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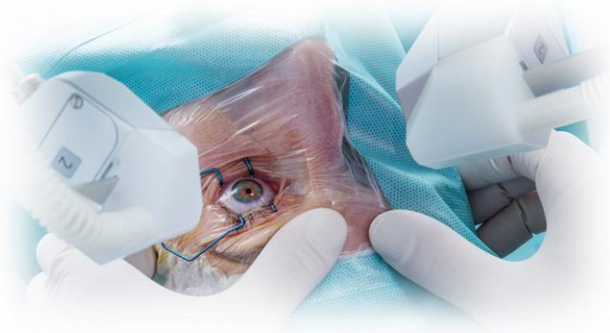

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Monofocal IOLs

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ARGOS®

Alcon Health Economics and Outcomes Research (Global)

FP4-10: Impact of an optical biometer's time efficiency in cataract evaluation and surgery: A comparative time-and-motion study

Sam Multack[1], Sean Timmons[2], Li-Chen Pan[2], Sun-Ming Pan[3], Lawrence Woodard[4]

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Abstract Details

Objective

This study aimed to quantify the efficiencies of adopting ARGOS® in the evaluation of cataract patients, which can integrate with operating room technologies (Verion™ Image-Guided System and ORA® System™ Technology), compared to IOLMaster® 700, LENSTAR®, and IOLMaster® 500.

Methods

A prospective, multi-center, within-subject, observational time-and-motion study was conducted with 208 cataract-patients (56% non-dense and 44% dense) at two US study sites. Statistical analyses were performed comparing ARGOS® measurement time (ANOVA-Post-hoc: Dunnett's test) and acquisition failure rate [AFR] (Chi-sq-Post-hoc: Bonferroni correction) to three other biometers. Leveraging inputs from this study as well as peer-reviewed literature, a time-efficiency model was constructed. Two scenarios were developed: 1) time difference when ARGOS® and Verion™ are adopted at a practice using IOLMaster® 700 and 2) time difference when ARGOS® is adopted at a practice using Verion™ and LENSTAR®.

For both scenarios described, Manual A-scan, LenSx®, and ORA® were assumed to be available in-house.

Results

ARGOS® was statistically significantly faster compared to all three biometers ($p<0.05$) and offered a statistically significant improvement in AFR (0%) compared to LENSTAR® (AFR:5%; $p=0.0041$) and IOLMaster® 500 (AFR:15%; $p<0.0001$). The time-efficiency model showed that for every 1,000-patients, 1) integrating ARGOS® and Verion™ at a practice with IOLMaster® 700 saved 30-hours-and-26-minutes and 2) adopting ARGOS® at a practice with LENSTAR® and Verion™ saved up to 45-hours-and-29-minutes; owing to ARGOS® faster biometry measurement, avoided A-scans, and integration capabilities with other technologies.

Conclusion

Through ARGOS® superior acquisition rate and integration functionalities with Verion™, substantial time efficiencies for cataract surgery practices, clinicians, and patients are achieved.

OVD

Alcon Health Economics and Outcomes Research (Global)

PP1-05: Chondroitin sulfate-hyaluronic acid combination ophthalmic viscosurgical device for corneal endothelial protection in cataract surgery: A meta-analysis

Hang Cheng[1], Rana Ghafouri[2], Nicole C. Ferko[3]

[1]Alcon, Fort Worth, TX, USA; [2]EVERSANA, Burlington, ON, Canada

Abstract Details

Objective

Ophthalmic viscosurgical devices (OVDs) protect the corneal endothelium during cataract surgery. A systematic review and meta-analysis were conducted to assess the clinical evidence of OVDs composed of chondroitin sulfate-hyaluronic acid (CS-HA) versus other OVDs in minimizing endothelial cell loss (ECL) and corneal thickness (CT) increase.

Methods

The literature was searched systematically in MEDLINE and EMBASE databases, from 2000 to 2020. Randomized controlled trials (RCTs, N ≥ 20 /group) comparing an OVD containing CS-HA (i.e, VISCOAT®, DuoVisc® or DisCoVisc®) to any other OVD were included. Identified comparators consisted of OVDs composed of HA-only or hydroxypropyl methylcellulose (HPMC). Meta-analyses were performed using R software, to assess mean differences (MD) in percent ECL (baseline to 3 months) and CT change (baseline to 24 hours) between CS-HA OVDs and HA-only or HPMC OVDs.

Results

A total of 966 abstracts were screened and data were extracted from 12 RCTs. Random effects meta-analyses revealed significantly lower ECL for CS-HA OVDs compared to both HA-only (MD: -4.10%; 95% CI: -5.81 to -2.40; $p < 0.0001$; 9 studies) and HPMC (MD: -6.47%; 95% CI: -10.41 to -2.52; $p = 0.001$; 2 studies) products. Change in CT was significantly lower with CS-HA than with HA-only OVDs (MD: -3.22%; 95% CI: -6.24% to -0.20%; $p = 0.04$; 4 studies) but no significant differences were observed when compared to HPMC OVDs (MD: 2.65%; 95% CI: -0.43% to 0.95%; $p = 0.4$; 2 studies).

Conclusion

Relative to other OVDs, CS-HA OVDs appear to better protect the corneal endothelium by reducing postoperative ECL.

Smart Cataract **Alcon Health Economics and Outcomes Research (Global)**

PP1-11: Transcription errors in ophthalmology: Current burden and the opportunity for digital technologies

Derek O'Boyle[1], Rana Ghafouri[2], Margaret Ainslie-Garcia[2]

[1]Alcon, Fort Worth, Texas; [2]EVERSANA, Burlington, Canada

Abstract Details

Objective

Pre-operative work-up for cataract surgery is an intensive and complex process and ensuring accuracy is crucial to avoid IOL implantation errors and/or poor refractive outcomes. A literature review was conducted to understand the burden of transcription errors in ophthalmology and the impact of recent digital technologies.

Methods

MEDLINE was searched without language restriction from Jan-01-2001 to Sept-30-2021 using terms related to digital solutions (artificial intelligence [AI], cloud, telemedicine) and errors. Grey literature was also scanned.

Results

Of 417 sources screened, 9 reported on transcription errors and 17 were related to digital solutions in ophthalmology. Transcription errors leading to wrong IOL implantation were most commonly reported for IOL selection and power calculation, followed by visual acuity measurements. Other root-cause errors included illegible handwriting, using data from the wrong eye or patient, and printing/faxing errors. Wrong IOL implants were associated with an average liability of $57,514 USD, causing moderate-to-severe harm in 33% (United Kingdom), and permanent injury in 11% of analyzed cases (United States). Examples of automation and AI currently in use in ophthalmic practice included tele-screening (ocular pathologies, post-operative follow-up), AI-informed surgical annotation software, and algorithms to automate IOL power calculations. Several ophthalmic societies and reviews recommended digital solutions, including software to improve calculation accuracy, and cloud technology to reduce the opportunity for human error.

Conclusion

Transcription errors remain an important cause of wrong IOL implants, but digital technologies may support improved accuracy through optimization and error reduction. Future studies are warranted to understand how technological advancements can best address unmet needs.

