

## Poster B1

### OPTOMETRY PATHSHALA: AN ONLINE EDUCATION PLATFORM IN HINDI FOR OPTOMETRY STUDENTS AND PRACTITIONERS

Menka Sharma\*, Amisha Gupta, Pawan Kumar

*All India Institute of Medical Sciences, India*

**Introduction:** In India, there are several online platforms for providing education to the optometrist. However, the main disadvantage of these platforms is that their mode of communication is in the English language. As we live in a country where Hindi is the most common language for communication, people still have difficulties understanding English. An educational platform in their regional language will provide a better understanding of optometry concepts for students and practitioners who want to upgrade their clinical skills. **Methods:** A Hindi language online platform named 'Optometry Pathshala' was started on 1st April 2022. To deliver free lectures and panel discussions in Hindi, several faculties, either working as lecturers in optometry institutions or optometry practitioners who are outstanding in their respective fields, were approached. Awareness of 'Optometry Pathshala' among students and practitioners was spread through social media and pamphlets so that more and more optometrists could benefit. The online lectures constituted 45 min followed by 15 min of interactive sessions where the attendees could inquire about their doubts with the lecturers and the expert panels. **Results:** 100 lectures and three courses have been completed under the aegis of the Optometry Pathshala. Over 150 Faculties have participated in delivering knowledge either by taking interactive lectures or participating in the panel discussion. An attendance of over 1 lakh has been recorded for these lectures, panel discussions and course modules. Several students and practitioners have benefited from these lectures and courses. **Conclusions:** Optometry Pathshala being a platform in the Hindi language, widely spoken in India, has benefited several optometry students and practitioners in enhancing their knowledge and keeping track of newer innovations.

## Poster B2

### KNOWLEDGE, ATTITUDE AND WILLINGNESS FOR EYE DONATION IN PATIENTS

Arun Dhungana

*Optometry and Vision Science, National Academy of Medical Science, Nepal*

**Introduction:** The study assesses the knowledge, attitude and willingness of the general population towards eye donation, which includes patients and their attendants attending the outpatient department of a tertiary Eye hospital in Nepal. **Methods:** 1184 participants were administered a pretested semi-structured questionnaire. The chi-square test determined the factors associated with a willingness towards eye donation. Data were analysed using SPSS. **Results:** In this study, 367 (31.08%) participants were willing to pledge their eyes. There was a significant association between willingness to donate eyes among (n=206; 66.1%), those below 40 years of age(n=272; 73.91%), higher education status (n=242; 65.76%), and the urban population(n=294; 79.89%). Perceived reasons (n=205; 45.3%) who were not willing to donate were 58% who needed more information regarding eye donation, 7% thought family may not allow for eye donation, and 11% participants did not want to donate due to religious beliefs. 24% of the respondents do not want to donate because the donation will disfigure the eye. Media played a significant role in creating awareness for eye donation. **Conclusions:** Innovative multipronged strategies should be adopted to increase awareness regarding eye donation in less educated and rural populations.

