



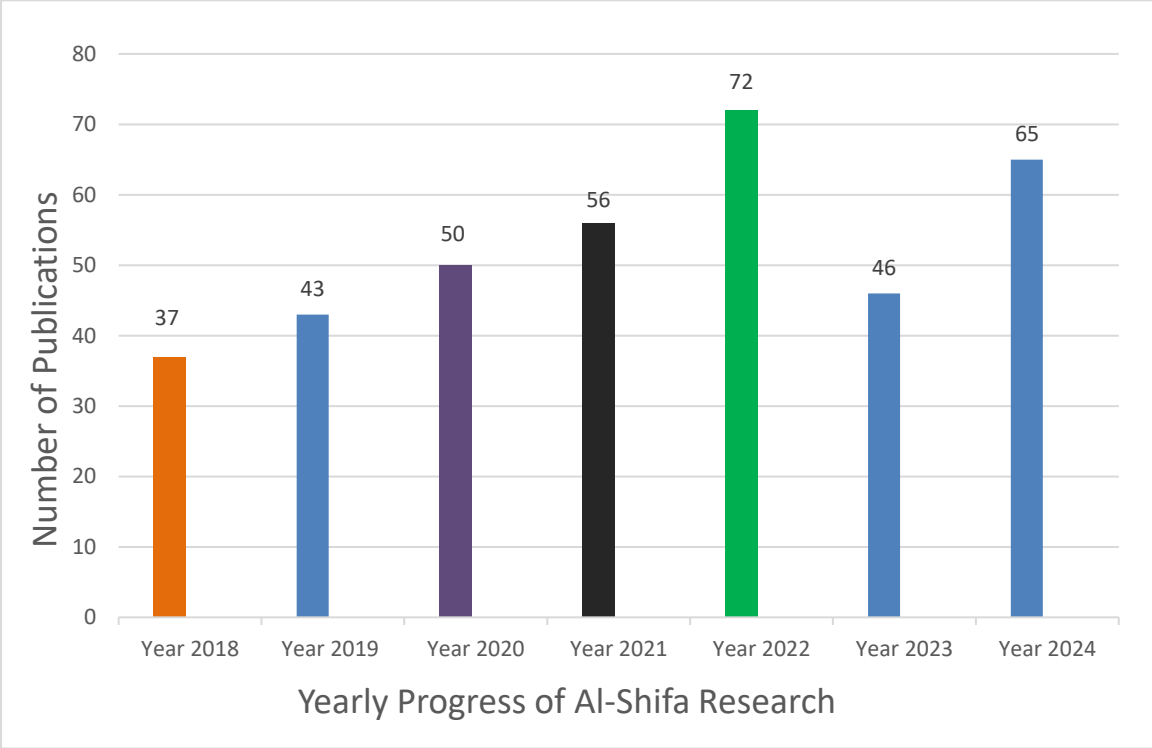
AL-SHIFA ANNUAL RESEARCH REPORT VOL. 07



Prepared By



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Message from President



Maj Gen (R) Rehmat Khan

Al-Shifa Trust has been a beacon of hope and healing in the field of eye care since 1991. The essence of our mission lies in providing state-of-the-art eye care services to all, especially the under-privileged. With each passing year, our commitment to improving lives deepens, driven by a relentless pursuit of excellence in both healthcare and scientific discovery. I believe this report is a testament to the outstanding contributions of Al-Shifa team and their ongoing efforts to shape the future of healthcare and research both locally and globally.

In a world overwhelmed by an increasing volume of research publications, Al-Shifa Annual Research Profile has ascended itself as a distinguished and respected publication. True to Al-Shifa's core principles, this profile not only reflects our commitment to advancing healthcare knowledge but also highlights our dedication to adopting evolving research methodologies. As the healthcare landscape continues to transform, so does our approach, ensuring we remain at the forefront of research and innovation.

I would like to express my deepest gratitude to the faculty, staff, and students whose dedication, passion, and tireless efforts are reflected in this year's research contributions. Your unwavering commitment to excellence and relentless pursuit of scientific discovery continue to inspire us all. Together, we are cultivating an environment where collaboration flourishes, and where the pursuit of knowledge transcends borders, ultimately enhancing healthcare worldwide.

Furthermore, I wish to extend my heartfelt thanks to our generous donors, whose unwavering support drives our mission. Their commitment is not only to our hospital but to the broader cause of advancing global healthcare.

Looking ahead, let us reaffirm our commitment to advancing healthcare through rigorous, evidence-based research. Together, we can continue to make a meaningful difference in the lives of millions and further solidify Al-Shifa Trust Eye Hospital as a leader in the global healthcare research community.