Balanced Tip

Medical Writing Grant

157: Comparison of the efficiency of the Intrepid® Tips and Kelman tips with Centurion® Silver system: a prospective clinical study

Yan-Xiu Sun[1,2], Rong Cao[2], Zi-Yuan Liu[1], Huaqin Xia[1], Yujie Cen[1], Lu Gao[2], Dandan Shi[2]

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Abstract Details

Objective

During cataract phacoemulsification surgery, an Intrepid® balanced (IB) tip can achieve a larger amplitude, which may lead to higher energy efficiency than a Kelman (K) tip when paired with a torsional phaco platform. In this retrospective cohort study, we compared their energy efficiency and damage to the cornea under a new energy setting.

Methods

The medical records of 104 eyes of 79 patients were reviewed, with 47 eyes belonging to the IB group and 57 eyes to the K group. All surgeries were performed on an Alcon Centurion® platform with gravity infiltration. Surgical parameters, visual outcome, central corneal thickness (CCT) changes, and endothelial cell density (ECD) loss rate were recorded and calculated.

Results

No significant differences in postoperative best corrected visual acuity (BCVA), intraocular pressure (IOP), total ultrasound time, estimated fluid aspirated, CCT changes, or ECD loss rate were observed between the two groups. We divided the included eyes into soft nucleus and hard nucleus subgroups and found lower cumulative dissipated energy (CDE, 8.15±8.02 vs 14.82±14.16, *P*=0.023), cumulative torsional energy (CTE, 8.06±7.87 vs 14.13±13.02, *P*=0.027), and cumulative longitudinal energy (CLE, 0.09±0.17 vs 0.69±1.37, *P*=0.017) in the IB group than in the K group, implying less energy used and higher energy efficiency of the IB tip.

Conclusion

Lower CLE in the IB group indicates fewer phaco tip obstructions and a higher capability to conquer hard nuclei with IB tips with statistical significance. With an ultra-perfusion cannula, the balanced tip does not cause more corneal damage.

AcrySof® Toric

Investigator Initiated Trial (China)

231: Long-term rotational stability and visual quality of the AcrySof® IQ toric IOL in eyes with low corneal astigmatism: a retrospective, case series study

LIU Dongmei

Abstract Details

Objective

This study aims to investigate the long-term rotational stability and visual quality of AcrySof® Toric IOL in eyes with low corneal astigmatism at long-term follow-up.

Methods

Cataract patients with axial length of <26mm who satisfied the study eligibility were recruited in this study. The results of preoperative and postoperative examinations of recruited subjects were extracted and analyzed. These parameters included the absolute IOL rotation at the subject's last visit, proportion of eyes with IOL rotation of less than 5 and 10 degrees, UDVA, BCDVA, MTF, PSF and HOA. Analyses were then performed with SPSS22.0 statistical software.

Results

Forty-one eyes from 36 consecutive patients were enrolled in this study. The mean age was 66.7±11.5（37~83）years and the mean follow-up period was 2.3 years. The mean decimal UCVA was 0.78±0.25.The BCVA improved slightly to 0.90±0.18. The mean absolute toric IOL axis rotation was 4.93±6.24 degrees. The mean residual cylinder was 0.61±0.36D. The average Strehl Radio value before surgery was 0.006 and reached 0.05 after surgery (t=-4.121, P=0.000). The preoperative AR value of the affected eye was 13.76% and reached 25.43% after surgery (t=-4.602, P=0.000). The average value of HOA decreased from 1.52 preoperative to 0.42 postoperatively (t=1.502, P=0.146).

Conclusion

In conclusion, AcrySof® Toric IOL showed good rotational stability during long-term follow-up. Implantation of Toric IOL in cataract patients with low corneal astigmatisms has significantly improved visual quality.

AcrySof® Toric

Investigator Initiated Trial (China)

193: Long-term rotational stability of AcrySof® IQ Toric IOLs in Chinese cataract patients with myopia: a retrospective, case series study

LIU Yang

Abstract Details

Objective

To investigate the long-term rotational stability of AcrySof® IQ Toric IOLs in Chinese cataract patients with myopia.

Methods

A retrospective case series. Cataract patients with preoperative axial length between 24mm and 30mm and corneal astigmatism >1.50D, who implanted with AcrySof® IQ Toric IOL under the guidance of Verion™ were recruited in this study. The results of preoperative and postoperative examinations of recruited subjects were extracted and analyzed. These parameters included the absolute IOL rotation at the subject's last visit, proportion of eyes with IOL rotation of less than 5 and 10 degrees, rotational direction, residual astigmatism and uncorrected distance visual acuity (BCDVA).

Results

A total of 120 unique cases (78 patients) were included. The average follow-up was 34.27 months (from 24 months to 48 months). The mean rotational degree was 2.73±1.29°. Patients were divided into two groups: Group A (High myopia (AL≥26mm)): 60 eyes, Group B (Low-to-moderate myopia (24mm≤AL<26mm)): 60 eyes. The rotational degree of group A (2.87±1.31°) was slightly larger than that of group B (2.59±1.27°) (P <0.05). There was no significant difference in IOL rotation between the two groups at 2-3 years and 3-4 years after operation (P >0.05). Among the observed patients, no patient had rotational degree greater than 10°, and the ratio of rotational degree ≤ 5° was 98.22%. The mean BCDVA of all patients was 0.13±0.03 logMAR after surgery, and the visual acuity after surgery was significantly improved compared with that before surgery (X^2 =76.79,P <0.05). The mean preoperative corneal astigmatism was (2.17±1.08) D, and the estimated residual astigmatism was (0.41±0.26) D, the difference between preoperative corneal astigmatism and postoperative residual astigmatism was statistically significant (t=4.281, P <0.05).

Conclusion

AcrySof® Toric IOL can effectively correct corneal astigmatism and has good long-term rotational stability in Chinese cataract patients with myopia.

AcrySof® Toric

Alcon Health Economics and Outcomes Research (India)

279: A decision-analytic model estimating opportunity cost and post-op chair time with Three Toric IOLs at a Cataract surgery center in India

Sanjay Chaudhary[1], Jun Zhang[2], Rajeev Nandan[3], Arindam Dey[3], Prashanth Prabhuswamy[3]

[1]Eye7 Eye hospitals, New Delhi, India; [2]Alcon Vision, LLC, Fort Worth, Texas, USA; [3]Alcon Laboratories (India) Private Ltd, Bangalore, India

Abstract Details

Objective

Post-surgery Toric IOL rotation may impact vision and requires immediate attention, potentially resulting in repositioning surgery and additional chair-time. The purpose of the analysis is to compare the opportunity cost and chair-time due to repositioning surgery rate with three hydrophobic acrylic Toric IOLs at a Cataract surgery clinic (N=1,000 cataract surgeries annually) in India.

Methods

A decision analytic model was developed in MS excel to conduct the analysis. Toric IOL repositioning surgery incidence rate for AcrySof® (0.2%), Tecnis® (1.80%) and Hoya (1.94%) toric IOLs were sourced from a retrospective multicenter study in Japan (Oshika, 2020). Proportion of cataract surgeries with Toric IOLs (25%), opportunity cost of repositioning surgery (INR 45,000) and additional overall chair-time for patient management (60 minutes) were informed by clinical expert inputs.