## Poster B3

### SELF-REPORTED DRY EYES AND COMPUTER VISION SYNDROME: A QUESTIONNAIRE-BASED STUDY

**Bashirah Ishak \***, Nur Aina Arishah Md Noh, A'innur Nabil Nasyuha Noor Hashim, Haliza Abdul Mutalib

*Optometry & Vision Sciences Program, Universiti Kebangsaan Malaysia, Malaysia*

**Introduction:** Virtual reality (VR) is becoming popular worldwide, especially among youngsters. People are able to access and enjoy the benefits of VR technology in the form of movie watching, games, etc. This study assessed changes in accommodation, vergence and tear film characteristics with VR usage. **Methods:** This study was done on 30 subjects aged 17 – 28 yrs. The subjects were recruited after a preliminary optometric work-up. The test battery consisted of measurement of accommodation parameters including near point of accommodation (NPA), accommodative amplitude (AA), accommodative response (AR), accommodative facility (AF), and negative and positive relative accommodation (NRA/PRA); vergence parameters including near point of convergence (NPC), phoria, AC/A ratio, vergence ranges (NFV/PFV) and vergence facility (VF); tear film secretion and stability (NITBUT/TBUT) before and after using VR device for 1 hour. CVS and DEQ questionnaires were administered to assess the patient's symptoms. **Results:** Accommodation parameters showed improvement after using the VR device. NPA OU improved from  $9.3\text{cm}\pm 1.52$  to  $7.8\text{cm}\pm 1.56$  ( $p<0.05$ ). NRA improved from  $+3.6\text{D}\pm 0.49$  to  $+4.10\text{D}\pm 1.60$  ( $p<0.05$ ). PRA improved from  $-4.20\text{D}\pm 1.83$  to  $-5.40\text{D}\pm 0.74$  ( $p<0.05$ ). The lag of accommodation decreased from  $+0.30\text{D}\pm 0.29$  to  $+0.11\text{D}\pm 0.18$  ( $p<0.05$ ). Binocular accommodative facility improved from  $8.9\text{cpm}\pm 3.68$  to  $10.4\text{cpm}\pm 4.06$  ( $p<0.05$ ). Vergence parameters showed worsening. NPC measured subjectively with linear target decreased from  $8.1\text{cm}\pm 1.46$  to  $9.5\text{cm}\pm 1.62$  ( $p<0.05$ ). The vergence facility decreased from  $13.7\text{cpm}\pm 3.71$  to  $11.4\text{cpm}\pm 3.30$  ( $p<0.05$ ). Near NFV break decreased from  $13.4\pm 3.79\Delta$  to  $9.8\pm 3.537\Delta$ . Near PFV break decreased from  $22.0\pm 9.54\Delta$  to  $15.4\pm 7.24\Delta$ . NITBUT decreased from  $12.5\pm 2.64\text{sec}$  to  $7.6\pm 2.56\text{sec}$  ( $p<0.05$ ). TBUT decreased from  $14.3\pm 2.88\text{sec}$  to  $8.8\pm 2.97\text{sec}$  ( $p<0.05$ ). Time taken to wet 35 mm of the Schirmer's strip increased from  $2.58\pm 0.93\text{mins}$  before VR use to  $4.16\pm 1.00\text{mins}$  after VR use ( $p<0.05$ ). **Conclusions:** Our study showed that accommodation parameters improved after using a VR device for 1 hour. However, vergence parameters and tear film characteristics worsened. Users must take this into consideration and limit the usage of such devices to avoid digital eye strain and dry eye.

## Poster B4

### ORTHOKERATOLOGY IN KERATOCONUS: A CASE REPORT

Amit Kumar Singh <sup>1\*</sup>, Gagandeep Sahni <sup>2</sup>, Purushottam Joshi <sup>1</sup>, Isha Bista <sup>1</sup>