Message from Dean



Prof. Dr. Wajid Ali Khan

As we reflect on the year gone by, I am filled with immense pride and gratitude for the exceptional work carried out by our researchers, clinicians, and collaborators at Al-Shifa Trust. 2024 has been a year of remarkable growth, marked by significant achievements, breakthroughs, and the strengthening of our commitment to improving patient care through innovative research.

Year 2024 saw an exciting surge in both national and international clinical trials, reinforcing our position as leaders in the field of medical research. The expansion of our research endeavors was particularly noteworthy, with pioneering studies spanning across ophthalmology and other multidisciplinary healthcare areas. Despite the challenges of a rapidly evolving global landscape, our researchers remained steadfast, adapting quickly and staying committed to pushing the frontiers of scientific understanding. Their unwavering dedication has resulted in the successful completion of trials, high-impact publications, and the development of innovative treatments, setting new benchmarks for excellence in medical research.

Our focus is not only on showcasing the remarkable capabilities of our teams but also on strengthening collaborations with prestigious institutions worldwide. By working together, we aim to shape the future of medical research, creating advancements that will benefit healthcare systems both locally and globally.

At the core of our achievements is a deep-rooted commitment to nurturing an environment of growth, collaboration, and discovery. As we move into the coming year, we remain excited about the possibilities ahead, confident that the strides we continue to make will lead to even greater milestones. Together with our valued national and international partners, we look forward to advancing research that will change lives and inspire future generations of scientists and healthcare pioneers.

Message from Director Research



Prof. Dr. Ume Sughra

As we conclude another remarkable year, I am deeply grateful to all the contributors who have made this Al-Shifa Annual Research Report 2024 a powerful reflection of the progress and impact we continue to make in medical and scientific research. This year's edition features a rich collection of research spanning clinical trials, public health, pharmaceutical studies, and beyond. The breadth and depth of these contributions are a testament to the hard work and dedication of our team, and the continued trust we have earned within the scientific community.

This year marked a significant milestone for Al-Shifa Research Centre, as we successfully conducted several clinical trials that have had a profound impact not only on the research landscape in Pakistan but also on global health. In addition to our clinical trials, we were thrilled to host the 3rd International Conference, in March 2024 on "Exploring the Global Perspective: Trends & Insights of Clinical Research" which brought together some of the brightest minds in clinical practice. This platform fostered invaluable discussions on the future of clinical research, and how we can continue to build bridges across disciplines to improve patient care. Our collaborations with global research institutions have paved the way for deeper insights and further opportunities to contribute to significant health innovations.

Looking ahead, the path of discovery and progress is ever-expanding. We remain committed to producing high-quality; peer-reviewed research that not only elevates the standards of our institution but also addresses the broader challenges facing the global healthcare community.

The journey of research is one of continual growth, and I am all humbled of the collective achievements of the Al-Shifa Research Centre and Al-Shifa Trust team. Together, we strive towards a future where our research creates meaningful impact for the communities we serve.

"Somewhere, something incredible is waiting to be known."

Carl Sagan

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Publications

1. Surgical Outcomes of Phacoemulsification at A Tertiary Care Eye Hospital

Abstract

Objective: To evaluate the visual outcomes of phacoemulsification surgery at a tertiary care eye hospital.

Methods: A retrospective clinical study was done in Al-Shifa Trust Eye Hospital Rawalpindi. A total of 3075 eyes were included that underwent phacoemulsification. Patients of >40 years with follow up visit were included.

The best corrected visual acuity was noted before and after 06 weeks of phacoemulsification and categorized according to World Health Organization criteria (Good, Moderate and Poor). Data was analyzed by SPSS 22.0 version. **Results:** Total 3075 eyes are included in the study, out of which males are 1816 (59.1%), and 1259 (40.9%) females, total right eyes were 1895 (61.6%) and left 1180 (38.4%). Only those patients are included who fulfilled the follow up criteria. The preoperative BCVA was poor in 1839 (59.8%), moderate in 801 (26%), and good in 435 (14.1%). The postoperative BCVA at 6 weeks was good in 2467 (80.2%), moderate in 449 (14.6%), and poor in 159 (5.2%). **Conclusions:** The visual outcome of phacoemulsification by calculating vision post operatively is a good tool for maintaining high quality surgical performance. Proper follow up of patients can save patients from postoperative complications. An audit may benefit by refining surgical skills.

