NCC 'Beyond 2020' Poster Abstracts
Free poster sessions
Sunday, March 15, 2020 13:30 – 14:30
Netherlands, Veldhoven, de Koningshof, Diezezaal
Organization Section: NCC/ BCLA
Moderator: Kathrin Stork & Jill Woods

Poster Number: 01
Presentation time: 13:30-13:04
Comparison of Two Lens Materials and their Effects on Corneal Hypoxia in Scleral Lens Wear Over Time – A Pilot Study
Langis Michaud, Gabriella Courey, Marie-Michele Dupuis, Patrick Simard
Purpose: To compare the impact of different scleral lens materials on oxygen delivery to the cornea.
Method: Prospective, randomized, masked study where participants were fitted in scleral lenses with a 400um-tear reservoir made of 2 different lens materials (Contamac,UK): L1-Rofuflocon D(Dk=100);L2-Tisilfocon A(Dk=200). Each participant was randomly assigned to wear L1/L2 for 6 hours and returned on a second day for the other pair. Lenses were worn at the same time of day to avoid diurnal corneal variation. Anterior segment OCT (Optovue, Clarion) was taken at baseline, lens insertion, 45, 90, 120, 240, 360mins and after lens removal. Central corneal thickness(CCT), tear film reservoir thickness(TFRT) and the system's Dk/t was documented at every timepoint and analyzed using a repeated measures ANOVA (SPSS 24). A paired t-test was used to analyze the difference between L1 and L2. Only the results from OD were analyzed.
Results: Two subjects (F, 24.5 +/-0.5 years old) completed the study. The TFRT of L1 and L2 significantly decreased (p=0.022), by 88.50 um (L1) and 120.50 um (L2) over 360 minutes. There is a significant difference between the CCTs of L1 and L2 (p=0.664). For L1, CCT increased immediately at lens insertion (0.4% compared to baseline), reaching 3-4% swelling after 45mins and did not vary significantly thereafter (p=0.284). CCT did not increase for L2 at any timepoint; after 6 hours. The Dk/t increased significantly over time for both lenses (L1: t0=10.86+/-0.97; t360=12.45□0.28, L2: t0=12.38□3.54; t360=16.02+/-0.95, p=0.015), second to a lower fluid reservoir thickness. This lower TFRT contributes to a lower hypoxic response by 1% (L1) to 1.25% (L2). Values were found significantly different between L1 and L2 (final mean Dk/t at 6 hours: L1=12.45±0.28, L2=16.02±0.95).L2's effect increases over time; as CCT increased for L1, L2's CCT remained constant and therefore the difference between the two increased with time.
Conclusions: This pilot study suggests that higher DK material is associated with a significant reduced hypoxic stress to the cornea, over 6 h00 of scleral lens wear. Future works are needed to confirm if higher DK material may become the norm to prescribe scleral lenses whenever lowering hypoxic stress to the cornea is required.
Research funding received: Nono

Poster Number: 02
Presentation time: 13:33-13:38
Factors associated with central corneal thickness changes after crosslinking combined with photorefractive keratectomy
Lacey Haines, Olivera Kralj, Sebastian Marschall, Ahmed Gawish, Paul Fieguth, Neera Singal, Hall Chew, David Rootman, Allan Slomovic, Wendy Hatch, Kostadinka Bizheva, Luigina Sorbara
Purpose: The purpose of this study is to investigate changes in epithelial thickness (ET) and total corneal thickness (TCT) one year after crosslinking surgery combined with photorefractive keratectomy (CXL+PRK) and whether these changes are related to post-operative visual and refractive outcomes.
Method: 10 eyes with keratoconus from 10 subjects were imaged with a Scheimpflug topographer and a research grade swept-source optical coherence

tomographer (SS-OCT) no more than one month prior to receiving CXL+PRK surgery and again one year later. The pre-operative thicknesses of the cornea and epithelial layer at the point of minimum total corneal thickness were acquired from the SS-OCT images using custom processing software. Regression analysis was used to explore associations with corneal thickness changes and visual and refractive outcomes one year after surgery.