Results

The model compared three scenarios of annual toric IOL surgeries (n=250) with implantation of AcrySof®, Hoya or Tecnis® toric IOLs. Opportunity cost to center for repositioning surgeries with AcrySof®, Tecnis® and Hoya toric IOL was estimated to be INR 22,500 (USD 301), INR 202,500 (USD 2,712) and INR 218,475 (USD 2,926) respectively. Similarly, additional chair-time was estimated to be 30, 270 and 291 minutes for AcrySof®, Tecnis® and Hoya toric IOL respectively.

Conclusion

Findings from this decision analytic model suggest that AcrySof® Toric IOL is a favorable scenario compared to Tecnis® and Hoya Toric IOL as it could result in fewer repositioning surgeries, less chair-time and subsequently cost savings of INR 180,000 - 195,975 (USD 2,393 - 2,605) for the center.

Clareon® AutonoMe® **Alcon Initiated Trial (Korea)**

129: Post-Market Clinical Study of the Clareon® AutonoMe® with Korean Population

Soonwon Yang, Chul Young Choi, Tae-Young Chung, Joon-Young Hyon, Hyun-Seung Kim

Abstract Details

Objective

To report the real-world clinical outcomes 1 year postoperatively and delivery performance of Clareon® AutonoMe® in a Korean population.

Methods

This was a prospective, multicenter, single-arm trial assessing the clinical outcome, safety, and IOL delivery performance of Clareon® AutonoMe®. Participants attended 10 visits (7 post-implantation) over 1 year. The study endpoints were monocular BCDVA, monocular UCDVA, glistenings, surface haze, PCO and Nd:YAG capsulotomy rates, IOL tilt and decentration, safety endpoints, and a surgeon delivery system preference questionnaire.

Results

125 eyes of 85 patients were implanted (40 bilateral, mean age of 69.1 ± 6.73 years). 116 eyes (92%) completed the 1 year postoperative visit. 99.1% of eyes achieved monocular BCDVA of 0.2 logMAR or better at 1 year. Mean monocular BCDVA was 0.005 ± 0.1010 logMAR for first eyes and -0.017 ± 0.0893 logMAR for second eyes. Mean monocular UCDVA at 1 year was 0.077 ± 0.1362 logMAR for first eyes and 0.052 ± 0.1069 logMAR for second eyes. Grade 0 glistenings and no surface haze were observed at 1 year. No eyes had clinically significant PCO or a Nd:YAG capsulotomy during the duration of the study. One ocular serious adverse event (cystoid macular oedema) was reported. No tilt or decentration of the IOLs were observed in any eyes. 100% of surgeons reported “Very Easy or Easy” for incision site insertion and “very controllable or controllable” during IOL delivery.

Conclusion

The visual performance of the Clareon® IOL showed good visual outcomes at 1 year and high surgeon satisfaction for AutonoMe® in a Korean population.

Clareon® AutonoMe® **Alcon Initiated Trial (India)**

170: One-Year Clinical Outcomes and Surgeon experience with a Novel IOL Material and Delivery System in Indian Population

Jeewan S Titiyal[1], Samar Basak[2], Naren Shetty[3], Umang Mathur[4], Dandapani Ramamurthy[5]

[1]Professor & Chief, RP Centre for Ophthalmic Sciences, All India Institute of Medical Sciences (AIIMS), New Delhi; [2]Director, Disha Eye Hospital, Kolkata; [3]Head of Cataract and Refractive Lens Services, Narayana Nethralaya, Bengaluru; [4]Director, Dr Shroff's Charity Eye Hospital, New Delhi; [5]Chairman, The Eye Foundation, Coimbatore

Abstract Details

Objective

To describe one-year clinical outcomes and IOL delivery performance of Clareon® AutonoMe® in an Indian population.

Methods

Prospective, multicenter, single-arm interventional study enrolled 137 eyes implanted with a Clareon® intraocular lens using the AutonoMe® delivery device (Alcon). Subjects were adult Indians with cataract and no other ocular co-morbidity and pre-op corneal astigmatism of < 1.00D. Outcome measures were monocular BCDVA, UCDVA, MRSE, presence of surface haze and IOL glistening, PCO and Nd:YAG capsulotomy rates, and surgeon questionnaire for AutonoMe® delivery device. Follow up was performed at postoperative 1 week, 1, 6 and 12 months.

Results

137 eyes of 102 patients (34.3% bilateral; 52.3% female; mean age 59.7+/-9.28 years) completed the 1 year follow-up. At 1 year, mean BCVA and UCVA was -0.03+/-0.08 logMAR and 0.08+/-0.13 logMAR respectively. Average prediction error was 0.25+/-0.16D and 0.19+/-0.13D for first and second eyes respectively. Grade 0 glistenings were found in 100% of eyes and no surface haze were observed during the study. None of the eyes required Nd:YAG capsulotomy. Surgeons observed AutonoMe® delivery device to be more intuitive to deliver the IOL compared to a push or screw preloaded injector system, with 100% of surgeons reporting “Very Easy or Easy” IOL insertion and “very controllable or controllable” IOL delivery.

Conclusion

Excellent visual outcomes were observed with the Clareon® IOL in an Indian population, with no glistening or surface haze at one year. No case developed PCO requiring Nd:YAG capsulotomy. High surgeon satisfaction was observed with the AutonoMe® delivery device.

PanOptix®

Investigator Initiated Trial (India)

139: Clinical outcomes and patient satisfaction following bilateral implantation of the Aspheric Quadrifocal Toric IOL

Sheetal Brar

Abstract Details

Objective

To evaluate visual and refractive outcomes, patient satisfaction and the real world experience following bilateral implantation of an Aspheric Quadrifocal Toric IOL

Methods

Eligible patients underwent phacoemulsification followed by bilateral implantation of the AcrySof® IQ PanOptix® toric IOL (Alcon) for age related cataract. All eyes were targeted at emmetropia using the Barrett TK Toric formula. Postoperative examinations at 3 months included binocular photopic uncorrected & corrected distance, near (40 cm) and intermediate (60 cm) visual acuity assessment, defocus curve testing (+2 to -4 D), reading speeds at 40 & 66cm with Salzburg Reading Desk, and subjective outcomes including IOL SAT quality of vision questionnaire for patient satisfaction and spectacle independence.

Results

Thirty patients with mean age of 60±12 years were included. Three months post-op, the mean binocular photopic UDVA, CDVA, UNVA, DCNVA, UIVA and DCIVA were -0.03±0.05, -0.04±0.06, 0.02±0.09, 0.01±0.10, 0.02± 0.05 and 0.03± 0.07 logMAR, respectively. Reading performance evaluated at 40 cm and 66 cm showed mean reading speeds as 166.2± 42.7 and 164±38.4 wpm respectively(p=0.62). Mean residual sphere, cylinder and spherical equivalent (SE) were 0.02± 0.10 , 0.01±0.18, 0.03±0.14 D respectively. 93.3% (28/30) patients reported complete freedom from spectacles while working at all distances in all light conditions and rated the satisfaction after surgery as “very satisfied”. No eye required re-rotation of toric IOL or YAG capsulotomy for PCO or developed any other sight impeding complication by the end of the follow-up.