How to cite: Murtaza, R., Ahmad, S., Naveed, S., & ul Haq, I. Surgical Outcomes of Phacoemulsification at A Tertiary Care Eye Hospital. Al-Shifa Journal of Ophthalmology 2024; 20(2): 75-79

2. Cross Sectional Study on Well-Being and Coping Strategies of Low Vision Patients Visiting Al-Shifa Eye Trust Hospital

Abstract

Background: Visual impairment significantly impacts individuals' lives, affecting their ability to perform daily activities and influencing their emotional well-being. The Global Burden of Disease study highlights vision impairment as a leading cause of disability worldwide, necessitating a deeper understanding of its impacts and the coping strategies employed by those affected.

Objectives: This study aimed to assess the functional and emotional impacts of visual impairment on patients' well-being and explore the coping strategies used by individuals with low vision. The association between the severity of visual impairment and its impacts, alongside the effectiveness of various coping mechanisms, was examined. **Methods:** A cross-sectional study was conducted in the Low Vision Department of a Tertiary Eye Care Hospital over six months. A total of 400 participants diagnosed with low vision were recruited through internal and external referrals. Data were collected using the Impact of Visual Impairment (IVI) tool and the Coping Strategy Indicator (CSI), alongside demographic information. The IVI tool assessed functional and emotional well-being, while the CSI evaluated the coping strategies employed. Statistical analyses were performed using SPSS version 25, focusing on mean scores and the significance of differences across demographic and clinical variables.

Results: The study found that the severity of visual impairment was significantly associated with worse functional (Mean±SD: 28.33±14.86) and emotional (Mean±SD: 14.92±7.14) well-being scores (P<0.001). Participants over 30 years and those residing in rural areas experienced a greater impact of visual impairment. Notably, employment status significantly correlated with the degree of impact, with unemployed individuals reporting higher functional and emotional distress. Avoidant coping strategies were linked with greater emotional distress, while problem-solving and seeking social support showed a mixed impact on patients' well-being. **Conclusions:** The severity of visual impairment adversely affects both the functional abilities and emotional well-being of individuals, with avoidant coping strategies exacerbating these impacts. Encouraging active coping mechanisms and enhancing support systems could mitigate the negative effects of visual impairment on patients' lives. These findings underscore the need for holistic approaches in the care and support of individuals with low vision.

How to cite: Sadat, A., & Malik, E. (2024). Cross Sectional Study on Well-Being and Coping Strategies of Low Vision Patients Visiting Al-Shifa Eye Trust Hospital, Pakistan. Journal of Health and Rehabilitation Research, 4(1),1450–1456. <https://doi.org/10.61919/jhrr.v4i1.625>.

Publications

3. Corneal Confocal and Specular Microscopic Characteristics in Primary Open-Angle Glaucoma: An Optical Coherence Tomography (OCT)-Based Case-Control Study

Abstract

Background: Glaucoma, particularly open-angle glaucoma (OAG), is a leading cause of irreversible blindness, associated with optic nerve damage, retinal ganglion cell death, and visual field defects. Corneal biomechanical properties and cellular components, such as corneal nerve and keratocyte densities assessed by in vivo confocal microscopy (IVCM), may serve as biomarkers for glaucoma progression. This study aimed to explore the relationship between corneal nerve parameters, keratocyte density, and optical coherence tomography (OCT)-derived retinal nerve fiber layer (RNFL) thickness in primary open-angle glaucoma (POAG) patients and controls. **Methods:** This case-control study was conducted at Al-Shifa Trust Eye Hospital, Rawalpindi, Pakistan, from January 2023 to October 2024. It included 26 eyes of 17 glaucoma patients and 28 eyes of 18 age-matched controls. POAG was diagnosed based on elevated intraocular pressure (IOP), optic disc changes, RNFL defects, and visual field abnormalities. Participants underwent full ophthalmic evaluation, including OCT for RNFL thickness, specular microscopy, and corneal confocal microscopy (CCM). Data were analyzed using IBM SPSS Statistics for Windows, Version 26.0 (Released 2019; IBM Corp., Armonk, New York, United States), with Spearman's correlation and linear regression for association analysis. **Results:** Anterior stromal keratocyte density was significantly lower in glaucoma patients (436.63 ± 145.44 cells/mm²) compared to controls (546.54 ± 141.20 cells/mm²; $p=0.007$). No significant difference was found in posterior stromal keratocyte density ($p=0.788$). Corneal nerve parameters showed a higher nerve fiber length in glaucoma patients (19.25 ± 5.74 mm/mm²), but the difference was not significant ($p=0.143$). Nerve branch density was significantly higher in glaucoma patients (40.22 ± 23.44 branches/mm²) compared to controls (26.12 ± 10.17 branches/mm²; $p=0.054$). Specular microscopy revealed significantly lower endothelial cell density in glaucoma patients (2159.8 ± 393.39 cells/mm²) compared to controls (2474.15 ± 272.59 cells/mm²; $p=0.002$). OCT measurements showed a significantly thinner global RNFL in glaucoma patients (69.79 ± 24.79 μ m) compared to controls (98.86 ± 9.04 μ m; $p<0.001$). Spearman's correlation analysis showed that anterior keratocyte density was positively correlated with global ($r=0.294$; $p=0.045$), superior ($r=0.312$; $p=0.031$), and inferior quadrant RNFL thickness ($r=0.285$; $p=0.049$). It was also negatively correlated with central corneal thickness (CCT) ($r=-0.367$; $p=0.039$). In multivariate analysis, the duration of glaucoma was significantly associated with RNFL thickness ($p=0.011$). **Conclusions:** This study found that anterior stromal keratocyte density was positively correlated with RNFL thickness, suggesting a potential link between corneal cellular changes and glaucoma severity. Endothelial cell density was significantly lower in glaucoma patients, which may reflect the disease's impact or the effect of medications on corneal health. While corneal nerve parameters did not show significant differences, these findings highlight the importance of corneal biomechanical properties in glaucoma pathophysiology. Further studies with larger sample sizes and longer follow-up periods are needed to confirm these findings and explore the role of corneal parameters in glaucoma progression.