<sup>1</sup>*Mechi Eye Hospital, Nepal*

<sup>2</sup>*Silverline Laboratories, Nepal*

**Patient description:** We described the case of a 20-year-old boy who was referred to our clinic to determine whether he had keratoconus. The patient complained of blurry vision at a distance, as well as itching and watering in both eyes. Visual acuity, retinoscopy, pentacam, and central corneal thickness were all measured at the initial assessment. **Case History:** On Snellen's chart, his best-corrected visual acuities (BCVA) were 6/9 and 6/6p, respectively, and retinoscopy revealed Scissor's reflex. With manifest refraction of -3.00/-4.00\*200 (6/9) and -2.25/-1.50\*1100 (6/6p) in the right and left eyes, respectively. A slit lamp examination revealed that the cornea was clear and that the rest of the ocular structures were within normal limits. The radii of curvature in the right and left eyes were 43.00/44.70\*109° (steep axis) and 42.20/43.30\*27° (steep axis), with astigmatism of 1.70 D and 1.10 D, respectively. The central corneal thicknesses (CCT) in the right and left eyes were 536 microns and 532 microns, respectively, while the white to white (WTW) was 12.51 mm and 12.50 mm. According to the test results, the patient was diagnosed with early keratoconus and a visual prognosis with orthokeratology was provided. **Treatment plan:** The uniquely designed reverse-geometry lenses, known as orthokeratology (ortho-K) lenses, has recently gained recognition. This procedure is known by a variety of names, including corneal reshaping therapy, corneal refractive therapy, overnight corneal reshaping, corneal moulding system, Vision Shaping Treatment, and others. The benefit of using this procedure is that it results in a temporary reduction of refractive error by flattening the central cornea with every night usage of the specially designed lens, and it proves helpful to slow down myopia progression. The effective fitting of an orthokeratology contact lens in early keratoconus is discussed in this case presentation. **Expected outcomes:** The Paragon CRT\* Calculator proposes dual axes in both eyes and the base curve (CV), return zone depth (RZD), landing zone angle (LZA), and diameter when the necessary value is entered. Each lens will have a constant optical zone (OZ) and power (PWR). The first experiment was selected based on these patient criteria. 8.6 525 600, 33 34, 11.50 6 mm, +0.50 in the right eye, and 8.6 525 575, 33 34, 11.50 6 mm, +0.50 in the left eye. While evaluating the trial, it reveals refraction on lens (ROL) values of +1.25/-0.25\*900 (6/9) and + 1.25/-0.50\*90 (6/6p) in the right and left eyes, with low riding and paracentral pooling, respectively. **Actual outcomes:** Following the evaluation of the first trial lens, the final ideal parameters were obtained with a single axis. 8.40, 550, 32, 10.50, and 6 mm, and +0.5 in both eyes with refraction over the lens on day 1, was noted +0.50 DS (6/6) in the right eye and + 0.75 DS (6/6) in the left eye, with UCVA of 6/6-1 in both eyes with Plano over the refraction.

## Poster B5

### HOW DID COVID-19 LOCKDOWN AFFECT CONTACT LENS USERS?

Shruthi Villavan \*, Preetha Ramprasat, Ramprasat Kanagaraj

*Optometry, Vasan Institute of Ophthalmology & Research, India*

**Introduction:** A survey-based cross-sectional study was conducted on contact lens wearers in a tertiary care eye hospital in Chennai. The aim was to assess contact lens wear, care and maintenance, and accessibility before, during, and after the COVID-19 lockdown. **Methods:** A questionnaire with 42 items was administered over a telephone call after obtaining voluntary consent. The wearers should be wearing contact lenses for a minimum of 6 months period prior to 1st COVID-19 lockdown in March 2020. **Results:** A total of 103 CL wearers (mean age  $28.6 \pm 8.0$  years, Female = 79.6%, and Male = 20.4%) completed the survey. Of the 103 CL wearers, monthly lens users were 84% before lockdown vs 59% during lockdown and 82% after lockdown. 32% of CL wearers discontinued CL during the lockdown. Reduced wearing time was reported during the COVID-19 lockdown ( $5.5 \text{ hours} \pm 4.76$ ) compared to before the lockdown ( $10.2 \text{ hours} \pm 2.13$ ). 13.5% had changed contact lens brands during the lockdown. The yearly disposable lens usage was reduced from 13% before the lockdown to 7% after the lockdown. The usage of monthly disposable lenses was 84% before the lockdown, 59% during, and 82% after the lockdown. 49% were not getting any updates regarding contact lenses. The major reasons for discontinuation were reduced outdoor activity and fear of COVID-19 infection. **Conclusions:** Eye care practitioners should continue to educate contact lens wearers to ensure safety and minimise the chance of developing contact lens-related complications. Practitioners should be responsible for customer product awareness and updates on eye safety information.

