surgery: Baseline Characteristics of a North American Pediatric Eye Disease Registry
Michael Repka1, Trevano Dean2, Elizabeth Lazar2, Sharon Freedman3, Denise Hug6, Phoebe Lenhart5, Bahram Rahmani6, Serena Wang7, Kimberly G. Yen8, Ramond T. Kraker2. 1Wilmer, Johns Hopkins University, Baltimore, MD; 2Jaeb Center for Clinical Research, Tampa, FL; 3Duke Eye Center, Durham, NC; 4Children’s Mercy Hospital, Kansas City, MO; 5Emory University, Atlanta, GA; 6Northwestern University, Chicago, IL; 7University of Texas, Southwestern Medical Center, Dallas, TX; 8Baylor College of Medicine, Houston, TX; 9Texas Children’s Hospital, Houston, TX.

Purpose: To describe the characteristics of children younger than 13 years of age undergoing lensectomy surgery in the United States and Canada.

Methods: Between June 2012 and November 2013, 51 centers enrolled children into a clinical research registry who had undergone primary lens surgery in the preceding 45 days. Data collected at the time of enrollment from medical record review included patient demographics, systemic and ocular conditions, family history, and whether or not an intraocular lens (IOL) was implanted.

Results: 415 children were enrolled; 211 (51%) were female. Race/ethnicity was 244 (59%) white, 65 (16%) African American, 57 (14%) Hispanic, 14 (3%) Asian, 24 (6%) mixed/other, and 11 (3%) not reported. Surgery was performed at less than 1 year of age in 138 (33%); 1 to <4 years of age in 87 (21%); 4 to <7 years of age in 94 (23%); and 7 to <13 years of age in 96 (23%). Cataract surgeries were bilateral in 111 (27%). At the time of surgery, a wide range of systemic medical conditions were reported for 119 (29%); developmental delay in 31 (7%) and Down syndrome in 6 (1%). Prior use of oral steroids was reported in 20 (5%). A family history of juvenile cataract was present in 74 (18%). Healthcare insurance was reported for 407 (98%); 46% had Medicaid/State CHIP coverage. The parents of 337 (81%) indicated they were at least high school graduates. Strabismus was present in 107 (26%). Ocular abnormalities other than cataract were present in 123 (24%) of 515 enrolled eyes. Of these abnormalities, 60 (49%) were in the anterior segment only, 39 (32%) were in the posterior segment only, and 24 (20%) occurred in both segments. An IOL was used for 203 of 304 (67%) unilateral cases (Figure top) and 54 of 111 (49%) bilateral cases (Figure bottom) for the entire cohort. IOLs were placed in 7% of cases performed prior to 1 year of age, more often with unilateral surgery than bilateral surgery (12% and 3%, respectively). For children at least 1 year of age, IOL implantation was performed in the majority for both unilateral and bilateral surgery (88% and 92%, respectively).

Conclusions: A minority of children undergoing lensectomy surgery have systemic or ocular conditions associated with their cataract. IOL placement is common after 1 year of age for both unilateral and bilateral lens surgery.
Purpose: To identify the prevalence and rate of cataract surgery after strictly small gauge retinal detachment repair (23 or 25 gauge) which has not been well established in the literature, and to evaluate long term visual outcomes after cataract extraction (CE) in vitrectomized eyes.

Methods: Retrospective case series from 2011 through 2012 by one group of retina surgeons performing primary RD repair using either 23 or 25 gauge pars plana vitrectomy (PPV) instrumentation with or without scleral buckle (SB). Exclusion criteria included preoperative proliferative vitreoretinopathy, postoperative retinal re-detachment, pre-existing macular disease, previous PPV or SB, documented follow-up of less than 3 months, and patients with prior CE. Main outcome measures included rate and time of CE following PPV. Secondary outcome measures included degree of visual improvement following CE, and evaluation of risk factors such as age and use of SB.

Results: A total of 86 patients were identified, mean age 56 years ±9.98, followed for a mean of 470 days ±263. 47 eyes underwent CE during the follow-up period. There was no significant difference in age between those who did or did not receive CE (p=0.11). Mean time to CE was 278 days ±144 with no significant difference between those eyes that had macula-on or macula-off detachments (p=0.52). The final LogMAR visual acuity (BCVA) was 0.215 ±0.343 (20/30) for eyes that underwent CE, and 0.429 ±0.386 (20/50) for those that did not undergo CE (p=0.01). Further analysis into mac-on vs mac-off detachments revealed a significant improvement in final acuity for those with mac-off detachments who underwent subsequent CE (p=0.03), while those with mac-on detachments did not reach significance (p=0.15). There was no significant relationship between those patients who received a SB at the time of PPV and underwent CE (p=0.22). Total follow-up time was significantly longer for those patients that ultimately received CE (mean 387 days ±211 vs 352 days ±261, p=0.0001).

Conclusions: Development of visually significant cataracts after small gauge vitrectomy for retinal detachment repair remains a common occurrence despite newer small gauge techniques. These cataracts can significantly decrease vision even in eyes with macula-off detachments. While most patients undergo CE within one year, long term follow-up for cataract formation is essential. Patient age and the use of SB does not affect the risk of cataract formation following PPV.

Commercial Relationships: Adam Sise, None; Tanuj Banker, None; Eric Weichel, None

Program Number: 1567 Poster Board Number: C0206
Presentation Time: 8:30 AM–10:15 AM

Purpose: To evaluate the visual outcome and safety of simultaneous cataract extraction in patients who underwent phacoemulsification and intraocular lens implantation during surgeryprogram for low-income populations in nearby states to Estado de Mexico

Methods: This retrospective study reviewed the results of 1300 consecutive patients (2600 eyes) who had simultaneous bilateral cataract surgery during a cataract surgery campaign for low income populations. Each patient was studied in detail including biomicroscopy, tonometry an fundus examination. All patients with vision 20/50 or worse were included for bilateral procedure. All Surgeries were performed by five different surgeons in a complete
estrile and independent conditions for each eye of each patient. All patients underwent phacoemulsification with intraocular lens implantation from June 2012 to February 2013. Outcome measures were postoperative best spectacle-corrected visual acuity and postoperative complication rates.

**Results:** The visual acuity as expected, improved significantly and complications were few and in all cases in a single eye, showing that there is no increased risk in a bilateral surgery. The double procedure was positively received by patients because it reduced the cost of post-operative treatment and decreases the recovery time.