Results: The mean pre-operative corneal ET (54.5 ± 3.4µm) was not significantly different than the ET at the one year follow-up (54.3 ± 5.0µm; p=0.46). The average pre-operative TCT (478.0 ± 33.2µm) was significantly greater than the same measurement one year later (438.5 ± 15.4µm; p=0.00065). Individual data demonstrated both increases and decreases in ET and TCT measurements, with changes up to 17% for some participants. Changes in ET were significantly associated with changes in best corrected spectacle acuity (R2=0.42; p=0.043) and coma (R2=0.75; p=0.0012), but not changes in refractive error (p>0.05). Changes in TCT were not significantly associated with changes in VA, coma or refractive error (p>0.05 for all).

Conclusions: Mean central TCT measurements were significantly less at the one year follow up but ET did not show a significant change. Both increases and decreases in individual thickness data were observed. Only changes in ET were significantly correlated with changes in VA and coma such that thickness changes were inversely proportional to VA changes and directly proportional to changes in coma.

Research funding received: This research was supported by grants from the Natural Sciences and Engineering Research Council of Canada (NSERC) and Canadian Institutes of Health Research (CIHR)

Poster Number: 03
Presentation time: 13:38-13:42

Non-invasive tear break-up time on six types of daily disposable contact lenses after 10 hours of wear.

Tomy Lo, Osbert Chan, Bill Reindel, Rob Steffen

Purpose: Maintaining a persistent tear film over the surface of a contact lens is an important factor for successful contact lens wear. The chemistry of the lens material can play an important role in stabilizing tears. This study aims to evaluate the Non-invasive tear break up time (NIBUT) of 6 types of daily disposable contact lenses commonly available in the market after 10 hours of wear.

Method: Twelve CL wearers were masked and randomly assigned to wear one pair of study lenses per day on 6 individual days. The study lenses included delefilcon A (DT1), etafilcon A (AVM), nelfilcon A (DAP), nesofilcon A (BOD), senofilcon A (AO), and somofilcon A (Cl1). After 10 hours of lens wear, subjects returned to the clinic and NITBUT was measured objectively using an automated instrument called Oculus Keratograph 5M with infrared illumination. The "average" NITBUT representing the average time for the tear to break in all 4 segments on the surface of the lens was recorded. Five measurements were taken on NITBUT, the highest and the lowest values were excluded from analysis and the remaining 3 values were averaged to obtain the mean NITBUT for each subject/lens combination.

Results: The mean "average" NITBUT value was 13.71 ± 1.80 sec for DT1, 13.63 ± 1.96 sec for AVM, 12.55 ± 2.50 sec for DAP, 18.86 ± 3.52 sec for BOD, 14.13 ± 3.2 sec for AO and 12.09 ± 2.32 sec for Cl1. Normality tests showed that the data appeared to be normally distributed. One-way ANOVA with post-hoc Tukey HSD Calculator showed that the "average" NITBUT amongst all groups was significantly different (p<0.0001). Post-hoc analysis (with Scheffé, Bonferroni and Holm multiple comparison tests) shows that the "average" NITBUT value for BOD

was significantly better than all other 5 types of lenses.
Conclusions: The daily disposable lenses evaluated in this study represent 6 unique material chemistries. Tear break up in all 4 segments of the pre-lens surface can impact comfort and visual outcomes of the lens wearer after 10 hours of lens wear. The nesofilcon (BOD) lens provided more stable pre-lens tear film as evidenced by the NITBUT measured across all 4 segments of the pre-lens surface.
Research funding received: All authors are employees of Bausch and Lomb

Poster Number: 04
Presentation time: 13:42-13:46
Time recording of different working steps during the fitting process in high-volume contact lens practices in Germany
Kathrin Stork, Gunther Oesker, Wolfgang Sickenberger
Purpose: N/A
Method: N/A
Results: N/A
Conclusions: N/A
Research funding received: N/A