## Poster B6

### DOES BLINK REMINDER APP HELP MOBILE PHONE USERS?

Preetha Ramprasat <sup>\*</sup>, Ramprasat Kanagaraj, Harshini Sasidharan, Bavithran Kesavan,

*Optometry, Vasan Institute of Ophthalmology & Research, India*

**Introduction:** Tear film is spread across the ocular surface by blinking. Staring at digital devices reduces blink rate resulting in evaporation of the tear film and may cause dryness, burning sensation or discomfort. The purpose of this study was to assess tear film characteristics and blink rate with and without the use of a blink reminder application during mobile phone usage. **Methods:** Thirty healthy subjects aged 17-23 years with best corrected visual acuity of 6/6, N6 and no visual or ocular abnormalities participated. Blink rate, Schirmer's I value, invasive and non-invasive tear break-up time, and DEQ-5 dry eye questionnaire scores were measured before and after 35 minutes of reading in a mobile phone and repeated on 2nd day with the blink reminder application running for 30 minutes while reading. Blink rates were also measured during the 15th, 30th, and 31st minutes of mobile reading. **Results:** Blink rate improved from 12 blinks (interquartile range 12.5) at baseline to 22 (IQR 11) at the 15th minute and 25 (IQR 12.5) at the 30th minute of Blink app use,  $p = 0.0001$ . Blink rate reduced to 11 (IQR 4.75) at the 15th minute and 8.5 (IQR 7) at the 30th minute without using Blink app during reading,  $p = 0.027$ . Blink rates at the 31st and 35th minute (16.5 blinks, IQR 10.75) after stopping the Blink app at 30 minutes continued to remain higher than the baseline and without using an app (8.5 blinks, IQR 8.5). Schirmer's I value reduced to 31.25mm (IQR 7.37) in 3.6mins (IQR 2) without the app and 33mm (IQR 11) in 4.5mins (IQR 2) with the Blink app from a baseline of 35mm (IQR 2.5) ins (IQR 1.96),  $p < 0.05$ . DEQ-5 scores were normal in both conditions. The subjects reported better comfort and less glare while using the blink app. **Conclusions:** We found that the Blink app increased the blink rate during the mobile reading task. There was the retention of blink rates within the normal range even after stopping using the app for up to 5 minutes. The increased blink rate, with a reminder, helps keep the ocular surface moist, providing better ocular comfort.

## Poster B7

### SIGNIFICANCE OF THE ASSESSMENT OF OCULAR SURFACE THROUGH DIGITAL SLIT-LAMP

**Pratyush Dhakal**

*Center of Application Research in India, Carl Zeiss India, India*

**Introduction:** Digital technology has been a boon to the medical field more than any other. There have been many advancements due to technology which has changed the outcome of many diseases in the last decade. Adding slit lamp photography to practice can offer several advantages. The fine detail can allow the detection of slight changes in corneal findings, such as resolving corneal infections or oedema. These recordings can also enhance patient care when a patient is being followed by multiple physicians for the same condition.

**Methods:** A qualified Optometrist randomly selected and carefully examined 30 patients (Male=22; Female = 8). The average age was 28.6 years (min 22 years and max 56 years). Carl-Zeiss's slit lamp model no. SL-115 Classic with attached digicam 5.0 and SL-800 was used to assess the ocular surface in a clinical setting in Bangalore, India. According to the manufacturer, this slit lamp allows observation, diagnosis, measurement and documentation of the anterior eye segment, including the lens and anterior vitreous body. The integrated yellow filter and the slit length of 14 mm also provide optimum conditions for contact lens fitting. The study was conducted as per the Helsinki Declaration of GCP. Written consent was taken from every patient to record their anonymised data **Results:** Multiple disorders like Arcus Senilis (5%), Dry Eyes (12%), Meibomian Gland Dysfunction (11%), Cataract (6%), Shallow Anterior Chamber (5%), among others were seen, and pictures were recorded with Zeiss's SL Imaging software. **Conclusions:** The digital slit lamp provides a significant opportunity to view and help diagnose different ocular surface abnormalities. It also helped to document and use the pictures for academic teaching and learning purposes. The large and distinct images provide an enhanced view of different ocular surface structures.