Conclusion

PanOptix® toric IOL allowed complete visual restoration with good patient satisfaction and visual quality outcomes.

PanOptix®

Alcon Initiated Trial (India)

40: Post-Operative Visual Outcomes With A Diffractive Trifocal Intraocular Lens: A Meta-Analysis Of Indian And Worldwide Patients

Dandapani Ramamurthy[1], Jessie Hull[2]

[1]The Eye Foundation, Coimbatore, Tamil Nadu, India; [2]Alcon Vision LLC, Fort Worth, TX, USA

Abstract Details

Objective

To evaluate and compare the clinical and visual outcomes in subjects implanted with a trifocal intraocular lens (IOL), the AcrySof® PanOptix® IOL Model (TFNT00) in India to those observed in patients from Europe, US, South America and Asia.

Methods

We report the results of a meta-analysis of 3 to 6 months post-operative uncorrected, best-corrected visual acuity, range of focus and low contrast outcomes from subjects implanted with the TFNT00 IOL. Our report includes the clinical outcomes obtained from prospective, controlled clinical trials that used consistent methods and techniques to evaluate visual outcomes.

Results

Data was pooled for a total of 557 subjects implanted with TFNT00; of which 53% were white, 35% were Asian, and 12% reported other races. The mean binocular defocus curve from the Indian post marketing study (N=67) at 3 months post-op indicated a visual acuity 0.1 logMAR(20/25) or better from +0.50 to -2.5D. Similarly, the pooled defocus curve indicated a VA of ≤ 0.1 logMAR from +0.5D to -3.0D at 3-6 months post-op. Indian patients reported a mean binocular UCDVA of 0.0 logMAR(20/20) and a mean binocular UCIVA and UCNVA of <0.1 logMAR at the end of 3 months. Similarly, in the pooled data with binocular uncorrected distance and intermediate (60-66cm) VAs were ~0.0 logMAR(20/20); and uncorrected near (40cm) VA was 0.05 logMAR(~20/25).

Conclusion

Visual outcomes from the India Post Marketing Study (PMS) for PanOptix® were similar to outcomes including data pooled from 4 other regions. PanOptix® provides patients continuous 20/25 or better vision from distance to near (40cm).

Financial Disclosure

Jessie Hull Alcon Vision LLC: Employee

PanOptix®

Investigator Initiated Trial (China)

257: Comparison between the visual functions of cataract patients after implantation of trifocal intraocular lens and monofocal intraocular lens.

Shuang Ni[1], Haike Guo[2]

Abstract Details

Objective

To analyze and compare the differences in visual function between cataract patients with trifocal intraocular lenses implanted in both eyes and patients with monofocal intraocular lenses implanted using the "full monovision" protocol.

Methods

A total of 60 age-related cataract patients (120 eyes) who were treated in Shanghai Heping Eye Hospital from July to December 2020 were selected as the research subjects, all of whom received intraocular lens implantation. The patients were divided into two groups: MIOL group and SIOL group There were 30 cases (60 eyes) in each group. The patients in the MIOL group were implanted with a diffractive trifocal intraocular lens (AcrySof® IQ PanOptix®) in both eyes, and the patients in the SIOL group were implanted with a monofocal intraocular lens (AcrySof® IQ) with a diopter difference of 1.75D and using the "full monovision" scheme. Six months after the operation, the visual acuity, contrast sensitivity, glasses-independent rate, wavefront aberration, and visual complications were compared between the two groups of patients.

The visual acuity examination included the distance vision of one eye and both eyes (5 m), intermediate vision (60 cm), near vision (40 cm).

Results

Compared with other eyes (the non-dominant eye of the SIOL group, the non-dominant eye and the dominant eye of the MIOL group) in the SIOL group, there was no significant difference ($P > 0.05$); the non-dominant eye in the SIOL group The near visual acuity of the uncorrected eye was significantly lower than that of other eyes (the dominant eye in the EDOF group, the non-dominant eye and the dominant eye in the MIOL group) ($P < 0.05$). Six months after the operation,28 patients in the MIOL group were completely glasses-independent, accounting for 93.3%,and 12 patients in the SIOL group were completely glasses-independent, accounting for 40%. There was a statistically significant difference between the two groups ($P < 0.05$). Six months after surgery, the contrast sensitivity of the two groups in any spatial frequency under optical conditions showed no statistically significant difference ($P>0.05$). However, under scotopic conditions, the contrast sensitivity of the SIOL group was better than that of the MIOL group in all spatial frequencies, with statistical significance ($P<0.05$). At 6 months after operation, the total higher-order aberration of patients in MIOL group was higher than that in SIOL group, and the difference was statistically significant ($P < 0.05$). The incidence of adverse visual phenomena in the SIOL group was higher than that in the MIOL group, mainly manifested as binocular simultaneous vision, fusion vision, and stereopsis were significantly weakened, and the differences were statistically significant ($P < 0.05$).

Conclusion

The monofocal intraocular lens implantation using the "full monovision" method cannot completely solve the problem of poor near vision in patients after monofocal intraocular lens implantation in the past, and the difference in binocular refraction will affect the patient's tertiary visual function. In contrast, patients with trifocal intraocular lenses implanted in both eyes achieved better glasses-independent rate and satisfactory visual quality.

PanOptix®

Investigator Initiated Trial (China)

169: Comparison Of Five Intraocular Lens Power Calculation Formulas for Panoptix® In Chinese Eyes With Normal Axial Length

Lei Wu, Fan Zhang, Yanchen Chen

Abstract Details

Introduction

How to accurately calculate the diopter of intraocular lens and select the ideal calculation formula has become the key to improve the visual quality of cataract patients. In this study, we investigated the prediction error of five IOL calculation formulas in Chinese eyes with normal axial length and implanted with PanOptix® ,so as to guide the selection of intraocular lens calculation formula and the reservation of postoperative diopter.

Objective

To evaluate the prediction error of five IOL calculation formulas (SRK/T, Holladay 2, Hoffer Q, Haigis and Barrett Universal II) in Chinese eyes with normal axial length and implanted with PanOptix®.

Methods

All patients undergoing cataract surgery with axial length (AL) of 22mm<AL<26mm. We compared the performance of each formula with respect to the refractive prediction error (RPE) and mean absolute error (MAE).

The refractive accuracy was also evaluated as number and percentage of eyes within ±0.25, ±0.50, and ±0.75 diopters (D) of RPE.

Results

1. The uncorrected distance visual acuity and corrected distance visual acuity were 0.82 ± 0.34 and 0.39 ± 0.35 logMAR at baseline, and significantly improved to 0.04 ± 0.06 and 0.03 ± 0.04 logMAR at postoperative 3 months (P < .0001).