Poster Number: 05
Presentation time: 13:46-13:50
Clinical lens fit characteristics of a new silicone hydrogel daily disposable and two commercially available daily disposable contact lenses
Lakshman Subbaraman, Katie Gilbert Spear, Anne Brobst, Stacie Cummings
Purpose: A new silicone hydrogel (SiHy) contact lens (verofilcon A; 51% water content) with "SmartSurface" has been developed. The intent of these studies was to assess contact lens fit characteristics of a new SiHy daily disposable (verofilcon A) and commercially available HEMA-based (etafilcon A) and SiHy (somofilcon A) daily disposable contact lenses.
Method: Two pilot studies were conducted; 22 subjects completed the three site, prospective, randomized, double-masked, parallel crossover study investigating verofilcon A and etafilcon A (pilot study 1). 21 subjects completed the one site, prospective, randomized, double-masked, parallel crossover study investigating verofilcon A and somofilcon A (pilot study 2). In both studies, lenses were worn bilaterally for 7–10 days. At the end of the wearing time, outcomes included contact lens fit characteristics defined by lens movement (5-point scale; -2 = unacceptable tight; +2 = unacceptable loose) and centration (3-point scale; 0 = optimal; 1 = acceptable decentration; 2 = unacceptable decentration).
Results: 22 subjects (63.6% female; mean age: 30.9 years; range: 18-56 years completed study 1. 21 subjects (63.6% female; mean age: 32.1 years; range: 19-43 years) completed study 2. For study 1: lens movement and centration (44 eyes) was optimal to acceptable in verofilcon A (movement = 88.6% optimal; centration = 81.8% optimal) and etafilcon A (movement = 79.5% optimal; centration = 70.5% optimal) at the end of the wearing period. For study 2: lens movement and centration (42 eyes) was optimal to acceptable in verofilcon A (movement = 85.7% optimal; centration = 90.5% optimal) and somofilcon A (movement = 79.5% optimal; centration = 61.4% optimal) at the end of the wearing period.
Conclusions: In this pilot study, good on eye lens fit characteristics were observed with the new silicone hydrogel daily disposable (verofilcon A) contact lens based on lens movement and centration.
Research funding received: Study sponsored by Alcon

Poster Number: 06
Presentation time: 13:46-13:50
Reaction of spectacle wearers to senofilcon A with photochromic additive
John Buch, David Ruston, John Meyler, Jessica Cannon
Purpose: To investigate subjects' reaction to a senofilcon A contact lens containing a photochromic additive in a cohort of

spectacle wearers over a 4-week trial period.
Method: 129 subjects new to contact lens wear were recruited in 11 investigational sites in the US. Subjects that passed the baseline and eligibility criteria were fit bilaterally with the study lens, obtained insertion and removal (I&R) training, and wore the lenses as daily wear reusable for one month. Follow-up visits occurred at 1-week, 2-weeks (lenses replaced), and at 4-weeks after the initial dispensing. Safety evaluations such as symptoms, fit acceptability and biomicroscopy occurred at each visit. Following the 4-week visit, subjects were placed back into their up-to-date habitual spectacles for one week and evaluated their experience of wearing the study lens compared to their current habitual spectacles.
Results: Of the 129 subjects enrolled, 105 completed the study per protocol (average age 25.5 +/- 5.9, 57.1% female, 80.0% Caucasian). There was one ocular adverse event reported that was not related to the study lens. All lenses were judged to have an acceptable physical fit. After returning to their habitual spectacles, subjects' responses of the contact lenses towards their habitual spectacles was assessed. The top-two-box subjective responses included: 80% agreed the contact lens met the needs of an active lifestyle, 62% experienced less squinting (versus 18% in spectacles), 66% bothered less by bright light (versus 4% in spectacles), and 92 % would want to continue to wear the contact lens on their own or in combination with their spectacles.
Conclusions: This study evaluated the senofilcon A with photochromic additive contact lens in a spectacle wearing population. Subjects demonstrated strong positive opinions and a high retention rate for the senofilcon A with photochromic additive contact lens when compared to their up-to-date spectacles.
Research funding received: Study sponsored by Johnson & Johnson Vision

Poster Number: 07
Presentation time: 13:54-13:58

Assessing the Clinical Performance of a New Daily Disposable Silicone Hydrogel Contact Lens