## Poster B8

### COMPARISON OF VF AND OCT PARAMETERS WITH AND WITHOUT POSITIVE FAMILY HISTORY OF GLAUCOMA

Sabitri Bhatta

*Pediatric, Geta Eye Hospital, Nepal*

**Introduction:** To evaluate the Retinal Nerve Fiber Layer (RNFL) and Ganglion Cell Complex (GCC) thickness using spectral domain optical coherence tomography (SD-OCT) in Nepalese eyes with and without a positive family history of Primary Open Angle Glaucoma (POAG) and study its relationship with visual field indices (VFI). **Methods:** A total of 120 eyes with a positive family history of POAG (group I) and healthy subjects (group II) (n=30 subjects in each group) underwent complete ophthalmic evaluation with RNFL, GCC, and VFI obtained from SD-OCT RTVue-100 and Humphrey VF respectively. The measurements were analysed and compared among two groups using an independent t-test and correlation analysis (SPSS version 23). **Results:** The IOP and vertical CDR were significantly higher in group I than in group II, with a mean difference of  $2.48 \pm 0.43$  ( $p < 0.001$ ) and  $0.18 \pm 0.23$  ( $p < 0.001$ ), respectively. The average, superior, inferior, nasal, temporal RNFL and average GCC were significantly lower and thinner in subjects with Group I with a mean difference and highly significant difference of  $-8.53 \pm 2.30 \mu\text{m}$  ( $p < 0.001$ ),  $-7.35 \pm 3.34 \mu\text{m}$  ( $p < 0.001$ ),  $-8.52 \pm 3.58 \mu\text{m}$  ( $p < 0.001$ ),  $-11.87 \pm 2.24 \mu\text{m}$  ( $p < 0.001$ ),  $-5.31 \pm 1.95 \mu\text{m}$  ( $p < 0.001$ ), and  $-8.05 \pm 1.52 \mu\text{m}$  ( $p < 0.001$ ) respectively. Correlation plots with RNFL thickness as predictors of MD and PSD indicated a statistically significant degree of determination in Group I ( $r = 0.455$  and  $r = 0.623$ ,  $p < 0.001$  and  $p < 0.001$ ). **Conclusions:** The OCT and VF Parameters are lower in group I and can be used as an early predictor, diagnosis, monitoring, and management tool.



## Poster B9

### VISUAL EVOKED POTENTIAL IN CHILDREN SUFFERING FROM HYPOXIC ISCHEMIC ENCEPHALOPATHY

Amisha Gupta

**Introduction:** Hypoxic ischemic encephalopathy (HIE) is one of the most severe birth complications affecting infants. HIE is a brain injury caused by perinatal asphyxia. The loss of vision due to birth asphyxia is one of the most common causes of paediatric visual impairments in developed countries. 20-30% of HIE cases die in the neonatal period. 33-50% of survivors are left with permanent neurodevelopmental abnormalities. This study evaluates the visual development of children suffering from HIE using visual evoked potential. **Methods:** In this prospective observational study, 60 children aged six months to 5 years (mean  $26.11 \pm 16.06$  months) diagnosed with cases of HIE by the Department of Paediatrics, AIIMS, New Delhi, India, that were referred for ophthalmic examination were enrolled. A complete ophthalmic examination, including refraction and best-corrected visual acuity assessment using preferential looking (PL), was performed. All the subjects underwent visual evoked potential (VEP) procedures. The Visual acuity of HIE patients was then correlated with VEP findings to evaluate the visual development of these patients. **Results:** The spherical equivalent refractive error ranged from +6 to -7 D. Low vision and blindness were recorded at 46.67% and 43.33%, respectively. 10% of cases had mild vision loss. The mean visual acuity in children suffering from HIE was  $1.16 \pm 0.39$ . The amplitude of VEP (VEP amp) and latency of VEP (VEP lat) were  $13.09 \pm 3.73$  and  $121.52 \pm 10.53$ , respectively. **Conclusions:** This study showed that the patients suffering from HIE had compromised vision compared with their age. Most of the patients had low vision or were blind. VEP amplitude and VEP latency were also affected in these patients. 4 patients had poor fixation while the VEP was recordable, which showed that these patients have chances of improvement in future.