2. As can be seen from Table1 The SRK/T showed the smallest RPE and MAE, while the Haigis showed the biggest RPE and MAE. ANOVA test showed no statistical difference (P=0.73) between the RPE measured for each formula in this cohort. However, there was significant difference in terms of MAE between the 5 formulas (P < .0001). The greatest percentage of eyes with RPE within ±0.50 D was 78.7% for SRK/T and 66% for Hoffer Q.

Conclusion

The SRK/T formula had the lowest refractive prediction error and mean absolute error for the PanOptix® in Chinese cataract patients with normal axial length.

PanOptix®

Alcon Health Economics and Outcomes Research (Global)

PP2-12: Patient-reported Visual Function and Quality of Life Outcomes with a Trifocal IOL – A Literature Review

Andrew Maxwell[1], Margaret Ainslie-Garcia[2], Mukesh Dhariwal[3], Kayla Mills[3]

[1]California Eye Institute, Fresno, California; [2]EVERSANA Life Science Services LLC. Burlington, Canada; [3]Alcon Vision LLC. Forth Worth, Texas

Abstract Details

Objective

AcrySof® IQ PanOptix® (TFNT00) is the first trifocal IOL launched in the USA in 2019. A literature review was conducted to identify recently published evidence of the patient reported outcomes (PRO) on improvement and/or satisfaction with visual function and quality of life in TFNT00 recipients.

Methods

MEDLINE and Embase congress abstract databases were searched from September-2019 to September-2021. Search terms included technology name (TFNT00, PanOptix®) and “quality of life” or “visual function”. Study design included randomized and observational clinical studies. Eight unique clinical studies were included (7 peer-reviewed publications, 1 congress abstract). PRO questionnaires used were the National Eye Institute refractive error (NEI-RE;N=1 study), the NEI-Visual Function (NEI-VF)-25 (N=2), the NEI-VF-14 (N=4), and the IOL Satisfaction questionnaire (IOLSAT;N=1).

Results

All studies using VF-14 reported mean scores of 94.9/100 or above in patients implanted with TFNT00 IOL. In studies reporting outcomes using VF-25 questionnaire, TFNT00 outperformed bilateral diffractive EDOF in one study ($p<0.05$;N=40 pts) and was comparable to mixed diffractive EDOF/bifocal in another (N=50 pts). In a prospective study, TFNT00 IOL demonstrated higher scores in 6/8 NEI-RE categories versus diffractive EDOF ($p>0.05$;N=50 pts). In an Investigational Device Exemption study, patients implanted with TFNT00 demonstrated very high satisfaction with TFNT00 (IOLSAT;N=129 pts), with >99% reporting they would implant TFNT00 again and >98% would recommend to friends or family.

Conclusion

This literature review demonstrates patients receiving TFNT00 IOL could achieve excellent visual function and vision-related quality of life outcomes. Statistical pooling of these data using meta-analytic techniques could further help to improve confidence in conclusions.

PanOptix®

Alcon Health Economics and Outcomes Research (Global)

127: Rate of Complete Spectacle Independence with a Trifocal IOL: A Systematic Literature Review and Meta-Analysis

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Abstract Details

Objective

AcrySof® IQ PanOptix® (TFNTXX/TFATXX) is the first trifocal IOL launched in the USA in 2019. A systematic literature review and meta-analysis was conducted to identify and pool published evidence on complete spectacle independence rate in patients with bilateral implantation of TFNTXX/TFATXX.

Methods

PubMed was searched from Jan-2017 to Sep-2021; congress abstract databases were also searched for recent studies not yet published in peer-reviewed journals. Search terms included technology name(TFNTXX/TFATXX/PanOptix®) and “spectacle independence” or “visual outcomes”. A Bayesian random effects meta-analysis was conducted, providing a pooled estimate (posterior median treatment effect and its 95% credible interval(CI) of complete spectacle independence rate among cataract or refractive lens exchange(RLE) surgery patients. Sub-group analyses evaluated spectacle independence across different distances (near/intermediate/far).

Results

Twenty-six unique clinical studies were identified (20 peer-reviewed publications, 6 congress presentations). Among patients who underwent cataract or RLE surgery with TFNTXX/TFATXX IOL, meta-analysis demonstrates complete spectacle independence rate of 92.8%(95% CI 0.89–0.96;N=19 studies). Sub-group analyses of pooled spectacle independence rates at each distance of near, intermediate, and far among cataract and RLE surgery patients were 92.5%, 97.2%, and 95.9%, respectively(N=17). For studies reporting on patients who underwent cataract surgery only with TFNTXX/TFATXX, complete spectacle independence rate was 91.6%(95% CI 0.87–0.96;N=13).

Conclusion

This meta-analysis demonstrates at least 9 out of 10 patients receiving TFNTXX/TFATXX IOL for cataract or RLE surgery can be expected to achieve complete spectacle independence. This study provides informative data for clinicians and patients to feel confident in using TFNTXX/TFATXX as a trifocal IOL with high rate of complete spectacle independence.

PanOptix®

Investigator Initiated Trial (Hong Kong)

109: Clinical Outcome of AcrySof® IQ PanOptix® Trifocal Intraocular Lens in Chinese Eyes

John Chang
Hong Kong Sanatorium & Hospital

Abstract Details

Methods

In this prospective study, subjects implanted with bilateral AcrySof® IQ PanOptix® Trifocal IOLs were included. Postoperative assessments included photopic and mesopic VA at distance, intermediate (60cm) and near (40cm); photopic and mesopic contrast sensitivity (with and without glare); defocus curve; questionnaire on dysphotopsia, satisfaction and spectacle independence.

Results

Mean binocular uncorrected VA at distance, intermediate (60 cm), and near (40 cm) were -0.05±0.06, 0.06±0.10, and 0.04±0.05 in logMAR, respectively. No eye lost >1 line of corrected distance VA. Contrast sensitivity was similar to the age norm. Mean halo, glare, and starburst scores were 2.4, 0.2, and 1.4 out of 5 respectively. The mean satisfaction score was 4.3 out of 5. One hundred percent spectacle independence was achieved. No IOL exchange was required. Across the defocus powers from +0.50D to -3.00D, vision was satisfactory and was better than 20/25.

Conclusion

In conclusion, AcrySof® IQ PanOptix® Trifocal IOLs were safe and effective. It offered satisfactory vision at various distances, high degree of satisfaction and spectacle independence, with minimal dysphotopsia.

PanOptix®

Investigator Initiated Trial (China)

245: Visual outcome after PanOptix implantation in high myopic patient with different Meta-PM grading fundus appearance

Hua Fan Jiasong Yang Wensheng Li
Shanghai Aier Eye Hospital

Abstract Details

Background

META-PM classification was introduced to categorize myopic retinal changes by fundus photograph from stage 0 to stage 4 (from normal myopic feature, tessellated fundus to atrophy of macular). It is well known with high myopia is associated to greater rate of postoperative complication, macular pathological changes can affect visual outcome and patient satisfaction. Visual outcome after implanting with trifocal intraocular lens (PanOptix®) in high myopic patients with different fundus META-PM grading is not studied yet.

Objective

This study is to investigate visual outcome after implantation PanOptix® in META-PM grade 0, grade 1 and grade 2 with low risk of macular pathological progression high myopic eyes.