**Conclusions:** There are certain circumstances in which it is acceptable bilateral cataract surgery and in our case the aim was to visually rehabilitate populations that otherwise would not have been able to get bilateral eye surgery. The most important factor to consider is an adequate selection of patients and the experience of the surgeons to minimize the risks.

**Commercial Relationships:** Rafael Bueno-Garcia, None; Sonia Sosa-Lopez, None; Manuel Vejarano-Restrepo, None

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**Program Number:** 1568 **Poster Board Number:** C0207  
**Presentation Time:** 8:30 AM–10:15 AM

**Management and results of 80 traumatic cataract cases in adults at the reference center, Conde de Valenciana Institute of Ophthalmology – Mexico City, A 2 year review**

Alberto Carlos Abdala Figueroa, Jorge C. Córdova-Cervantes, Miriam Lopez-Salas, Humberto Matiz-Moreno, Juan Carlos Serna-Ojeda. Oftalmología, Instituto Oftalmología Conde Valenciana, Mexico DF, Mexico.

**Purpose:** To determine the clinical presentation, trauma mechanisms, management and surgical outcomes in adult patients diagnosed with traumatic cataract.

**Methods:** Retrospective, observational study of clinical records in the period between 2010 to 2012.

**Results:** 80 patients were included, out of which 67 (83.75%) were male. The mean age of presentation was 46 years (range 18-82 years). Time between trauma and the initial consult varied from 4 hours to 63 years with a mean of 1 year. Best corrected visual acuity (BCVA) in the initial consult had a mean of 3/200 with a range from 20/30 to light perception. 64 patients (80%) suffered a closed globe trauma and 16 (20%) an open globe trauma. In 23.8% of the cases the trauma was due to an accident. Total white cataract was the most common morphology in 47.5% of cases (n=38). 96.25% (n=77) of cases were managed with phacoemulsification. 13.7% (n=11) required capsular tension rings and 22.5% (n=18) anterior automated vitrectomy. In 53% of the cases an in-the-bag intraocular lens (IOL) was implanted. Final BCVA was 20/30 (range from 20/20 to hand motions) with 47 patients (58.75%) achieving a BVCA of 20/40 or better. The mean final refraction was a spherical equivalent of -0.56D (range between -3.50 to +2.00).

**Conclusions:** The most frequent trauma mechanism was the closed globe trauma due to contusion. Phacoemulsification with in-the-bag IOL was the most common surgical procedure performed. A best corrected visual acuity of 20/40 or better was achieved in the majority of cases.

**Commercial Relationships:** Alberto Carlos Abdala Figueroa, None; Jorge C. Córdova-Cervantes, None; Miriam Lopez-Salas, None; Humberto Matiz-Moreno, None; Juan Carlos Serna-Ojeda, None

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**Program Number:** 1569 **Poster Board Number:** C0208  
**Presentation Time:** 8:30 AM–10:15 AM

**Prevalence and Severity of Cataracts in an Underserved Population in Nashville, Tennessee**

Samantha L. Williamson1, Li Wang2, Chasidy Singleton1,  
1Ophthalmology, Vanderbilt Eye Institute, Nashville, TN;  
2Biostatistics, Vanderbilt University, Nashville, TN;  
3Ophthalmology, Meharry Medical College, Nashville, TN.

**Purpose:** To estimate the prevalence of cataracts and presentation of legal blindness from cataracts in an urban, underserved population. Potential risk factors associated with advanced disease, including socioeconomic disparities, were also investigated.

**Methods:** Retrospective IRB-approved chart review of new patient encounters at Nashville General County Eye Clinic from 2006 through 2011. Data were analyzed by descriptive statistics. Of a total 4700 new patients, 1308 had cataracts (identified by ICD-9 codes 366.xx). Patients were stratified by age, gender, race, best-corrected vision, and level of treatment. The relationship between socioeconomic, medical, and environmental factors and the severity of vision loss was assessed.

**Results:** The prevalence of cataracts over 5 years in this underserved population was 27.8%, which was statistically significant (p<0.001) compared to the documented U.S. prevalence of 17.2% among people over 40. Patients averaged 57 +/- 11 years of age (range 49 to 64 years). By race, 30.1% identified as Caucasian, 55.7% as African-American, 5.8% Hispanic, and 8.4% of other ethnicities. Females comprised 55.1% and males 44.9%. 35.5% of patients required surgery and 33% were treated with refractive correction. 44.9% were uninsured/self-pay, 23.6% on Medicare, 15.8% on Medicaid, 7.4% had commercial insurance, and 8.3% were incarcerated.

Legal blindness in patients younger than 60 was seen in 13.1% of this population, 80% of whom required surgery. The most common medical conditions were hypertension (52%), diabetes (39%), hyperlipidemia (24%), and COPD (9.4%). This group had higher rates of incarceration (26.5%), lack of insurance (46.5%), prior ocular trauma (42%), and illicit drug use (21.8%).

**Conclusions:** Patients in this underserved population exhibit a higher prevalence of cataracts than the general US population. Younger patients with advanced disease tended to be uninsured or institutionalized, have multiple medical co-morbidities, and endorse a history of prior ocular trauma and drug use.

**Commercial Relationships:** Samantha L. Williamson, None; Li Wang, None; Chasidy Singleton, None

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of the presence of and severity of lens opacification, using the slit lamp–based Lens Opacities Classification System II (LOCS II). All lens changes (including pseudophakia/aphakia), any nuclear, PSC, and cortical opacities, and nuclear only, PSC-only, and cortical-only opacities were evaluated. Frequency distributions and chi-square test analyses were used to determine the age- and gender-specific prevalence for each opacity type.

**Results:** Of the 4,582 who completed the ophthalmic examination 4234 had LOCS II grading. Of these 4234 participants, 7 (0.2%) had PSC-only opacities, 927 (21.9%) had nuclear-only opacities, 386(9.1%) had cortical-only opacities, and 531 (12.5%) had mixed-type opacities. The prevalence of all lens changes (48.0%) increased with older age (P<0.0001). Of all participants with mixed opacities, 126 (23.7%) had monocular visual impairment and 50 (9.4%) had binocular impairment. Four hundred fifty four (9.9%) individuals had undergone cataract extraction in at least one eye.

**Conclusions:** Our data provide the first population-based estimates of prevalence and severity of lens opacities in Chinese Americans. Nuclear opacities were the most common type. Chinese Americans have higher age-specific prevalence of nuclear opacities compared with Non-Hispanic Whites, Afro-Caribbeans and Latinos.