Lakshman Subbaraman, Stacie Cummings, Brad Giedd, Christopher Pearson

Purpose: To assess the clinical performance of a new daily disposable (DD), silicone hydrogel contact lens made from verofilcon A material.
Method: In this United States multisite study of 105 completed subjects, 69 subjects wore bilaterally the new verofilcon A contact lenses. The study contact lenses (verofilcon A) were evaluated in terms of distance visual acuity (VA), subjective acceptance and lens fit characteristics. The DD lenses were provided in -1.00 D to -6.00 D power in 0.25 D increments. For 3 months (-2/+5 days), lens performance was assessed in a subject-masked, randomized, parallel group safety and efficacy study design. Subjective ratings were recorded at the follow-up visits on a 10-point continuous scale with extreme anchors (1= poor/difficult to 10 = excellent/easy). Lens fit characteristics were recorded in terms of centration and overall fit.
Results: At the 3 month follow up visit, >95% of the eyes wearing verofilcon A contact lenses had distance VA of 20/20 or better. The subjective overall comfort, often key to the success of contact lenses, demonstrated very good performance with a mean overall comfort rating of 9.5. Overall handling and vision were also rated highly; overall handling: 9.2 and overall vision: 9.4. Lens fit was assessed as optimal fit/movement in 89.9% of cases and never rated as unacceptably tight or loose. Further, lens centration was assessed as optimal in 95.7% of verofilcon A lenses.
Conclusions: The unique material features, advanced surface technology, and optimal lens fitting characteristics of the new lenses tested contribute to a high level of satisfaction by lens wearers in

visual acuity, comfort and ease of handling.
Research funding received: Study sponsored by Alcon

Poster Number: 08
Presentation time: 13:58-14:02
Effects of different hydrogel materials on tear osmolarity of contact lens wearers
Francesca Treso, Giancarlo Montani
Purpose: To investigate the effects of contact lenses in omafilcon A and methafilcon A materials on tear osmolarity of contact lens wearer with moderate symptoms of dry eyes.
Method: For the study were selected 50 contact lens wearers between 18 and 36 years of age with moderate symptoms of dry eye evaluated with the OSDI questionnaire. The subjects presented a refractive error similar in both eyes and included between -1,00D and -4,00D to maintain a similar thickness of CLs tested. After three days of wash out from habitual contact lens used tear osmolarity was evaluated using the TearLab™. Afterward on the right eye of all patients was fitted a lens in Omafilcon A material (Hema+PC) with a hydration of 62% and in the left eye a lens in Methafilcon A material (Hema+MMA/EGDMA) with a hydration 55%. After a minimum of 7 hours of use, before remove the lenses tear osmolarity was measured again the in both eyes.
Results: The tear film osmolarity in right eyes was 332,93±8.18mOsm/L (mean±SD) before contact lens fitting and was not significant different (p=0.114) with the use of Omafilcon A contact lens (337,86±0.452mOsm/L). The tear film osmolarity in left eyes was 332,46±6.54mOsm/L before contact lens fitting and was significant different (p<0.001) with the use of Methafilcon A contact lens (352,4±11.63mOsm/L).
Conclusions: This study show that the lenses in methafilcon A have significant increase of the tear film osmolarity than lenses in omafilcon A contact lens wearer with moderate symptoms of dry eyes. The measure of tear film osmolarity can help to prevent the effect of soft contact lens material on tear film and can help the practitioner to identify the material that introduce its lower modification.
Research funding received: N/A

Poster Number: 09
Presentation time: 14:02-14:06
Satisfaction of habitual wearers of reusable multifocal lenses when refitted with a daily disposable, silicone hydrogel multifocal lens
Jill Woods, Sarah Guthrie, Jalaiah Varikooty, Lyndon Jones
Purpose: Visual performance with multifocal contact lenses (MFCL) can vary with lens design. This study simulated a real-world refit of habitual wearers of reusable MFCL with a silicone hydrogel (somofilcon A), daily disposable multifocal (DDMF) lens to assess visual and overall experience with the new design and modality.
Method: Subjects rated the DDMF and compared it with their habitual reusable MFCL. The habitual MFCL prescription was not reviewed or confirmed as optimal, though all reported having an eye-examination within 2-years. Subjects were masked to the DDMF brand. After 2 weeks of daily wear with the new lens, subjects reported their experience using 0-10 ratings and Likert scales.
Results: Twenty-eight subjects, spanning 14 habitual lens brands, completed the study. Visual acuity with DDMF was statistically better than with habitual MFCL for all four distances measured (all p<0.05); distance (≥6m): -0.04±0.09, long intermediate (1.5m): -0.11±0.11, short intermediate (0.75m): -0.10±0.09, and near (0.4m): 0.02±0.09. Subjective vision clarity was statistically better with the DDMF for distance tasks in the dark, long intermediate tasks, and when considering all visual needs (all p<0.05). There were no statistical differences (all p>0.05) for vision clarity performing tasks at distance, short intermediate and near. When asked for a preference, the DDMF was