Methods

A total of 31 eyes with high myopia (axial greater than 26mm or spherical equivalence is less than -6.00D) diagnosed as cataract were implanted with a trifocal intraocular lens (PanOptix®) in our hospital. PM macular staging is divided into three groups: META-PM 0 grade group (13 eyes), META-PM 1 grade group (10 eyes) and META-PM 2 grade group (9 eyes). The visual acuity, fundus and META-PM staging before operation, 1 day after operation, 1 week after operation and 1 month after operation were analyzed.

Results

The mean age was 55.48±11.63y. The preoperative average axial length was 26.37±1.38mm, the average spherical equivalent was -7.94±3.57, the average preoperative corrected distance visual acuity (Logmar) was 0.38±0.38. There was no statistically difference of postoperative uncorrected distance visual acuity (Logmar) (0.04±0.12 in grade 0 group, 0.09±0.16 in grade 1 group and 0.12±0.19 in grade 2 group), uncorrected intermediate visual acuity (0.07±0.14 in grade 0 group, 0.17±0.14 in grade 1 group and 0.14±0.17 in grade 2 group), and uncorrected near visual acuity (0.06±0.09 in grade 0 group, 0.19±0.158 in grade 1 group and 0.18±0.16 in grade 2 group) between the three groups(P＞0.05). One week after the operation, 2 patients developed intraocular hypertension of 21mmHg-30mmHg, and they all returned to normal after discontinuation of corticosteroids, and no other complications occurred.

Conclusion

Uncorrected distance vision of high myopia with META-PM grade less than grade 3 after trifocal intraocular lens implantation were all significantly improved compared with preoperative corrected distance vision. META-PM grade was not correlated with postoperative visual acuity after trifocal intraocular lens implantation with META-PM grade less than 3. after 1-month follow-up. Long term follow-up result needs further study.

PanOptix®

Investigator Initiated Trial (Thailand)

196: Digital Reading Performance With Diffractive Multifocal Intraocular Lenses

Thanapong Somkijrungroj[1], Thanaporn Wiriyabanditkul[1], Chotika Poolsanam[2], Waraluck Supawatjariyakul[1], Nuntachai Surawatsatien[1]

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Abstract Details

Objective

To evaluate DRP of patients bilaterally implanted with a diffractive MF-IOLs, PanOptix®.

Setting

Cataract surgery with multifocal intraocular lenses (MF-IOLs) is a common presbyopic correction with promising outcomes. Digital devices have become an essential part of the modern human lifestyle. Digital reading performance (DRP) is different from conventional paper reading in many ways, for example display polarity. We conduct this study to evaluate DRP and propose the optimized critical-print-size (CPS) and screen polarity recommendation for MF-IOLs implanted patients

Methods

Fifty-four eyes (26 participants) of bilateral MF-IOLs implantation, on the same day. The primary outcome is binocular uncorrected reading acuity measure with MNREAD® iPad App at 3 months postoperatively.

Secondary outcomes included distance binocular uncorrected visual acuity (BUCVA), intermediate (60 cm) BUCVA, near (40 cm) BUCVA at post-operative at day 1, 1 week, and 1 month, CPS with uncorrected acuity (60cm and 40 cm) at 3 months on MNREAD® iPad App.

Results

LogMAR BUCVA measure with MNREAD® iPad App at 3 months at 60 and 40 cm with positive display polarity (black-on-white background) and negative polarity (white-on-black) are -0.12, -0.09, -0.01, and 0.15, respectively. The mean digital CPS at 40 cm is 0.24.

Conclusion

Bilaterally implanted PanOptix®, shown rapid visual recovery and excellent DRP at 60 cm and 40 cm. The setting of a display screen on the digital device(s) to a positive display polarity (black-on-white) with a font size of 7 pt or larger increases the likelihood of digital reading satisfaction in bilaterally implanted in bilateral implanted MF-IOLs.

Vivity™

Alcon Initiated Trial (Global/ANZ)

145: Real World Visual Performance and Patient Satisfaction outcomes of a novel wavefront-shaping Presbyopia-Correcting Toric IOL

Armand Borovik[1], Alan Flax[1], Lily Yu-Li Chang[2], Caridad Perez-Vives[2]

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Abstract Details

Objective

To report real-world outcomes on visual acuity, refractive, patient reported outcomes and safety from an ambispective Registry study conducted in Europe, the UK, Australia, and New Zealand with the wavefront-shaping presbyopia correcting Toric IOL, AcrySof® IQ Vivity™ Toric IOL (models DFT215, DFT315, DFT415, and DFT515).

Methods

This is a sub-analysis of the second interim dataset, where 256 subjects were implanted with the toric version of the AcrySof® IQ Vivity™ IOL. After approximately 3 months follow-up per local clinical practice standards, subjects underwent visual acuity assessments at distance, intermediate (66 cm) and near (40 cm) distances. Residual refractive error, subject satisfaction, and spectacle independence recorded via validated questionnaires, as well as visual disturbances are also reported.

Results

In this ongoing trial, we have so far recruited 256 subjects implanted with AcrySof® IQ Vivity™ IOL, and the subjects achieved binocular mean logMAR (SD) UCDVA 0.022 (0.107) ; UCIVA 0.086 (0.116) and UCNVA 0.252 (0.159). 83% of all eyes had ≤ 0.50 D of manifest refractive cylinder after surgery. 88.0% of subjects reported rarely or never needing glasses at arm's length (bright lighting) and 90.9% are satisfied with their sight. No halos, glare and starburst were reported by 91.4%, 90.9% and 95.5% of subjects, respectively.

Conclusion

In this assessment of subjects implanted with AcrySof® IQ Vivity™ IOL, we observed good distance, intermediate and functional near vision. Subjects also reported high levels of satisfaction with their vision, good levels of spectacle independence and low levels of visual disturbances.

Financial Disclosure

Dr. Armand Borovik	Alcon
Dr. Alan Flax	Alcon
Lily Yu-Li Chang, PhD	Alcon Vision LLC: Employee
Caridad Perez-Vives, PhD	Alcon Vision LLC: Employee

Vivity™

Alcon Initiated Trial (Global/ANZ)

138: Real-world visual outcomes of a novel presbyopia-correcting IOL with wavefront-shaping technology implanted in patients with previous corneal refractive surgery

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[1]Vision Eye Institute, Chatswood, Sydney, Australia, University of Sydney Medical School; [2]Alcon Vision LLC, Fort Worth, TX, USA

Abstract Details

Objective

A multicentre, ambispective registry study was conducted to investigate real-world visual outcomes in subjects bilaterally implanted with AcrySof® IQ Vivity™ presbyopia-correcting IOLs (models DFT015 and DFTX15-Toric). Here, we report outcomes for the subgroup with previous corneal refractive surgery.

Methods

Binocular distance, intermediate (66 cm), and near (40 cm) uncorrected and corrected visual acuities (UCDVA/BCDVA, UCIVA/DCIVA and UCNVA/DCNVA), as well as satisfaction, spectacle independence and visual disturbances, were evaluated ~3 months post-implantation.