**Commercial Relationships:** Mina Torres, None; Jie Sun, None; Shuang Wu, None; Chunyi Hsu, None; Roberta McKean-Cowdin, None; Stanley P. Azen, None; Rohit Varma, None

**Support:** NIH Grant EY-017337 and Research to Prevent Blindness, NY

**Program Number:** 1571 **Poster Board Number:** C0210 **Presentation Time:** 8:30 AM–10:15 AM

**Association of American Society of Anesthesiology (ASA) Classification with Complications and Visual Outcomes of Cataract Surgery in the Veteran Population**

David Sola-Del Valle1, 2, Luis A. Gonzalez2, 3, Tulay Cakiner-Egilmez4, Amy Chomsky5, 6, Elizabeth Baze6, 7, David Vollman8, 9, Mary G. Lawrence9, 10, Mary K. Daly1 2. 1 Ophthalmology, VA Boston Healthcare System, Boston, MA; 2 Ophthalmology, Boston University School of Medicine, Boston, MA; 3 Ophthalmology, Massachusetts Eye and Ear Infirmary, Boston, MA; 4 Ophthalmology, VA Tennessee Valley Healthcare System Center, Nashville, TN; 5 Ophthalmology, Vanderbilt University, Nashville, TN; 6 Ophthalmology, Michael E. DeBakey VA Medical Center, Houston, TX; 7 Cullen Eye Institute, Baylor College of Medicine, Houston, TX; 8 Ophthalmology, St Louis VA Medical Center, St Louis, MO; 9 Ophthalmology, Washington University School of Medicine, St Louis, MO; 10 Department of Defense, VA Vision Center of Excellence, Bethesda, MD.

**Purpose:** To determine whether the American Society of Anesthesiology (ASA) classification is associated with complications and visual outcomes of cataract surgery in the veteran population.

**Methods:** 4,880 of 4,923 cataract surgery cases were included from the Ophthalmic Surgical Outcomes Data Project (OSOD), a multicenter retrospective cohort study from five Veterans Administration Medical Centers. Outcomes included BCV A, minor and major complications as well as intraoperative events. Fisher’s exact, Chi square, and McNemar’s tests were used in the statistical analysis. A longitudinal data analysis using multivariate logistic regression for the main outcome, and multivariable logistic regression models for secondary outcomes were performed adjusting for potential confounders.

**Results:** By ASA criteria, there were 14 patients in class 1 (0.3%), 857 in class 2 (17.6%), 3,685 in class 3 (75.5%), and 324 in class 4 (6.6%). There was a significant difference in mean age in ASA categories 3 and 4 versus those in ASA categories 1 and 2 (71.5±0.16 and 71.9±0.5 vs 60.2±2.5 and 66.4±0.3, p<0.0001). There was a higher percentage of small pupils in higher ASA classes (p<0.0001), a higher proportion of ocular trauma in lower ASA classes (p<0.003), and a higher proportion of diabetes mellitus, hypertension, smoking status and alcohol intake with higher ASA class (p<0.0001). The proportion of eyes with final postoperative BCV A better than 20/40 decreased as ASA class increased (p<0.003). All ASA class 1 patients with pre-operative BCV A worse than 20/40 significantly improved to better than or equal to 20/40, 91.2% in class 2, 91.2% in class 3, and 84.9% in class 4 did so (p=not estimable, p<0.0001, p<0.0001, p<0.0001). After adjusting for confounders, we found a significant association between ASA class and BCVA, with higher proportion of eyes improved as class decreases. There were no significant associations between ASA class and intraoperative events, major, or minor complications after adjustment for covariates.

**Conclusions:** Our study shows that as ASA class increases, the percentage of eyes that improve in BCVA decreases. However, this trend may be confounded by the higher prevalence of co-morbidities such as diabetes mellitus and hypertension. The association with final postoperative BCVA remained significant after adjusting for potential confounders.

**Commercial Relationships:** David Sola-Del Valle, None; Luis A. Gonzalez, None; Tulay Cakiner-Egilmez, None; Amy Chomsky, None; Elizabeth Baze, None; David Vollman, None; Mary G. Lawrence, None; Mary K. Daly, None

**Program Number:** 1572 **Poster Board Number:** C0211 **Presentation Time:** 8:30 AM–10:15 AM

**PREVALENCE AND OUTCOMES OF CATARACT SURGERY IN AN URBAN CENSUS SECTOR OF PARINTINS, BRAZILIAN AMAZON REGION**

Sung E. Watanabe1, Sergio Munoz1, Adriana Berezovsky1, Joao M. Hurtado1, 2, Marcos J. Cohen3, Jacob M. Cohen4, 5, Marcia R. Mitsuhiro1, Alex G. Sá1, Rubens Belfort Jr1, Solange R. Salomao1, 2.

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**Purpose:** To investigate the prevalence and visual acuity outcomes of cataract surgery in older adults in an urban census sector of Parintins, Brazil.

**Methods:** An urban census sector was conveniently chosen for its proximity to the eye clinic for ophthalmic assessment. Subjects were enumerated through a door-to-door survey and those with ages 45 years and older were invited for ophthalmic assessment. Participants were queried as to the year and type of facility for previous cataract surgery. Surgical procedure and evidence of surgery complications were noted. Main outcome measures were presented and best-corrected vision, and the principal cause for eyes presenting with VA <20/40 was identified.

**Results:** A total of 178 eligible persons in 136 households were enumerated, and 144 (80.9%) were examined. The prevalence of cataract surgery was 19.44% (95% confidence interval [CI]: 13.3% - 26.9%). Among the 46 (16.0% - 95% CI – 11.9% - 20.7%) operated eyes, 52.2% presented with VA >20/40, 4.4% with VA 20/40 to <20/63, 21.7% with VA 20/63 to 20/200 and 21.7% with VA <20/200. With best correction, the percentages were 60.9%, 2.2%, 19.6% and 17.4% respectively. Intraocular lenses were found in 89.1% of cataract-operated eyes; 71.7% appeared to have been operated by phacoemulsification. Uncorrected refractive error and corneal opacities were the main causes of vision impairment/blindness in operated eyes.