## Poster B10

### A NORMATIVE DATABASE OF OCULAR SURFACE ANALYSER QUANTITATIVE METRICS IN A LARGE HEALTHY COHORT

Ramkailash Gujar <sup>1\*</sup>, Neha Kapur <sup>2</sup>, Tanya Gupta <sup>3</sup>, Jamngaih Mang Ngaihte <sup>3</sup>, Bharti Sangwan <sup>4</sup>, Virendra Singh Sangwan <sup>5</sup>

<sup>1</sup>Cornea and Stem Cell, Dr Shroff Charity Eye Hospital, India

<sup>2</sup>Cornea, Dr Shroff Charity Eye Hospital, India

<sup>3</sup>Optometry, Dr Shroff Charity Eye Hospital, India

<sup>4</sup>Pandorum, Pandorum Pvt. Limited, India

<sup>5</sup>Cornea and Stem Cell, Dr Shroff Charity Eye Hospital, India

**Introduction:** The aim of the present study was to report the normative database values of all the quantitative parameters of the Ocular surface analyser (OSA) using a large cohort of healthy paediatric and adult subjects in the Indian population **Methods:** Healthy subjects were imaged within the same visit using the OSA (Sitemi SBM, Milano, Italy) focusing at the ocular surface and meibomian glands area. Traditional invasive tests like tear break-up time (TBUT), and Schirmer tests 1 and 2 were also performed on the same day. Lipid layer thickness (LTT), Non-invasive tear break-up time (NITBUT), Tear meniscus height (TMH), Blink rate, blink quality, and meibomian gland loss were exported from OSA to evaluate potential differences between non-invasive device and traditional invasive tests. A qualitative morphological assessment of meibomian glands was also assessed to report the pattern of meibomian glands in different age groups of healthy subjects. **Results:** Eight hundred forty eyes of 420 healthy subjects were included in the present study. Mean TBUT values and Schirmer test were 11 sec and 16mm, respectively. Mean values of NITBUT, LTT, TMH, and Blink rate were 10 sec, 40nm, 23mm and 90%, respectively. The upper meibomian gland loss percentage and lower meibomian gland loss percentage were 15% and 20%, respectively. No statistically significant differences were reported between TBUT and NITBUT. Similarly, no statistical difference between TMH and Schirmer test. In the qualitative assessment, a straight meibomian gland pattern for the lower lid and a slightly distorted meibomian gland pattern were observed. **Conclusions:** In the overall analysis of the quantitative assessment, no statistically significant differences were noted between traditional invasive tests like TBUT and Schirmer tests and non-invasive OSA. Non-invasive OSA could be a more reliable and useful tool for the early diagnosis of dry eye in less time.

## Poster B11

### THE TEAR FILM AND MEIBOMIAN GLAND (MG) MORPHOLOGY AMONG YOUNG ADULTS

Nagaraju Konda

*Optometry & Vision Sciences, University of Hyderabad, India*

**Introduction:** Tear film and MG morphological changes play an important role in detecting dry eyes and Meibomian gland dysfunction (MGD). These changes are most commonly seen with increased age. However, the tear film and MG morphology among young adults has been overlooked. Hence, this study evaluated the tear film and meibomian gland (MG) morphology among young adults and assessed its relation to dry eyes. **Methods:** One hundred fifty subjects were enrolled in this prospective cross-sectional study. All the subjects completed Ocular Surface Disease Index (OSDI) questionnaire and Computer Vision Syndrome Questionnaire (CVS-Q). Tear film tests such as non-invasive break-up time (NIBUT), tear meniscus height (TMH), lipid layer pattern, Schirmer's test, and corneal staining were performed. For MG morphology, images of both upper and lower eyelids were captured. TMH, MG length, thickness, loss, and tortuosity were measured using ImageJ software **Results:** It was found that the MG length was longer and MG loss was lesser among these subjects. OSDI scores significantly correlated with MG length ( $r=-0.22$ ,  $p=0.006$ ), MG width ( $r=-0.18$ ,  $p=0.03$ ), and MG loss of lower lid ( $r=0.17$ ,  $p=0.03$ ). Results analysed using the OSDI threshold value showed a significant reduction in TMH ( $Z=-2.10$ ,  $p=0.04$ ) and NIBUT ( $Z=-2.33$ ,  $p=0.02$ ) in the OSDI+ group. Similarly, the MG length of the upper ( $Z=-2.27$ ,  $p=0.02$ ) and lower lid ( $Z=-2.85$ ,  $p=0.004$ ) were significantly reduced in the OSDI+ group. MG width, loss, and tortuosity, although lower in the OSDI+ group, did not show any statistical significance ( $p>0.05$ ). **Conclusions:** This study has reported the MG morphology and its relation to dry eyes among young adults. The majority of the young individuals presenting for regular eye examination may have MG morphological changes. It is important to administer questionnaires such as OSDI and CVS-Q and perform non-invasive tear film tests such as NIBUT, TMH, and IR imaging of MG as routine tests in young adults.