significantly preferred over habitual for long intermediate tasks (p=0.03), but not different for tasks at other distances. Ease of insertion was statistically better with the DDMF (p=0.03); ease of removal was not different. End of day comfort was not different from the habitual lenses (p=0.10), however the DDMF was rated better for end-of-day dryness (p=0.01) and overall satisfaction with lenses (p=0.04).
Conclusions: This daily disposable, silicone hydrogel (somofilcon A), multifocal lens provided good vision and overall performance. Many ratings showed it to provide statistically better performance than their habitual reusable MFCL, supporting the benefits of a trial wear period.
Research funding received: Research funding was provided by CooperVision

Poster Number: 10
Presentation time: 14:06-14:10
New and habitual wearer experience with a silicone hydrogel reusable multifocal contact lens in France
Marcella McParland, Sebastien Talandier, Anna Sulley
Purpose: While studies on multifocal contact lenses (MFCLs) demonstrate objective performance, wearer experience in their habitual environment is also an important measure of satisfaction, and vision is an important factor in new MFCL wearer success. A large scale, multi-centre assessment was conducted to assess patient experience with a reusable, silicone hydrogel MFCL when used in a practice setting, and to compare the findings between new (NW) and habitual (HW) wearers.
Method: The in-practice survey was conducted at 121 sites with French ophthalmologists fitting Biofinity Multifocal (comfilcon A, CooperVision) to suitable patients (NW or HW) as per their routine procedure (March-July 2019). Overall satisfaction, comfort and vision were evaluated with wearer surveys during fitting and 1-week follow-up visits. Data were collated and analysed by an independent market research agency.
Results: A total of 1016 wearers (632 NW, 384 HW) were fitted with an 83% success rate, with no difference between groups (p=0.502). Overall vision quality was rated very good/good in 79%; distance vision quality rating was 75% and near vision quality 76%. Overall vision quality was higher for HW versus NW (83% vs. 77%, p=0.028). 89% wearers rated comfort throughout the day as very good/good (p=0.210), and high levels of end of day comfort were scored by 84% of wearers, with no significant difference between groups (p=0.309). Overall satisfaction was high (78%). 75% said they would be likely to continue wear (NW 75%, HW 73%). The majority (98%) of ophthalmologists were satisfied with the CL and 87% would recommend it to peers.
Conclusions: Success rates and satisfaction were good with the MFCL, with no significant differences in experience with comfort, vision and overall satisfaction between NW and HW, except for overall vision quality which was higher with HW. This highlights the need to address neophyte needs and expectations with vision performance and ensure good communication to enhance success.
Research funding received: This is a research survey sponsored by CooperVision

Poster Number: 11
Presentation time: 14:10-14:14
RAMAN SPECTROSCOPY ON TEARS OF HEALTHY SUBJECTS vs TEARS OF SUBJECTS AFFECTED BY AMYOTROPHIC LATERAL SCLEROSIS
Alessandro Duse, Fabio Pezzoli, Fabrizio Zeri, Federica Cozza, Christian Lunetta, Silvia Tavazzi
Purpose: To characterize the tear composition by Raman spectroscopy looking for Amyotrophic Lateral Sclerosis (ALS) biomarkers.
Method: Raman spectroscopy was used to analyse tears of nine healthy subjects

(CTRL group, 57±10 years, 5 males) and tears of thirteen ALS patients (ALS group, 65±14 years, 8 males). A few microliters of tear were extracted from each subject with a capillary tube, the drop was deposited on a BaF2 substrate, and dehydrated in a controlled environment. The heterogeneous pattern (spherules, ferns, etc.) was measured at different points using a laser of 532 nm wavelength, 6 mW power, and 1 micrometre spot. Measurements were performed in the 150-1800 cm-1 range.
Results: Raman spectra clearly showed the peaks of phenylalanine and urea (1005 cm-1), C-H deformation (1450 cm-1), guanine and adenine ring stretching (1575 cm-1), and amide I (1670 cm-1), in addition to many other smaller structures. In all the areas (spherules, ferns, etc.), the mentioned peaks were on average more intense in the ALS group, up to more than 80% for the peak at 1450 cm-1 in the areas where the spectra showed the best signal/noise ratio (i.e. spherules, ferns, and in a flat area at the edge of the drop). After normalizing the average spectra of the two groups at the intensity of the 1005 cm-1 peak, the other three peaks remained more intense in the ALS than in the CTRL group.
Conclusions: Raman spectroscopy can provide information on the tear composition, on its variations due to different possible variables (biological or environmental factors, contact lens wear, etc.), and potentially also for the diagnosis of pathologies through biomarkers. An example is the level of urea, according to literature analyses carried out on blood samples and according to these first results on tears of ALS patients.
Research funding received: None