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Conclusions: In a small urban census sector of the Brazilian Amazon region, the prevalence of cataract surgery was substantially higher when compared to other urban areas of Brazil. Cataract surgery campaigns implemented in the last 10 years in that area had provided access to this population in remote area of the Amazon. Uncorrected refractive errors and other causes of impairment were common in cataract-operated eyes. Emphasis on the quality of VA outcomes is needed.

Commercial Relationships: Sung E. Watanabe, None; Sergio Munoz, None; Adriana Berezovsky, None; Joao M. Furtado, None; Marcos J. Cohen, None; Jacob M. Cohen, None; Marcia R. Mitsuhiro, None; Alex G. Sá, None; Rubens Belfort, Jr., None; Solange R. Salomao, None

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Program Number: 1573 Poster Board Number: C0212
Presentation Time: 8:30 AM–10:15 AM

Association of Glaucoma and Surgical Outcomes Following Cataract Surgery in Veteran Population: Results from the Ophthalmic Surgical Outcomes Data Project

Luis A. Gonzalez1,3, Tulay Cakiner-Egilmez1, David Sola-Del Valle1, Xi Chen1, Amy Chomsky4,5, Elizabeth Baze6,7, David Vollman8,9, Mary G. Lawrence4,5, Mary K. Daly1,2,3, Ophthalmology, VA Boston Healthcare System, Boston, MA; Ophthalmology, Boston University School of Medicine, Boston, MA; Ophthalmology, Harvard Medical School - MEERI, Boston, MA; Ophthalmology, VA Tennessee Valley Healthcare System Center, Nashville, TN; Vanderbilt Eye Institute, Vanderbilt University, Nashville, TN; Ophthalmology, Michael E. DeBakey VA Medical Center, Houston, TX; Cullen Eye Institute, Baylor College of Medicine, Houston, TX; Ophthalmology, St Louis VA Medical Center, St Louis, MO; Ophthalmology, Washington University School of Medicine, St. Louis, MO; Department of Defense, VA Vision Center of Excellence, Bethesda, MD.

Purpose: To estimate the association between glaucoma and the prevalence of complications and visual outcomes of cataract surgery in the veteran population.

Methods: A multicenter, retrospective cohort analysis from five VAMC sites. Clinical and demographic characteristics as well as outcome variables were investigated in patients who had cataract surgery. Outcomes analyzed included BCVA, minor and major complications, and intraoperative events. Fisher’s exact, chi square, McNemar’s tests, and t-test were used for statistical analysis. A longitudinal data analysis using multivariate logistic regression for the main outcome, and multivariable logistic regression models for secondary outcomes were performed adjusting for potential confounders.

Results: Of the 4899 eyes, 608 (12.4%) had glaucoma. Mean age was 74.5±9.4 in patients with glaucoma compared to 70.0±9.6, without it (p<0.0001). There were no differences in ASA class, diabetes, diabetic retinopathy, hypertension and gender. PXF and small pupil were higher in patients with glaucoma (p<0.0001). The percentage of eyes that improved was higher in those without glaucoma (91.4%) compared to that seen in those with glaucoma (86.4%). The prevalence of posterior capsular tear (p=0.027), vitreous prolapse (p=0.03) and anterior vitrectomy (p=0.007) were higher in eyes with glaucoma. More eyes in the glaucoma group were identified as having minor and major complications (p<0.0001), vitreous loss (p=0.03), stromal edema (p=0.045), and post-operative inflammation (p=0.0001). We also observed significantly higher proportion of postoperative IOP of >25 mmHg (p=0.0001) as well as <5 mmHg at one week (p=0.011) in patients with glaucoma. After accounting for confounders, we found a significant association between glaucoma and BCVA as well as significant differences in intraoperative events, minor and major complications between groups.

Conclusions: We found that glaucoma is associated with a significantly higher prevalence of intraoperative events, minor, and major complications. Though the presence of glaucoma is associated with a lower percentage of eyes improved, the change in BCVA is still significant in this group after cataract. The glaucoma group had a higher intraocular postoperative pressure, suggesting the possible need of a more aggressive IOP lowering therapy in glaucomatous eyes.

Commercial Relationships: Luis A. Gonzalez, None; Tulay Cakiner-Egilmez, None; David Sola-Del Valle, None; Xi Chen, None; Amy Chomsky, None; Elizabeth Baze, None; David Vollman, None; Mary G. Lawrence, None; Mary K. Daly, None

Program Number: 1574 Poster Board Number: C0213
Presentation Time: 8:30 AM–10:15 AM

Association of Age with Surgical Complications and Visual Outcomes Following Cataract Surgery: Results of the Ophthalmic Surgical Outcomes Data Project

Erol E. Verter1,2, Tulay Cakiner-Egilmez1, Luis A. Gonzalez1, Amy Chomsky4,5, Elizabeth Baze6,7, David Vollman8,9, Mary G. Lawrence4,5, Mary K. Daly1,2,3, Ophthalmology, VA Boston Healthcare System, Boston, MA; Ophthalmology, Boston University School of Medicine, Boston, MA; Ophthalmology, Harvard Medical School - Massachusetts Eye and Ear Infirmary, Boston, MA; Ophthalmology, VA Tennessee Valley Healthcare System Center, Nashville, TN; Vanderbilt Eye Institute, Vanderbilt University Medical Center, Nashville, TN; Ophthalmology, Michael E. DeBakey VA Medical Center, Houston, TX; Cullen Eye Institute, Baylor College of Medicine, Houston, TX; Ophthalmology, St Louis VA Medical Center, St Louis, MO; Ophthalmology, Washington University School of Medicine, St. Louis, MO; Department of Defense, VA Vision Center of Excellence, Bethesda, MD.

Purpose: To analyze the association of age and complications and visual outcomes of cataract surgery in the veteran population.

Methods: We included 4897 of 4923 eyes from the Ophthalmic Surgical Outcomes Data Project (OSOD), a multicenter retrospective cohort analysis from five VAMC sites. Data were collected according to OSOD definitions. Baseline variables included ASA class, gender, BMI, diabetes mellitus, hypertension, glaucoma, and small pupil. Outcome variables were: BCVA, minor and major complications, and intraoperative events. Fisher’s exact, chi square, McNemar’s tests, and t-test were used for statistical analysis. A longitudinal data analysis using multivariate logistic regression for the main outcome, and multivariable logistic regression models for secondary outcomes were performed adjusting for potential confounders.