## Poster B12

### OCULAR SURFACE REHABILITATION WITH SCLERAL LENS OF BED RIDDEN AMYOTROPHIC LATERAL SCLEROSIS PATIENT DURING COVID-19 PANDEMIC

Aneja Abhilekh \*, Umang Mathur, Ramkailash Gujar, Neha Kapur, Virendra S Sangwan

*Contact Lens Department, Dr.Shroff's Charity Eye Hospital, India*

**Patient description:** A 70 yr old male patient was seen by Contact lens specialist of Dr Shroff Charity Eye Hospital, at his home in Delhi during COVID-19 pandemic. **Case history:** Patient was in bedridden condition diagnosed with Amyotrophic lateral sclerosis (ALS). After 2 weeks from the diagnosis of ALS, patient was diagnosed exposure keratitis and suggested for tarsorrhaphy but it was not possible due to health condition and COVID-19. Finger counting close to face visual acuity was noticed. **Physical examinations results:** A written consent form was taken from the relative before any medical interventions. Restricted hand movement and speech difficulty was noted. Most of the communication was through head nodding. **Results and investigations:** A large epithelial defect was observed in both the eyes after fluorescein dye with cobalt blue filter using portable slit-lamp. **Treatment plan:** Non-surgical medical intervention through Scleral lens was decided to improve the ocular surface and visual rehabilitation. Lubricating gel was used to fill Scleral lens instead of normal saline due to stability of fluid. **Expected outcomes:** Symptomatic relief and improved visual status was expected after Scleral lenses fitting. **Actual outcome:** The epithelial defect was slightly reduced and ocular surface was also improved. Patient was able to recognize faces and fan in the room. The follow up was done for consecutive 3 months and patient had been asked questions about the vision and response were noted by shaking his head.

## Poster B13

### ESTABLISHING AND CHARACTERISING MOUSE CORNEAL ALKALI INJURY MODEL FOR PRE-CLINICAL STUDIES

Jyoti Rajput <sup>1\*</sup>, Anil Tiwari <sup>2</sup>, Tuhin Bhowmick <sup>1</sup>, Arun Chandru <sup>1</sup>, Mehak Vohra <sup>1</sup>, Bharti Sangwan <sup>1</sup>

<sup>1</sup>*Pandorum Technologies Pvt. Ltd., India*

<sup>2</sup>*Cornea and Stem Cells, Dr Shroff Charity Eye Hospital, India*

**Introduction:** Corneal ulceration is the common cause of vision loss. Corneal ulceration is characterised by fibrosis, extracellular matrix deposition (ECM), angiogenesis and inflammation. This study highlights the ophthalmological and histopathological changes throughout the progression of alkali injury-induced corneal ulceration in the mouse cornea.

**Methods:** c57bl/6 mice were used for the study. A 2 mm wide and 50µm deep scar was made, followed by applying 0.75N NaOH and irrigating with normal saline. Animals were imaged using the ophthalmological parameters; i) OCT, ii) Slit lamp and iii) Densitometry over the period of 15 weeks. On the 15th day, mice were sacrificed, and eyes were enucleated for histology and histopathology. **Results:** Clinical parameters were used to evaluate and grade the scars into nebular, macular and leucomatous. Slit lamp revealed re-epithelisation of the wound in the first 2-3 days, followed by incidences of epithelial defects, inflammation, and opacification. Neovascularisation was observed after the 10th day of alkali burn. OCT: pachymetry wide and raster scans revealed extensive oedema and thickening of the central cornea. Densitometry images revealed stable scar formation. Histology and histopathology supported the ophthalmological evaluation. **Conclusions:** These results demonstrate dynamic changes in the process of corneal ulceration post-alkali burn. The temporal changes during corneal ulceration in mice were captured using advanced clinical techniques such as OCT and densitometry. Based on our findings, we suggest it is vital to closely monitor the ophthalmological parameters while establishing the mice ulceration model for pre-clinical study.