Poster Number: 12
Presentation time: 13:30-13:04
Global survey on parent awareness and attitudes to myopia and its management
Elizabeth Lumb, Claire Venezia, James Gardner, Aldo Zucaro, Anna Sulley
Purpose: With increasing availability of myopia management (MM) interventions, awareness of myopia and its association with ocular health is limited among parents. This research sought to better understand parents' familiarity with myopia and its management.
Method: A large-scale, 25-minute online survey was conducted by an independent market research agency (Decision Analyst). Parents aged 30-55 with a myopic child between the ages of 6-15 were surveyed in UK, Canada, Hong Kong, Australia/New Zealand, Germany and Spain (August/September 2019). Statistical significance testing was performed at the 95% confidence level ($p<0.05$).
Results: A total of 1,009 parents were surveyed across 6 countries. Parents in the UK, Canada, and Germany are less familiar with the term 'myopia' and recognise short sightedness (UK) or near sightedness (Canada/Germany). Significantly more parents in HK recalled advice from their eye care professional (ECP) to spend time outdoors compared to other countries (except for parents in Spain). German parents were significantly less likely to recall their ECP advising them to reduce screen time than other countries. When choosing a MM option parents from most countries see the importance of 'protection from future eye health problems' along with 'comfort' and 'ease of use.' UK also believe affordability is important and German parents think it's important to reduce how blurry their child's eyes will be in the future. 22% of parents globally would be comfortable putting their children at age 8 into contact lenses; this doubles to 43% at age 10.
Conclusions: This research demonstrates that communication with parents on myopia and its management using terminology that is easily understood is important. It also demonstrates that many parents believe that young children are not suitable for contact lenses. ECPs will need to overcome this belief to offer the full range of myopia management interventions available. Parents value the

importance of protecting their myopic children from future eye health problems which could be encouraging for ECPs.
Research funding received: None

Poster Number: 13
Presentation time: 14:18-14:22
Novel soft contact lenses for eye fatigue relief
Ruby Chiang, Colin Skudder, Roger Lan, Joe Wang, Bosin Lin
Purpose: To compare the RELAX lens and tinted lens on eye fatigue relief
Method: Two test lenses were used in the study: 58% RELAX lenses (center with +0.50D) and 58% Aquamax® single vision spherical contact lens(SVS). Subjects were rescheduled to wear test lenses for approximately 15 days of daily disposable wear(minimum of 6 hours per day). Vision and Functional test were taken in the afternoon 15:00 after at least 5 days wear (each measurement was test twice in test duration). Vision test including: High contrast VA, Low contrast VA and Near vision. Functional test including: Near Point Accommodation (NPA)(Satio et al.1993)), Critical Fusion Frequency (CFF)(Satio et al.(1981))(Iwasaki et al.(1989)), and Subjective Rating of Eye Fatigue.
Results: In both high illumination and low illumination environment, the visual acuity result of RELAX lens was higher than SVS (P>0.05). NPA value of RELAX as higher than SVS lenses, it means the eye fatigue was enhanced with RELAX lenses(P>0.05). Near vision with RELAX lens was better than SVS lenses (1.146 vs. 1.032) in both initial and Follow-up measurement。It shows RELAX lenses can enhanced near vision, but for eye fatigue relieving was not statistically significant. CFF value of RELAX lens was also better than SVS lenses (p>0.05). In subjective questionnaire rating results: overall comfort, lens awareness, lens dryness at end of day, stinging and eye fatigue were better than SVS lenses (p<0.05).
Conclusions: A novel RELAX lens design which allow patients to reduce eye fatigue after work at monitors for significant amounts of time. Also, the RELAX lens design can improve near vision for people who spend an increasing amount of time in front of computer screens or people with early presbyopia.
Research funding received: N/A