Results: We categorized included cases into six age groups: <50 (min 28, 0.75%, n=37), 50-57 (9.7%, n=479), 60-69 (38.9%, n=1909), 70-79 (29.7%, n=1453), 80-89 (19.7%, n=969) and >90 (1%, n=50) years old. Overall, 90.7% of those with BCVA worse than 20/40 improved to 20/40 or better after the surgery (p<0.0001). We found that the percentage of improvement was significant across all age groups (95% in <50, 94.7% in 50-59, 92.5% in 60-69, 91.1% in 70-79, 84.7% in 80-89, and 90.9% in >90, p<0.0001 for all). We found a higher prevalence of intraoperative events as age increased; higher use of pupillary expansion devices (9.6% in patients 70-79, 13.3% in 80-89, and 30.0% in >90 years, p<0.001); higher prevalence of posterior capsular tear, vitreous prolapse, and anterior vitrectomy in...
Infectious scleritis represents a diagnostic challenge. Secondary glaucoma(1)
Main complications were cataracts (3), retinal detachment(1) and
Surgical exploration or biosy was not necessary in any of the patients.
responded well to medical treatment guided by antibiogram results.
None of them had keratitis or endophtalmitis associated and
inmunosupression, and a previous periocular injection treatment.
identified in three of them, such as previous pterigyum surgery,
caused by normal bacterial flora Grampositive cocci (5) and one
10mm and clinical cure ≥ ± 0,79 and 0,54 logMAR
decrease in vision (53,8%). Average visual acuity was 0,43 logMAR
characterized by hiperemia (92,3%), ocular pain (84,6%) and
Mean time since onset was 45 days (± 31), with clinical features
pathogenic organisms and the outcomes in cases of infectious scleritis
Results: A total of 362 patients were included, seventy nine had
episcleritis (23,1%) and two hundred and sixty three had scleritis
(76,9%). Infectious scleritis was found in thirteen cases (12 anterior
and 1 posterior scleritis). Among them, mean age was 48.15 years
(±17,8), with no sex predominance (6 males and 7 females).
We found four patients with herpetic scleritis, 3 of them had also
skin, corneal and uveal involvement. All of these patients received
medical treatment with oral Aciclovir during 2,75 months in
from the records
infected origin. Early recognition and appropriate treatment
for sistemic conditions must be considered as risk factors for an
Prior ocular surgery or trauma and inmunosupression treatment
for potential confounders, we found that increasing age is associated
with lower prevalence of BCVA of 20/40 or better, however,
a significant visual improvement was observed in all groups,
suggesting cataract surgery is beneficial in all groups of the OSOD.

Conclusions: Our results show that intraoperative events and minor
complications are more prevalent as age increases. After accounting
for potential confounders, we found that increasing age is associated
with lower prevalence of BCVA of 20/40 or better, however,
a significant visual improvement was observed in all groups,
suggesting cataract surgery is beneficial in all groups of the OSOD.

Commercial Relationships: Erol E. Verter, None; Tulay Cakiner-
Egilmez, None; Luís A. Gonzalez, None; Amy Chomsky, None;
Elizabeth Baze, None; David Vollman, None; Mary G. Lawrence,
None; Mary K. Daly, None

Program Number: 1575 Poster Board Number: C0214
Presentation Time: 8:30 AM–10:15 AM
Infectious scleritis. Clinical characteristics and ethiology
Elsa Maria Flores Reyes1, Vanessa Valderrama Albino2, Miguel
Pedroza-Seres1. 1Ophthalmology, Instituto de Oftalmología Conde de
Valenciana, Mexico City, Mexico; 2Uveitis and Ocular Inmunology,
Institute of Ophthalmology Conde de Valenciana, Mexico City,
Mexico.

Purpose: To describe the clinical and epidemiological features,
pathogenic organisms and the outcomes in cases of infectious scleritis

Methods: Retrospective chart review of all patients with infectious
scleritis examined from 2009 to 2013 in the Uveitis and Ocular Inmunology
Department of Institute of Ophthalmology, “Conde de Valenciana,” Mexico City, Mexico. Information including
epidemiological and clinico-microbiological data were abstracted from the records

Results: A total of 362 patients were included, seventy nine had
episcleritis (23,1%) and two hundred and sixty three had scleritis
(76,9%). Infectious scleritis was found in thirteen cases (12 anterior
and 1 posterior scleritis). Among them, mean age was 48.15 years
(±17,8), with no sex predominance (6 males and 7 females).
Mean time since onset was 45 days (±31), with clinical features
characterized by hiperemia (92,3%), ocular pain (84,6%) and
decrease in vision (53,8%). Average visual acuity was 0,43 logMAR
±0,79 and 0,54 logMAR ≥ after full treatment
We found four patients with herpetic scleritis, 3 of them had also
skin, corneal and uveal involvement. All of these patients received
medical treatment with oral Aciclovir during 2,75 months in
average with fully recovery. Three patients were classified as having
mycobacterial scleritis, two of them with associated uveitis; in all
cases diagnosis was confirmed by a PPD ±10mm and clinical cure
after antifimictherapy. Six patients presented a scleral infection
caued by normal bacterial flora Grampositive cocci (5) and one
by Pseudomonas spp. Risks factors for bacterial infection were
identified in three of them, such as previous pterigyum surgery,
imunosupression, and a previous periocular injection treatment.
None of them had keratitis or endophthalmitis associated and
responded well to medical treatment guided by antibiogram results.
Surgical exploration or biosy was not necessary in any of the patients.
Main complications were cataracts (3), retinal detachament(1) and
secondary glaucoma(1)

Conclusions: Infectious scleritis represents a diagnostic challenge.

Prior ocular surgery or trauma and immunosupression treatment
for sistemic conditions must be considered as risk factors for an
infectious origin. Early recognition and appropriate treatment
improve visual outcome

Commercial Relationships: Elsa Maria Flores Reyes, None;
Vanessa Valderrama Albino, None; Miguel Pedroza-Seres, None

Program Number: 1576 Poster Board Number: C0215
Presentation Time: 8:30 AM–10:15 AM
Prevalence of pseudoxefoliation among patients scheduled for
cataract surgery: the Ourense study
Andrea Goveito1, Ramon Lorente2, Paula Vazquez de Parga2, Laura
Rojas2, Fiz Lagoa2. 1Ophthalmology, Ourense University Hospital,
Ourense, Spain; 2Biostatistics, Ourense University Hospital, Ourense,
Spain.