## Poster B14

### DEVELOPMENT AND CHARACTERISATION OF RABBIT CORNEAL ULCERATION MODEL FOR PRE-CLINICAL STUDIES

**Bharti Sangwan**

*Pandorum Technologies Pvt. Ltd., India*

**Introduction:** Corneal fibrosis and ulceration are characterised by fibrosis and extracellular matrix deposition, angiogenesis, and inflammation. In this study, we aimed to evaluate the ophthalmological, clinical, and histopathological changes during the progression of deep stromal alkali injury in the rabbit cornea. **Methods:** Albino New Zealand rabbits underwent penetrating lamellar keratoplasty using a guarded trephine. A 0.75N NaOH solution was applied, followed by irrigation with normal saline. Ophthalmological parameters OCT, slit lamp, and densitometry were used to image the rabbits over a period of three weeks. After three weeks, rabbits were sacrificed, and eyes were enucleated for histology and histopathology. **Results:** The scars were evaluated and graded into nebular, macular, and leucomatous using standard clinical parameters. Slit lamp revealed re-epithelisation of the wound in the first 5-6 days, followed by incidences of epithelial defects, inflammation, and opacification. Neovascularisation was observed after 14-15 days of alkali burn. OCT scans revealed extensive oedema and thickening of the central cornea. Densitometry images showed stable scar formation with an opacity score  $\geq 75$ , indicating a condition of legal blindness. Histology and histopathology supported the ophthalmological evaluation. **Conclusions:** The use of advanced clinical techniques such as OCT and densitometry allowed for the temporal evaluation of corneal scar formation post alkali burn in a pre-clinical animal model. Our results suggest clinical parameters are essential for evaluating corneal ulceration in pre-clinical animal models.

**OUTCOMES OF ACTIVE VISION THERAPY ON A MULTIPLE FOCAL HEALED CHOROIDITIS  
PATIENT – A CASE REPORT**

**Rajeev Prasad, Sumon Kumar Sarkar & U. Shiva Rama Krishna**

Visual Eyez, India

**Patient description:** Multifocal choroiditis is a rare inflammatory condition that mostly impacts the pigmented epithelium and choroid of the retina. In this case report, a 20-year-old female with healed multifocal choroiditis is described in detail, including her medical history and treatment outcomes. **Case history:** Following a consultation with an ophthalmologist and the subsequent diagnosis of the illness, the patient complained of symptoms including blurred vision, difficulties focusing, and impaired night vision. **Physical examinations results:** Refraction at initial consultation was OD +00.0 DS and OS -1.25X85°, with visual acuities of 3/60 and 2/60 at 6 metres and N36 in both eyes for near vision. The patient's visual acuity and general visual function were improved using a multimodal approach that included optometric vision therapy. The rehabilitation therapy included exercises to enhance peripheral awareness, sensory fusion, motor fusion precision, and monocular skills, among other visual abilities. **Treatment plan:** To track progress and make appropriate changes to the treatment plan, frequent follow-up visits were made. **Outcome:** As a result of the vision therapy program, the patient's visual acuity, binocularity, and quality of life in performing daily living activities improve including reading, writing and confidence. The patient's visual acuity in her right eye improved from 3/60 to 6/36+2 and her left eye improved from 2/60 to 6/18+1. Stereoacuity improved from flat fusion to 800 seconds of arc. **Conclusion:** This case shows the efficacy of a collaborative and individualised approach in treating healed multifocal choroiditis with optometric vision treatment, and it provides helpful guidance for cases of low vision rehabilitation that are comparable to this one.