Poster Number: 14
Presentation time: 14:22-14:26
Use of Multifocal Contact Lenses to Manage Accommodative Insufficiency
Gaganjote Uppal, Claire McDonnell, Daniel Laughlin, Aiden Mc Connon
Purpose: N/A
Method: N/A
Results: N/A
Conclusions: N/A
Research funding received: N/A

Poster Number: 15
Presentation time: 14:26-14:30
Global survey on eye care practitioner perceptions and attitudes regarding myopia and its management
Anna Sulley, Claire Venezia, James Gardner, Aldo Zucaro, Elizabeth Lumb
Purpose: While there is interest about myopia and correction options, less is known about eye care practitioner (ECP) opinions on this topic. This research sought to understand ECP attitudes, motivations and perceived benefits of fitting myopia management contact lenses (MM-CLs) to children, along with challenges in recommending options to patients.
Method: A large-scale, 25-minute online survey was conducted by an independent market research agency (Decision Analyst). ECPs in UK, Canada, Hong Kong, Australia/New Zealand, Germany and Spain were surveyed (August/September 2019). Statistical significance testing was performed at the 95% confidence level (p<0.05).
Results: A total of 402 ECPs were surveyed across the 6 countries. ECPs agree on MM's importance for fast-progressing or higher myopia in children; Aus/NZ more likely to say options should

be offered to everyone. ECPs in Germany and Aus/NZ show the strongest interest in fitting MM-CL, and independent practitioners, optometrists, and those practicing >15 years are more likely to consider fitting them. 50% of ECPs are comfortable putting children into CLs at age 8 (higher in HK, age 11 versus 9); for ages ≥10, this increases significantly to 78%. Around 6 in 10 ECPs recommend time outdoors and less device screen time for paediatric myopes. ECPs are more likely to choose a MM product with best clinical results (58%), ease of use (44%) or an approved product (44%); in Germany & HK, product familiarity is key. Parents not wanting to put children in CLs, perceived high cost, and parents not understanding the MM need and ocular health risks are key ECP challenges.
Conclusions: This research provides evidence that, while there are some differences between countries, ECPs share strong beliefs and perceptions relating to the benefits of MM-CLs, and recognise the importance of recommending MM options, yet they experience hurdles from parents.
Research funding received: The research was supported by CooperVision, Inc.

Poster Number: 16
Presentation time: N/A
Comparative Analysis of Treatment Zone Diameter, Location and Amount of Maximum Defocus and Pupil Size with Orthokeratology
Luigina Sorbara, Dorothee Bandle, Mhamed Ouzzani
Purpose: The purpose of this study was to retrospectively examine data from young patients who had undergone orthokeratology (OK) for myopia control to quantify the size and amount of central (treatment zone) and mid-perpheral (reverse zone) total refractive power (TRP) changes and compare where these changes occur with respect to the pupil size (PS) and location.
Method: Charts were reviewed from participants and data from the Pentacam instrument were collected prior to OK and after the final visit. Variables included the initial Rx , pupil size, total mid-peripheral corneal refractive power (TRP) at the location of the maximum change and treatment zone size (TZD), centrally measured with the Pentacam. All participants were fitted with the Paragon CRT lenses with a BOZD=6mm. Data analysis was conducted with paired T-tests.
Results: A total of 31 patients (62 eyes) age13.93±5.05, 13 M and 18 F, were successfully fitted with CRT lenses. The average sphere was -3.11±1.41D. The final TZD (area of minimal power change) was 3.70±1.37mm horizontally and 3.40±1.38 vertically (P=0.001). The maximum TRP in the reverse zone area was 3.92±1.37D temporally and 3.69±1.69D nasally (P=0.056); 5.13±1.77D inferior and 5.28±1.54D (P=0.41). The average PS was 3.45±0.64mm which was not significantly different than either the horizontal or vertical TZD (P>0.05, both). The pupil and the TZD were both decentred temporally and inferiorly by a similar amount (P>0.05). The initial sphere correlated with total horizontal TZD (r=0.36, P=0.005).
Conclusions: Results from this study should provide valuable insights into the size of the treatment area and refractive changes occurring with orthokeratology when used for myopia control. The pupil size and treatment area appear to be equivalent but the area of maximum power (myopic defocus) that is necessary to slow the progression of myopia may be outside of the pupil area in high illumination conditions.
Research funding received: None

End of session