Purpose: As primary objective, to assess the prevalence of
pseudoxefoliation (PXF) among patients scheduled for cataract
surgery at our institution. As secondary objectives, to assess whether
PXF is associated with the hardness of lens nucleus, pupil dilation,
glaucoma and age.

Methods: A cross-sectional prevalence study was designed. We
evaluated 1763 phakic eyes of 1093 patients scheduled for cataract
surgery between January 2013 and August 2013. All patients
underwent a complete ophthalmological examination performed by
an experienced cataract surgeon. PXF was diagnosed in phakic eyes
that showed characteristic central and/or peripheral whitish deposits
on the lens surface. Pupils were evaluated with a portable pupil
chart after dilatation with topical tropicamide. Nucleus hardness
was assessed according to the Lens Opacities Classification System

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Parameters: The Beijing Eye Study

Poster Board Number: 1577
Program Number: C0216
Presentation Time: 8:30 AM–10:15 AM

Purpose: To investigate the normative data of lens vault and their associations with ocular and general parameters in Chinese adults.

Methods
The Beijing Eye Study 2006 included 3251 subjects. The subjects underwent an ophthalmologic examination including measurement of the anterior chamber dimensions by slit-lamp-based optical coherence tomography (SL-OCT). The value of lens vaults (LV), defined as the perpendicular distance between the anterior pole of the crystalline lens and a horizontal line, were got from the pictures of SL-OCT. The value of lens vaults (LV), defined as the perpendicular distance between the anterior pole of the crystalline lens and a horizontal line, were got from the pictures of SL-OCT. The multiple linear regression analysis were used to analysis the relationship between LV and ocular and general parameters. Results: In an multiple linear regression analysis, the LV was significantly associated with rural or urban district, gender, age, refractive error, IOP, anterior chamber depth, anterior chamber angle, CCT, primary angle closure glaucoma, primary open angle glaucoma, nuclear cataract, cortical cataract, suture blood pressure and diastolic blood pressure, but not significantly associated with subcapsule cataract, DM, DR, height, weight, body mass index, fasting blood glucose, blood total cholesterol, blood triglyceride, high density lipoprotein and low-density lipoproteins.

Conclusions: The lens vaults are maybe a important parameters about to evaluate and diagnose primary angle-closure glaucoma.

Commercial Relationships: Jinda Wang, None

Program Number: 1577 Poster Board Number: C0216
Presentation Time: 8:30 AM–10:15 AM

Patient Reported Prevalence of Eye Disease in Osteogenesis Imperfecta

Eric Feinstein1, Jay Shapiro2, Andrew W. Francis3, Felix Chau3
1Ophthalmology and Visual Sciences, University of Illinois Chicago, Chicago, IL; 2Department of Physical Medicine and Rehabilitation, Kennedy Krieger Institute, Baltimore, MD.

Purpose: Osteogenesis imperfecta (OI) is a systemic disorder with defects in Type 1 collagen and multiple OI types with variable genotypes and phenotypes that may include bone fractures, dental abnormalities, and other problems. While blue sclera, thin corneas, and various eye diseases have been described in OI in isolation, this study reports data on the prevalence of different eye conditions in the OI population for the first time from a patient based survey.

Methods: An internet based survey to record OI patient experiences of eye conditions was performed by the Kennedy Krieger Institute OI Registry (www.osteogenesissuperfecta.org/or1/; Jay Shapiro, MD, survey author). The OI Registry general survey began in March 2006 and this study describes patient reported eye conditions as of April 2013.

Results: 409 of 2027 (20% response rate) OI patients in the OI Registry responded to the eye survey including: 290 (71%) female; 119 (29%) male; 203 (50%) OI type I; 35 (9%) OI type III; 50 (12%) OI type IV; 6 (2%) OI type V; 2 (1%) OI type VI; and 111 (27%) unknown OI type. Mean age ± stdev was 35 ± 20 years. 133 of 409 (33%) eye survey responses described eye or vision-related problems including (from highest to lowest frequency):

1) loss of vision 41 (10%)
2) refractive errors (myopia 17, hyperopia 4, astigmatism 15, contact lens use 1, presbyopia 1, Lasik correction 1) 39 (10%)
3) glaucoma 16 (4%)
4) cataract 9 (2%)
5) keratoconus 7 (2%)
6) macular degeneration 3 (1%), scleromalacia 3 (1%), floaters 3 (1%)
7) retinal or vitreous hemorrhage 2 (0.5%), amblyopia 2 (0.5%), light sensitivity 2 (0.5%)
8) retinal tears or detachment 1 (0.2%), ocular occlusion 1 (0.2%), dry eyes 1 (0.2%), oval shaped eye 1 (0.2%), high pressure 1 (0.2%), poor eyelid closure 1 (0.2%), chorioiritis 1 (0.2%), retinal thinning 1 (0.2%), eyelid ptosis 1 (0.2%), eye paralysis 1 (0.2%), oculomotor nerve palsy 1 (0.2%), allergic conjunctivitis 1 (0.2%)

Conclusions: In this first survey on prevalence, OI patients report a wide range of ocular pathologies and may occasionally develop serious, blinding eye conditions. Annual and as needed (for any visual change) ophthalmologist evaluations are advised to rule out and treat serious eye disease. Glasses with strong frames are advised for better vision and protection from accidental trauma. More studies on the prevalence of eye disease in the OI population are needed to improve OI patient eye care.

Commercial Relationships: Eric Feinstein, None; Jay Shapiro, None; Andrew W. Francis, None; Felix Chau, None

Program Number: 1579 Poster Board Number: C0218
Presentation Time: 8:30 AM–10:15 AM

Anterior Chamber Depth in Hispanic Population

Jesus Lozano, Manuel A. de Alba, Juan F. Lozano, Guillermo Mendoza, Alejandro Tamez, Jorge E. Valdez. Ophthalmology, Tecnológico de Monterrey, Monterrey, Mexico.

Purpose: To define the anterior chamber depth (ACD) measurements in a Hispanic population.
Methods: A retrospective study evaluating 124 Hispanic patients scheduled for refractive surgery at the Cornea and Refractive service from July 2012 to November 2013. For each patient, the following information was obtained for both eyes using Orbscan: ACD, white-to-white corneal diameter, central corneal thickness and pupil diameter. Descriptive statistics and correlations were performed for all the variables.