How to cite: Naqvi A H, Khan S A, Ali M, et al. (December 26, 2024) Corneal Confocal and Specular Microscopic Characteristics in Primary Open-Angle Glaucoma: An Optical Coherence Tomography (OCT)-Based Case-Control Study. Cureus 16(12): e76411. DOI 10.7759/cureus.76411.

4. Analysis of Corneal Endothelial Cells Post Pars Plana Vitrectomy and Silicon Oil Tamponade Treatment for Rhegmatogenous Retinal Detachment

Abstract

Objective: To examine the effects of pars plana vitrectomy (PPV) with silicone oil tamponade on corneal endothelial cell density in patients with rhegmatogenous retinal detachment (RRD). **Methods:** The study was conducted at Ali Fatima Hospital in Lahore, Pakistan, 120 individuals with RRD diagnoses between the ages of 30 and 70 participated in a quasi-experimental design. Consecutive non-

How to cite: Jamil, M. H., Ashraf, B., Khan, A., Ashraf, A., Amin, N., Sahar, T., & Shahbaz, F. Analysis of Corneal Endothelial Cells Post Pars Plana Vitrectomy and Silicon Oil Tamponade Treatment for Rhegmatogenous Retinal Detachment. Al-Shifa Journal of Ophthalmology 2024; 20(4): 138-144.

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probability sampling was used. Pre- and post-PPV corneal endothelial cell density was assessed. **Results:** There were notable differences in the quantity of corneal endothelial cells among the groups. Before surgery, no discernible changes were discovered. However, following surgery, there were significant differences in mean change between genders ($p = 0.001$) and age groups ($p < 0.0001$). The mean change between phakic and pseudophakic eyes varied significantly after surgery ($p < 0.0001$). The mean count was significantly different before and after surgery (-49.85 cells/mm², $p = 0.005$). **Conclusions:** This implies that PPV combined with silicone oil tamponade has a significant positive effect on the density of corneal endothelial cells. PPV combined with silicone oil tamponade has a good impact on RRD patients' corneal endothelial cell density. The mean change after surgery varied by gender and age, highlighting the significance of individualized treatment plans.

5. Impact of the Nationwide Avastin Ban at a Tertiary Eye Care Hospital in Pakistan

Abstract

Objective: To report the impact of a 10-week-long nationwide ban on intra-vitreous bevacizumab (IVB) injection (Avastin®) at a tertiary care hospital in Pakistan.

Methods: This was a single-center, retrospective, cohort study. Patients scheduled for IVB injections from October

How to cite: Shaheen, F., Farooq, H., & Amjad, M. (2024). Impact of the Nationwide Avastin Ban at a Tertiary Eye Care Hospital in Pakistan. *Cureus*, 16(7).