Results

To date, 29 subjects with prior corneal refractive surgery have been implanted with DFT015 or DFTX15-Toric IOLs. At 3 months, those with previous myopia-correcting corneal refractive surgery (n=23) achieved binocular mean logMAR (standard deviation) UCDVA of 0.092 (0.158), UCIVA 0.074 (0.078) and UCNVA 0.211 (0.181). Similarly, binocular mean UCDVA was 0.106 (0.140), UCIVA 0.043 (0.168) and UCNVA 0.173 (0.145) in subjects with previous hyperopia-correcting corneal refractive surgery (n=6). Both subgroups achieved a mean BCDVA of 20/20, DCIVA 20/25 and DCNVA 20/32–20/40. Most subjects (post-myopic: 91.3%, 87.0% and 91.3%, and post-hyperopic: 83.3%, 100% and 100%), reported no halos, glare or starbursts, respectively. Over 50% of subjects never or rarely needed to wear spectacles for distance or intermediate tasks, and 82.6% and 100% of those with post-myopic and post-hyperopic refractive surgery, respectively, were satisfied with their sight.

Conclusion

This real-world assessment of subjects with previous corneal refractive surgery and bilaterally implanted with DFT015/DFTX15-Toric IOL showed good distance, intermediate and functional near visual outcomes, as well as high satisfaction and low levels of visual disturbances.

Financial Disclosure

M Lawless	Consultant for Alcon, consultant for Carl Zeiss
L Chang	Alcon employee
C Perez-Vives	Alcon employee

The study was sponsored by Alcon Vision, LLC.

Vivity™

Alcon Initiated Trial (Global/ANZ)

150: Real-world visual performance of a novel presbyopia-correcting IOL with wavefront-shaping technology implanted in patients with dry eye

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[1]Hobart Eye Surgeons, Hobart, Tasmania, Australia; [2]Alcon Vision LLC, Fort Worth, TX, USA

Abstract Details

Objective

A multicentre, ambispective registry study was conducted to investigate the real-world clinical visual outcomes in subjects bilaterally implanted with AcrySof® IQ Vivity™ extended depth-of-focus IOLs (models DFT015 and DFTX15-Toric). Here, we report the outcomes for the subgroup with dry eye.

Methods

After a minimum of 3 months follow-up, binocular uncorrected and corrected visual acuities at distance (UCDVA, BCDVA), intermediate (UCIVA, DCIVA; 66 cm) and near (UCNVA, DCNVA; 40 cm) were measured. Spectacle independence, patient satisfaction and visual disturbances were also evaluated.

Results

To date, 66 patients with dry eye have been implanted bilaterally with DFT015 or DFTX15-Toric IOLs. At the study entry visit (~3 months), binocular mean logMAR (standard deviation) UCDVA was 0.026 (0.118), UCIVA 0.088 (0.132) and UCNVA 0.222 (0.150). Similarly, binocular mean BCDVA was -0.022 (0.082), DCIVA 0.092 (0.129) and DCNVA 0.260 (0.133). The majority of subjects never or rarely needed to wear spectacles for distance or intermediate tasks (≥84.6% and ≥69.2% in bright and dim conditions, respectively). High levels of satisfaction were observed, with 78.4% of subjects reporting that they were satisfied with their sight. In addition, no halos, glare or starbursts were reported by 90.8%, 93.8% and 92.3% of subjects, respectively.

Conclusion

In this study, subjects with dry eye bilaterally implanted with DFT015 or DFTX15-Toric IOLs achieved good distance, intermediate and functional near vision. Subjects in this subgroup also reported good levels of spectacle independence, high levels of satisfaction with their vision, and low levels of visual disturbances.

Financial Disclosure

P McCartney Alcon
L Chang Alcon employee
C Perez-Vives Alcon employee

The study was sponsored by Alcon Vision, LLC.

Vivity™

Alcon Initiated Trial (Global/ANZ)

147: Real World Visual Performance and Patient Satisfaction outcomes of a novel wavefront-shaping Presbyopia-Correcting IOL in Cataract patients

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[1]The University of Sydney, Save Sight Institute, Sydney, New South Wales, Australia; [2]Alcon Vision LLC, Fort Worth, TX, USA

Abstract Details

Objective

This is a sub-analysis of a multi-country, ambispective registry study conducted in Europe, the UK, Australia, and New Zealand to report real-world clinical visual outcomes of a wavefront-shaping Presbyopia Correcting IOL, AcrySof® IQ Vivity™ (models DFT015, DFT215, DFT315, DFT415, DFT515) in cataract patients.

Methods

After approximately 3 months follow-up (defined by local clinical practice standards), visual performance was evaluated based on visual acuity at distance, intermediate (66 cm) and near (40 cm). Non-prompted visual disturbances interview, subject satisfaction, and spectacle independence recorded via validated questionnaires are also reported. This is the second interim analysis of 674 cataract subjects bilaterally implanted with the AcrySof® IQ Vivity™ and/or Vivity™ Toric IOL.

Results

In this ongoing trial, we have so far recruited 674 cataract patients bilaterally implanted with AcrySof® IQ Vivity™ or Vivity™ Toric. Binocular mean±SD UCDVA was 0.016±0.104 logMAR, UCIVA was 0.088±0.119 logMAR, and UCNVA was 0.253±0.157 logMAR. No halos, glare and starburst were reported by 92.3%, 93.1%, and 95.5% of the patients respectively. >80% of patients reported never or rarely needing glasses to see at arm's length and far away. Patient satisfaction with sight was high, with 92.3% reporting satisfied with their sight.

Conclusion

This real-world assessment of cataract patients bilaterally implanted with AcrySof® IQ Vivity™ and/or Vivity™ Toric IOL has shown good distance, intermediate and functional near visual outcomes, as well as high patient satisfaction and low levels of visual disturbances.

Financial Disclosure

Prof. Gerard Sutton	Alcon (clinical trial investigator)
Novartis Chris Hodge PhD	None
Lily Yu-Li Chang, PhD	Alcon Vision LLC: Employee
Caridad Perez-Vives, PhD	Alcon Vision LLC: Employee

Vivity™ & Vivity™ Toric **Investigator Initiated Trial (India)**

137: Evaluating the clinical outcomes of a wavefront-shaping presbyopia-correcting IOL post bilateral implantation in an Indian population

Sudipto Pakrasi, Careen Pakrasi

Abstract Details

Objective

To evaluate the clinical performance of wavefront-shaping presbyopia-correcting IOL upto 3 months post bilateral implantation in a real world setting through routine clinical practice.

Methods

An ambispective observational study was conducted on 50 participants who underwent bilateral implantation of a novel wavefront-shaping presbyopia-correcting IOL (toric & non-toric included). Following were evaluated binocularly 1 and 3 months following second eye surgery: unaided and distance corrected near visual acuity at 40 centimetres, unaided and best corrected distance visual acuity at 6 metres, unaided and distance corrected intermediate visual acuity at 66cm, binocular Defocus curve performance (3rd month), and binocular Contrast Sensitivity testing (3rd month) after 2nd surgery.