Results: A total of 124 subjects, 58 males and 66 females, were evaluated, with a mean age of 35 (±15.1) years. The mean ACD was 2.92 (±0.44) mm for general population; 2.99 (±0.4) mm in males and 2.88 (±0.46) mm in females. The mean white-to-white corneal diameter was of 11.7 (±0.38) mm, central corneal thickness 534.35 (±36.2) μm and a pupil diameter of 4.2 (±1.01) mm, all for males and females. A weak positive significant correlation was found between ACD and pupil diameter, r = 0.393 (p<0.001).

Conclusions: The mean anterior chamber depth in Hispanic population of 2.92 mm differs slightly from the mean ACD of 3.05 mm found in the Caucasian population, 3.00 found in Chinese and 2.96 found in Eskimos. The difference observed between males and females is of importance when evaluating patients, as females have a shallower anterior chamber. The ACD is important when evaluating glaucoma and cataract patients. The importance of this study lies in the lack of literature describing this information in Hispanic population.

Commercial Relationships: Jesus Lozano, None; Manuel A. de Alba, None; Juan F. Lozano, None; Guillermo Mendoza, None; Alejandro Tamez, None; Jorge E. Valdez, None

Program Number: 1580 Poster Board Number: C0219
Presentation Time: 8:30 AM–10:15 AM

Program Number: 1582 Poster Board Number: C0220
Presentation Time: 8:30 AM–10:15 AM

Prevalence and risk factors for dry eye syndrome in central Mexico: A population based study
Carlos Estrada-Reyes1, Enrique O. Graue1, Carlos Pantoja-Melendez2, Aida Jimenez-Corona2, 1. Cornea & External Disease Unit, Instituto Oftalmología Conde Valenciana, Mexico DF, Mexico; 2. Ocular Epidemiology Unit., Institute of Ophthalmology “Conde de Valenciana”, Mexico DF, Mexico.

Purpose: To determine the prevalence of dry eye syndrome and its relationship to socio-demographic and metabolic risk factors

Methods: Population based study in Tlaxcala Mexico. Inclusion criteria: individuals ≥ 50 years. 2400 individuals were eligible for the study. 1619 agreed to participate. General health questionnaire, height, weight, waist circumference, capillary glucose, systolic and diastolic blood pressure, corrected and uncorrected visual acuity were assessed. Blood and urine samples were collected and analysed for the presence of diabetes, its complications and dyslipidaemias. The prevalence of dry eye was evaluated through Dry Eye Questionnaire (DEQ-5) previously validated in Mexican population. Dry eye syndrome was defined as having a score ≥ 6. Statistical analysis was performed using STATA v.12. Crude and adjusted prevalence were calculated. Logistic regression was used to evaluate the effect of risk factors.

Results: The final study population consisted of 968 women (mean age 63.8 ± 10.3) and 651 men (mean age 65.9 ± 10.8). Type 2 Diabetes was present 31.62 % (n = 512). The 39.6% (n = 642) of the patients had score ≥6 on DEQ-5. Mean DEQ-5 in the study sample was 5.3 ± 4.5. Women were 2.9 times more likely to present dry eye than men (CI 95% 1.13 – 7.69, p = 0.028). Women were 46% more likely to have a score ≥6 (CI 95 % 1.19 - 3.1, p = 0.008) and 89% more likely to have a score ≥12 (CI 95 % 1.19 - 3.1, p = 0.008) than men. For every 5 years of diabetes duration there was a 17% increased risk of dry eye syndrome (p = 0.005).

Conclusions: Dry eye syndrome is a prevalent disease in adult Mexican population. Long standing Diabetes increases the risk of having dry eye symptoms.

Commercial Relationships: Carlos Estrada-Reyes, None; Enrique O. Graue, None; Carlos Pantoja-Melendez, None; Aida Jimenez-Corona, None

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At the Department of Ophthalmology at Unicamp – Brazil, we observed a high prevalence of obesity in patients followed due to keratoconus and few articles about it in international literature. Our study aims to determine the relationship of body mass index (BMI), as a standard measurement of overweight, in patients with keratoconus. 

**Methods:** A transversal study was realized between January and September 2013 at the Department of Ophthalmology at Unicamp – Brazil. Patients were weighed in mechanic balance and had their stature measured. All informations were analysed by chi-square test and compared with the database of the world health organization (WHO).

**Results:** According to WHO classification of BMI from 2011, 48.5% of brazilian population are overweight and 15.8% are obeses. In this study, 111 patients were rated, resulting in: 7.2% (8) are underweight (BMI < 18.5), 50.4% (56) are at the normal range (BMI 18.5 - 25), 24.3% (27) overweight (BMI 25-30) and 18% (20) obeses (BMI > 30). The relative risk is 1.14 and chi-square p=0.610. 

**Conclusions:** Despite the prevalence of obeses in this study are higher than in WHO, the groups do not have statistical significance. In conclusion, null hypothesis cannot be denied. More studies should be realized to verify relation between obesity and keratoconus. 

**Commercial Relationships:** Rosane S. Castro, None; Manoela Gondim, None; Livia Freire, None

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**Program Number:** 1583 **Poster Board Number:** C0222 **Presentation Time:** 8:30 AM–10:15 AM

**Keratoconus in Children: Long Term Follow-Up**


**Purpose:** To determine visual outcomes, disease progression, need for surgery in patients diagnosed with keratoconus (KC) before 18 years.

**Methods:** Retrospective case series. All patients with tomographic diagnosis of keratoconus (Pentacam HR, Oculus, Germany) younger than 18 years of age were identified, from July 2007 to May 2013 were identified. The quantitative tomographic parameters were compared and tested as predictive factors for KC progression. Additionally, family history, allergic conjunctivitis, refraction, best-corrected visual acuity, keratoconus grading scale (Amsler-Krumeich stages), co-morbidities, and KC treatment (intracorneal ring segments, corneal cross-linking, keratoplasty) were evaluated. Stastical analysis was performed with STATA v12. Descriptive statistics were obtained. Poisson regression analysis was done to evaluate the influence of potential markers of progression.