25, 2023 to October 29, 2023 who arrived in OPD between November 28, 2023 and December 15, 2023 for their assessment were included in this study. **Results:** Among the identified 412 patients, only 103 met the inclusion criteria. The mean age was 59.35 ± 9.5 (mean \pm SD). About 60.2% were male ($n = 62$). Diabetic macular edema (DME) was the most common indication ($n = 71$, 68.9%). The mean total duration of treatment delay was 81.67 ± 17.15 days. While the delay due to the Avastin® ban was 67.47 ± 4.8 days. Eyes that had not received any prior injections were 46 (44.7%) while others had received at least 1 ($n = 43$, 41.7%) or 2 injections ($n = 14$, 13.6%) before. Mean central macular thickness (CMT) before and after treatment delay was 362.7 ± 113.4 μ m and 398.38 ± 124 μ m ($p < 0.05$), respectively. Among 20 patients with vitreous hemorrhage (VH), 14 patients showed marked improvement (70%), 5 showed no change in severity (20%) and 1 (5%) had further worsening. CMT difference was strongly correlated with the total duration of treatment delay ($p < 0.01$) and with the number of injections ($p < 0.01$). **Conclusions:** The nationwide ban on Avastin® heightened the severity of disease in the patients highlighting the delicate balance between safety precautions and timely access to essential medical interventions

6. Awareness, Utilization and Barriers in Accessing Assistive Technology among Patients Attending Low Vision Rehabilitation Center

Abstract

Background: The UN estimates that more than one billion persons require one or more assistive devices to maintain their functioning. **Aim:** To determine the knowledge, adoption and utilization of assistive devices among low vision patients. **Methods:** This cross-sectional study was conducted from September 2023 to December 2023 and consists of 130 subjects' visits to the low vision rehabilitation centre of Al Shifa Trust Eye Hospital. The questionnaire was filled out by asking the patients enlisted questions. The frequency and percentages were generated for the qualitative variables, whereas the mean and standard deviation were generated for the quantitative variables. **Results:** The average age was 27.82 ± 8.65 (range 18- 50 years). By taking the mean value as a cut-off point, 58.5% of patients had poor awareness, whereas only 41.5% had good awareness of assistive technology. 75 patients Out of 130 were using some kind of assistive technology. Out of these 75, 63 patients got benefit from their prescribed devices, but 12 participants could not get any benefit. Lack of awareness and lack of training were the most frequently reported barriers in the study. **Conclusions:** The awareness and utilization of assistive devices among low-vision patients is relatively low. Different strategies should be introduced to increase awareness

How to cite: Fatima, S., Tanveer, M., Ayub, F., Sohail, W., & Batool, Z. (2024). Awareness, Utilization and Barriers in Accessing Assistive Technology among Patients Attending Low Vision Rehabilitation Center. *Pakistan Journal of Medical & Health Sciences*, 18(7), 21-21.

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and utilization and to overcome the major barriers. **Keywords:** Low vision, Assistive technology, Artificial Intelligence

7. Frequency And Unusual Clinical Manifestation of Orbital Xanthogranulomas: An Overview

Abstract

Objective: To assess the frequency and clinical characteristics of orbital xanthogranulomas, focusing on their unusual presentations and impact on bone structure in a South Asian population. **Methods:** This is a retrospective study conducted at Al-Shifa Trust Eye Hospital, a tertiary care hospital in Rawalpindi, Pakistan.

How to cite: Manzoor, A., Taimur, F., Saad, M., Ahmad, S., Tahir, F., & Khan, S. (2024). Frequency And Unusual Clinical Manifestation of Orbital Xanthogranulomas: An Overview. Journal of Rawalpindi Medical College, 28(3).

The study included patients diagnosed with orbital xanthogranulomas between July 2001 and July 2023. The variables collected included patient demographics (age, gender), presenting symptoms, duration of symptoms before presentation, clinical features, diagnostic modalities used (e.g., CT scans, histopathology), treatment modalities, and follow-up outcomes. **Results:** Between July 2001 and July 2023, 1250 orbital lesions were identified. Out of these, a total of 6 patients were diagnosed with orbital xanthogranuloma. The presenting symptoms for these 6 patients included proptosis in 5 cases, loss of vision in 5 cases, and redness of the eyes in 1 case. In four patients, bony erosions were seen preoperatively. The most commonly involved bone was the roof of the orbit. In one patient, osteosclerosis of the knee and elbow joint was reported. The mean duration of symptoms before presentation was 1.8 years, ranging from 3 months to 5 years. The mean age at presentation was 38 years (range, 3 – 70 years). Recurrence was seen in only one patient. **Conclusions:** In conclusion, our findings indicate that orbital xanthogranulomas, while rare, constitute a noteworthy proportion of lesions with bony erosions. These tumors manifest with diverse clinical features, complications, and systemic associations, making them complex to diagnose and manage effectively.