Friedman test was used for visual acuity comparison wherein $p \leq 0.05$ indicated statistical significance.

Results

Ongoing trial, results to be updated. At 3 months, around 84% of subjects achieved UCDVA greater than or equal to 6/6, around 100% of subjects achieved UCIVA greater than or equal to N10(corresponds to 6/7.5) at 66cm, and 72% subjects achieved UCNVA greater than or equal to N6 (corresponds to 6/12) at 40cm.

Conclusion

Bilateral implantation of wavefront-shaping IOLs provided a range of vision from distance to functional near in a majority of the patients in a real world setting.

LenSx®

Alcon Health Economics and Outcomes Research (Global)

FP1-07: Cataract surgery complication rates in residency programs: A targeted literature review

Henderson BA[3], Pan SJ[1], Zhou A[2], Duperrouzel C[2], Hsiao C[1]

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Abstract Details

Objective

A targeted literature search was conducted to contrast overall complication rates and complication rates in complex patient cases for residents-in-training and experienced surgeons. Manual and femto-second laser-assisted cataract surgeries (FLACS) were reviewed.

Methods

PubMed database was searched August 2020 utilizing cataract surgery OR phacoemulsification AND residency terms, search was limited to last 10 years. Conference abstracts published by ESCRS, AAO, and ASCRS over the last three years were screened.

Results

Twelve studies (1 prospective and 11 retrospective; 6 single-arm and 6 comparative) reported most common complication rates for manual surgery and/or FLACS. Three of twelve studies reported higher overall intraoperative complication rates for residents versus attendings performing manual surgery, two of the three studies showed statistically significant difference. Residents had similar rates of intraoperative complications between FLACS and manual cataract surgery (n=3, comparative). Eight single-arm studies (1 prospective, 5 retrospective, and 2 not reported) reported complex cases complication rates. Two of the eight studies reported higher complication rates for residents versus attendings in complex cases performing manual surgery, one of the two studies showed a statistically significant difference. Complex case complication rates may be lower for residents using FLACS compared to manual surgery (n=5, single-arm).

Conclusion

Complications were more likely to occur during surgery performed by a resident than by an experienced surgeon in both overall and in complex cases for manual surgery. Single-arm studies suggest technologies such as FLACS may be helpful in lowering complication rates in complex cases for trainees in residency programs. Comparative studies are required to confirm this finding.

NGENUITY®

Investigator Initiated Trial (India)

142: NGENUITY® 3D-Visualisation system versus standard operating microscope: Results of a visual comfort and anatomical outcomes for phacoemulsification cataract surgery

Naren Shetty

Abstract Details

Objective

To evaluate the ease of visualization and comfort as perceived by surgeons during phacoemulsification cataract surgery using NGENUITY® 3D-Visualization system (N3D) versus standard operating microscope (SOM).

Methods

In this prospective, randomized controlled study, patients between 40–70 years were enrolled for phacoemulsification (axial length 21.00 mm to 25.00 mm) performed by 5 surgeons. Post-surgery, the surgeons filled a novel Surgeon's Comfort Score. Patients were evaluated on the first postoperative day. The primary effectiveness endpoint included evaluation of ease of visualization as perceived by the surgeon while performing phacoemulsification.

Results

224 eyes (including 50 mature cataracts) were divided into two arms (N3D and SOM) with 87+25 mature cataract eyes in each. The surgeons' ease of visualization between N3D and SOM groups was similar (96.4% versus 100%; P=0.088). No significant difference was observed between both groups with regard to surgeons' ease of visualization during capsulorrhexis (97.3% versus 97.3%) and the irrigation aspiration step (96.4% versus 99.1%). Patients from N3D versus SOM had less anterior chamber flare (13.4% versus 21.4%; P=0.02). Neck comfort and comfort of the surgeon with brightness of surgical field was greater for surgeons operating on N3D as compared to SOM (P=0.003 and p<0.001). Comfort with the brightness of surgical field was lower due to increased surgical field illumination for surgeons operating on SOM as compared to N3D(p<0.001)

Conclusion

N3D and SOM provided comparable ease of visualization and surgical comfort to surgeon doing phacoemulsification. N3D provides better neck comfort to surgeons and better comfort with brightness of surgical field.

Hydrus®

Alcon Initiated Trial (APAC)

186: 5-Year results from a multicenter, randomized comparison of cataract surgery combined with schlemm's microstent to cataract surgery alone

Bobby Ang

Abstract Details

Objective

Assess 5-year outcomes of Hydrus® Microstent treatment in mild to moderate POAG with cataract.

Methods

556 eyes were randomized after phacoemulsification 2:1 to microstent implantation (HS) or no additional treatment (CS).

Results

443/556 eyes (80%) completed 5 year follow up. HS eyes were medication free more frequently (66% vs. 46%, p<0.001) and maintained a greater reduction in medication free IOP vs. baseline (8.3±3.8 vs. 6.5±4.0 mmHg, p<0.001). HS eyes had a lower risk of further incisional glaucoma surgery (2.5% vs. 6.4%, p=0.022, log rank test). Central endothelial cell density (ECD) was 2086±519 cells/mm2 at 3 months and 1967±522 at 5 years in HS (Δ= -119 cells/mm2, p =0.99).

Conclusion

At 5 -years, HS eyes maintain lower IOP and medications and required further surgery less often compared to CS. There was no significant postoperative ECD loss in the HS group from 3 to 60 months.

Vision Care

OCULAR HEALTH

Kynex 3®

Kynex 3®

Investigator Initiated Trial (Korea)

301: A prospective, crossover, randomized, double-blind clinical study comparing effects and discomfort of Kynex 1® and Kynex 3® in patients with dry eye syndrome

Seong Jae Kim

Abstract Details

Objective

To report the clinical effect and discomfort level of applications of Kynex 1® (0.1% hyaluronic acid (HA)) and Kynex 3® (0.3% HA) for the treatment in patients with dry eye syndrome.

Methods

Patients over 19 years of age with DED level 2 or higher, corneal fluorescein staining (CFS) score >1, and tear break-up time (TBUT) <10 s were included. Sixty patients were randomly assigned to the Group 1 and 2. Patients in group 1 were instilled with 0.3% HA four times a day for 4 weeks, and then 0.1% HA four times a day for the next 4 weeks. Group 2 patients instilled the eye drops in the reverse order of group1. Patients were evaluated using the ocular surface disease index (OSDI), CFS and conjunctival fluorescein stain score, TBUT, SPEED questionnaire and blurring/discomfort after application at baseline, 4 weeks, and 8 weeks.

Results

There was no difference in the severity of dry eye disease between the two group sat baseline. There was improvement in TBUT and Schirmer test in group 1 than in group 2, but there was no statistical significance between two groups. There was no difference between the two groups in the questionnaire evaluation including blurred vision, foreign body sense and burning sensation.

Conclusion

Compared with Kynex 1®, there was no difference in discomfort during instillation of Kynex 3®, and it was not statistically significant in the clinical efficacy of dry eye syndrome.

Alcon

SEE BRILLIANTLY

NOTE: Hydrus® is not currently registered in Korea

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