**Results:** One hundred-thirty four eyes were included in this study. There were 57 (72.2%) males and 22 (27.8%) females. The mean age was 14 ± 2.6 years, and the median follow-up period was 33.6 months (range 6-71 months). Only 2 patients (1.49%) had a family history of keratoconus. Of all eyes, 45 were evaluated at stage I keratoconus, 34 at stage II, 9 at stage III, and 46 at stage IV keratoconus. 110 patients (82.1%) had allergic conjunctivitis. Fifty-six (40.2%) eyes enrolled in this study showed progression. Acute hydrops occurred in 17 eyes (12.6%). Twelve eyes (8.2%) were treated by cross-linking, 6 eyes were managed with intracorneal ring segment, 3 patients (2.23%) required lamellar keratoplasty and 33 eyes (21.6%) penetrating keratoplasty, of which 4 eyes (9%) showed corneal graft rejection. Poisson regression analysis revealed that only severity and logMAR at the time of diagnosis was a significant predictor for progression (RR 1.97 CI95% 1.07-3.62 p=0.03, RR 1.85 CI95% 1.05-3.24 p=0.03

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**Program Number:** 1584 **Poster Board Number:** C0223 **Presentation Time:** 8:30 AM–10:15 AM

**Sleep Position and Obstructive Sleep Apnea in Keratoconus**

Natasha V. Nayak, Tenley Bower, Leela Raju, Amy C. Nau, Alex Mammen, Roheena Kamyar, Deepinder Dhaliwal. Ophthalmology, University of Pittsburgh Medical Center, Pittsburgh, PA.

**Purpose:** Keratoconus (KC) has been associated with atopy, eye rubbing, and a variety of systemic conditions including obstructive sleep apnea (OSA). There has been anecdotal suggestion that asymmetric keratoconus may be partly explained by sleeping on the ipsilateral side. Our purpose was to investigate the role of sleep position and OSA in patients with KC.

**Methods:** Telephone survey and retrospective chart review of patients with KC. Patients were screened for OSA (validated Berlin Questionnaire) and surveyed regarding sleep position, contact lens wear, eye rubbing, and eye trauma. Patient charts were reviewed for past ocular history, manifest refraction, slit lamp exam findings, and Scheimpflug imaging measurements (Oculus Pentacam), including flat keratometry (K), maximum keratometry (Kmax), posterior elevation at thinnest point (PETP), central corneal thickness (CCT), and pachymetry at thinnest point (TP). Inter-ocular differences (IOD) were defined as right (R) minus left (L) eye measurement (IOD would be negative if L>R). Non-parametric (Wilcoxon rank-sums) and chi-squared tests were used in analysis.

**Results:** Twenty-one patients with KCN (33.4 ± 11.1 years old; 76% male) were recruited. The sleep survey found 12 (57%; 5 right, 6 left, 1 both) side sleepers, 5 (24%) prone, and 4 (19%) supine. 19 (90%) admitted to rubbing their eyes and 14 (66%) had atopic disease. Five (24%) screened positive for OSA, although none had prior diagnoses or sleep studies. Side-sleepers had a higher proportion of (absolute) IOD in spherical equivalent of refraction (p=0.04). Patients who slept R-face down had significantly higher IOD in flat K, and lower IOD in TP/CCT compared to L-face down and neutral face position sleepers (p<0.05). This is consistent with the finding that R-face down sleepers were more likely to have higher flat K and thinner corneas (lower TP/CCT) in the ipsilateral eye (chi-squared, p < 0.05). 8 (38%) patients were aware they placed pressure on their eye(s) while sleeping. Patients who believed they placed pressure on their R eye while sleeping had significantly larger IOD in KCN and PETP compared to patients who denied placing pressure on either eye (p=0.04).

**Conclusions:** This study supports anecdotal evidence regarding the role of sleep position in KCN. Larger studies, including polysomnography, are warranted to support sleep interventions/education in patients with KCN.

**Commercial Relationships:** Natasha V. Nayak, None; Tenley Bower, None; Leela Raju, None; Amy C. Nau, None; Alex Mammen, None; Roheena Kamyar, None; Deepinder Dhaliwal, None

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Clinically unsuspected ocular surface squamous neoplasia and melanocytic conjunctival lesions in pinguecula and pterygium: a 20-year survey
Helena L. Dietrich, Pablo Zoroquiain, Patrick Logan, Francisco Ceballos, Emilia Antecka, Miguel N. Burnier. Henry C. Witelson Ocular Pathology Laboratory, Montreal, QC, Canada.

Purpose: Pinguecula and pterygium (P/PT) are frequent, surgically removed conjunctival lesions strongly related to sunlight exposure. Ocular surface squamous neoplasia (OSSN) represents a broad spectrum of lesions starting as dysplasia and evolving into squamous cell carcinoma of the conjunctiva. The incidence of OSSN features in P/PT has been described in some high ultraviolet (UV) light exposure areas, including Sydney, Australia (5%) and Florida, USA (1.8%). The aim of this study is to determine the incidence of unsuspected OSSN and melanocytic lesions (ML) in P/PT in a low UV area (Montreal, Quebec, Canada).

Methods: A retrospective study of all cases received between 1993 and 2013 with a clinical diagnosis of P/PT from the Henry C. Witelson Ocular Pathology Lab, McGill University, Montreal, Quebec, Canada was performed. Demographic data were retrieved from histopathological request forms. Identified OSSN and ML in P/PT were classified accordingly to the Armed Forces Institute of Pathology (AFIP) recommendations.

Results: Two hundred and seventeen cases were diagnosed clinically as PT (91.13%) and 21 as P (9.87%); 56.54% of all P/PT patients were male. The average age at diagnosis was 53.4±15.54 years. The overall incidence of OSSN in these P/PT cases was 6.65% (P: 19.04% PT: 5.55%); 56.25% of this cohort were female. The average age of patients with P/PT and OSSN was similar to non-OSSN P/PT patients (P>0.05). The OSSN were diagnosed as conjunctival intraepithelial neoplasia (CIN) I (68.75%), CIN II (12.5%), CIN III (12.5%), and actinic keratosis (6.25%). ML included one primary acquired melanosis without atypia and one with mild atypia (a 41-year old woman and a 60-year old male, respectively).

Conclusions: We reviewed the incidence of OSSN and ML in P/PT from a single center in Canada and found a relatively high association of OSSN with P. Most epithelial P/PT lesions were CIN I and age was not a significant demographic risk factor for the development of OSSN in P/PT. Our relatively high rate of dysplasia in a low UV index area challenges the main cause of this disease in our population, a hypothesis that should be evaluated in future studies. We suggest that all P/PT samples should be submitted to pathology for review.

Commercial Relationships: Helena L. Dietrich, None; Pablo Zoroquiain, None; Patrick Logan, None; Francisco Ceballos, None; Emilia Antecka, None; Miguel N. Burnier, None