8. Mean Errors from The Target Refraction at 1 Month After Phacoemulsification Surgery in High Myopes: A Comparison Of SRK/T, Haigis and Holladay

Abstract

Objective: To assess differences in mean numerical errors in high myopes from the predicted target refraction using SRK/T, Haigis, and Holladay 1 IOL formulas. **Methods:** High myopes having ≤ -6 D SER and/ or ≥ 26 mm axial lengths undergoing uncomplicated phacoemulsification surgery for cataracts and completing 1-month follow-up were included. SRK/T was used for the implanted IOL and the

How to cite: Najmi, S., Naeem, B. A., Nazir, T., Taimur, F., & Ali, Z. Mean Errors from The Target Refraction at 1 Month After Phacoemulsification Surgery in High Myopes: A Comparison Of SRK/T, Haigis and Holladay. Al-Shifa Journal of Ophthalmology 2024; 20(3): 88-92

target refraction was predicted using the 3 formulas mentioned above. At 1-month, spherical equivalent refraction was calculated and the difference from the predicted refraction was reported as a mean numerical error (MNE). The Kruskal-Wallis test was used to find differences between the data as it was not normally distributed. Mann-Whitney U test was used to find differences between genders and 2 age groups of 50-59 and 60-70 years. **Results:** There were 57 females (45.6%) and 68 males (54.4%) included in the study with a mean age of 57.36 ± 6.17 years. There were no significant differences between the mean numeric error using the Kruskal-Wallis test, ($p = 0.161$). The Mann-Whitney U test did not find differences between the genders or the age groups using the 3 formulas. **Conclusions:** Keeping in view, the limitations of the study, the 3 formulas in our sample performed similarly in high myopes for post-operative refractive outcomes. More studies with randomized designs and optical biometry are needed to elucidate differences in mean numeric error more accurately between the formulae.

Publications

9. Comparison of corneal endothelial cell morphology in type-2 diabetes and nondiabetics

Abstract

Background: The purpose of this study was to evaluate and compare the values of hexagonality of endothelial cells among type-2 diabetics and nondiabetics. It also aimed at finding the correlation of the hexagonality of endothelial cells with the duration of diabetes, random blood sugar level, and severity of diabetic retinopathy in type-2 diabetics. **Methods:** A comparative cross-sectional study

How to cite: Firdous, M., Ullah, S., Shah, M., Qayyum, S., Ansari, M. H., & Aziz, A. (2024). Comparison of corneal endothelial cell morphology in type-2 diabetes and nondiabetics. Oman Journal of Ophthalmology, 17(3), 362-365.

was conducted for 8 months from January to August 2022. The data was collected from tertiary care eye hospital named Al-Shifa Trust Eye hospital Jhelum Road, Rawalpindi, Pakistan. After taking the informed consent, a complete history of each subject was taken. Visual acuity and refraction were performed using Early Treatment Diabetic Retinopathy Study visual acuity chart and then, complete slit-lamp anterior and posterior segment examination was performed followed by specular microscopy (TOMEY Specular Microscope EM-4000) to evaluate endothelial cell hexagonality. The diabetic subjects were checked for their random blood sugar levels immediately after specular microscopy using a digital glucometer and the readings were recorded. **Results:** Results showed that the hexagonality of endothelial cells was statistically significantly lower ($P = 0.000$) in type-2 diabetics than in nondiabetics. Correlation analysis of the hexagonality of endothelial cells showed a negative correlation ($P < 0.05$) with random blood sugar levels while no correlation ($P > 0.05$) with the duration of diabetes and severity of diabetic retinopathy. **Conclusions:** The study concluded that the hexagonality of endothelial cells was significantly different among the two groups under study, i.e., type-2 diabetics and nondiabetics.

10. Frequency of Elevated Intraocular Pressure in Patients with Acute and Chronic Anterior Uveitis

Abstract

Background: Elevated intraocular pressure (IOP) is a frequent and serious complication in patients with uveitis, potentially leading to secondary glaucoma and permanent vision loss. Understanding the frequency and associated risk factors of elevated IOP in patients with acute and chronic anterior uveitis is essential for effective

How to cite: Athar, T., Saad, M., Akhtar, M., Sabih, R., & Sohail, S. B. (2024). Frequency of Elevated Intraocular Pressure in Patients with Acute and Chronic Anterior Uveitis. Journal of Health and Rehabilitation Research, 4(3).

management and prevention of visual morbidity. **Objective:** This study aimed to determine the frequency of elevated IOP in patients with acute and chronic anterior uveitis and to identify the associated demographic and clinical factors. **Methods:** This This descriptive, cross-sectional study was conducted over six months at the Outpatient Department of Al-Shifa Trust Eye Hospital, Rawalpindi, involving 160 patients aged 20 to 60 years diagnosed with anterior uveitis. Patients were excluded if they were on anti-glaucoma medications, had specific ocular conditions, or had a pre-existing diagnosis of glaucoma or elevated IOP. Intraocular pressure was measured using Goldmann Applanation Tonometry, with elevated IOP defined as >21 mmHg. Demographic data and clinical history, including the duration and grade of uveitis, were recorded. Data were analyzed using SPSS version 25, with qualitative variables presented as frequencies and percentages, and statistical significance assessed using chi-square tests ($p \leq 0.05$). **Results:** The mean age of the study participants was 33.19 years ($SD \pm 7.26$). Elevated IOP was observed in 38.75% of the patients. A significantly higher frequency of elevated IOP was found in females (61.7% vs. 25% in males, $p = 0.000$), patients over 30 years of age (46.4% vs. 30.3%, $p = 0.026$), and those with hypertension (69.8% vs. 23.4% in non-hypertensive patients, $p = 0.000$). Grade I uveitis had the highest frequency of elevated IOP (100%), followed by grade III (42.9%), grade IV (4.1%), and grade II (0%) ($p = 0.000$). No significant association was found between elevated IOP and diabetes mellitus or the duration of uveitis. **Conclusions:** The study found a substantial frequency of elevated IOP in patients with anterior uveitis, particularly among females, older patients, and those with hypertension. These findings highlight the need for

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regular IOP monitoring and tailored management strategies in high-risk patients to prevent the development of secondary glaucoma and associated vision loss.

11. Mean Change in Endothelial Cell Density after Collagen Cross-Linking in Progressive Keratoconus: A Quasi Experimental Study

Abstract

Background: Corneal collagen cross-linking (CXL) is a minimally invasive technique that halts the advancement of keratoconus. The objective of our study was to determine mean change in endothelial cell density in patients with advancing keratoconus through specular microscopy who had undergone collagen cross-linking (CXL). **Methods:** A quasi-experimental study was done at the Cornea Clinic, Al-Shifa Trust Eye Hospital, Rawalpindi from June 2020 to January 2021. There were 42 patients that participated in the study. Patients were advised specular microscopy (SP.2000P, TOPCON, USA) before the CXL and endothelial cell density was recorded in each case. On follow up after 1 and 4 months of this procedure, specular microscopy was again advised and endothelial cell density was recorded again. **Results:** Patients ranged between 10-30 years of age with mean age of 17.8 ± 4.2 year. In our study 26 (61.9%) were male patients while 16 of them (38.1%) were female. Stratification with regard to age and gender was carried out. Mean change in endothelial cell density before CXL and after 1 month was found statistically significant while mean change in endothelial cell density before CXL and after 4 months of CXL was found statistically non-significant. **Conclusions:** In conclusion, results of this study indicate that a statistically significant decrease ($p < 0.005$) was observed in endothelial cell density as shown by specular microscopy in patients with progressive Keratoconus after 1 month of CXL, however it is noteworthy that after 4 months of the procedure the endothelial cell count returned to its initial level. There were minimal variations in results found between male and female patients. **Keywords:** Keratoconus; Cornea; Cross-linking; Corneal collagen Cross-linking; Keratoectasia

How to cite: Khan, S., Maqbool, A., Gohar, A., Arshad, U., Sharif, R., & Zia, S. (2024). Mean change in endothelial cell density after collagen cross-linking in progressive keratoconus: a quasi-experimental study. *Gomal Journal of Medical Sciences*, 22(2), 106-109.

12. IgG4-Related Orbital Disease: An Analysis of Patient Profiles, Clinical Presentation, and Histopathological Features

Abstract

Objective: To study various presentations of patients with a histopathologically confirmed diagnosis of IgG4 disease. **Methods:** This study is a retrospective review of medical records from the IgG4-RD registry at the Al-Shifa Trust Eye Hospital. Nine patients with orbital manifestations were identified. All had histopathologically confirmed diagnoses of IgG4-RD. Data obtained from the medical records included patient demographic information (name, age, gender), brief patient history, clinical presentation, histopathology reports, and diagnoses. **Results:** Most patients presented with proptosis and swelling in various parts of the orbital area. Some patients also presented with pain and diplopia. The most common orbital structures involved were the lacrimal gland and the extraocular muscles, with some patients also having soft tissue involvement. 4(44%) patients had bilateral orbital involvement, while the remaining 5(55%) had unilateral disease. **Conclusions:** Ophthalmic involvement is a feature of IgG4-RD and has significant implications regarding the diagnosis, prognosis, and treatment of patients with IgG4 disease.

How to cite: Taimur, F., Manzoor, A., Saad, M., Tahir, F., Khan, S., & Khalid, A. (2024). IgG4-Related Orbital Disease: An Analysis of Patient Profiles, Clinical Presentation, And Histopathological Features. *Journal of Rawalpindi Medical College*, 28(2).

Publications

13. Phenotypic and Genetic Heterogeneity of a Pakistani Cohort of 15 Consanguineous Families Segregating Variants in Leber Congenital Amaurosis-Associated Genes

Abstract

Background: Leber congenital amaurosis (LCA) is a congenital onset severe form of inherited retinal dystrophy (IRD) and a common cause of pediatric blindness. Disease-causing variants in at least 14 genes are reported to predispose LCA phenotype. LCA is inherited as an autosomal recessive disease. It can be an isolated eye disorder or as part of a syndrome, such as Senior Loken or

How to cite: Akhtar, Z., Altaf, S., Li, Y., Bibi, S., Shah, J., Afshan, K., & Firasat, S. (2024). Phenotypic and Genetic Heterogeneity of a Pakistani Cohort of 15 Consanguineous Families Segregating Variants in Leber Congenital Amaurosis-Associated Genes. *Genes*, 15(12), 1646.

Joubert syndrome. Sequencing studies from consanguineous populations have proven useful for novel variants identification; thus, the present study aimed to explore the genetic heterogeneity of 15 consanguineous Pakistani families, each segregating a severe IRD phenotype using targeted next generation sequencing. **Methods:** This study enrolled 15 consanguineous families, each with multiple affected cases of retinal dystrophy phenotype. DNA was extracted from blood samples. Targeted panel sequencing of 344 known genes for IRDs was performed, followed by Sanger sequencing for segregation analysis. **Results:** Data analysis revealed a total of eight reported (c.316C>T and c.506G>A in *RDH12*; c.864dup and c.1012C>T in *SPATA7*, as well as c.1459T>C, c.1062_1068del, c.1495+1G>A, c.998G>A in the *CRB1*, *LCA5*, *TULP1*, and *IFT140* genes, respectively) and four novel homozygous (c.720+1G>T in *LCA5*, c.196G>C in *LRAT*, c.620_625del in *PRPH2*, and c.3411_3414del in *CRB1*) variants segregating with disease phenotype in each respective family. Furthermore, a novel heterozygous variant of *CRB1* gene, i.e., c.1935delC in compound heterozygous condition was found segregating with disease phenotype in one large family with multiple consanguinity loops. **Conclusions:** Comprehensive molecular diagnosis of 15 consanguineous Pakistani families led to the identification of a total of 5 novel variants contributing to genetic heterogeneity of LCA-associated genes and helped to provide genetic counseling to the affected families. **Keywords:** Antenatal Care; Caesarean Section; Group Antenatal Care; Neonate; Patient Satisfaction; Preterm Birth; Traditional. **Keywords:** Leber congenital amaurosis; childhood blindness; autosomal recessive; genetic heterogeneity

14. Comparison between two-hole-assisted phaco-chop and stop-and-chop techniques for nuclear disassembly in residents' cataract surgery

Abstract

Purpose: The purpose of this study was to evaluate the safety of the novel two-hole-assisted phaco-chop technique as a transition between stop-and-chop and direct-chop techniques and to compare its phacoemulsification parameters with the stop-and-chop technique. **Methods:** A prospective quasi-experimental study was conducted at Al-Shifa Trust Eye Hospital,

How to cite: Naqaish, R., Alrawashdeh, H. M., Sabih, R., Naqvi, S. A., Osama, M., Sohail, S., & Niazi, M. (2024). Comparison between two-hole-assisted phaco-chop and stop-and-chop techniques for nuclear disassembly in residents' cataract surgery. *Saudi Journal of Ophthalmology*, 10-4103.

Rawalpindi, Pakistan. One hundred and three patients (103 eyes), aged 18 years and above, with nuclear sclerosis (NS)+2, NS +3, +4, cortical, and posterior subcapsular cataracts (WHO Cataract Grading Group) were included, whereas patients with uveitis, glaucoma, traumatic cataracts, small pupils, zonular weakness, lens subluxation, small palpebral fissures, soft cataracts (NS + 1), and posterior polar cataracts were excluded from the study. The stop-and-chop technique was performed in 58 (56.3%) patients, whereas the two-hole-assisted chop technique in the rest. Ultrasound time (UST), total surgical time, and volume of balanced salt solution (BSS) delivered were recorded. **Results:** The mean age of the participants was 65.12 ± 8.85 years. The comparison of the two techniques revealed no statistically significant difference in the UST ($P = 0.723$), volume of BSS used ($P = 0.102$), and total surgery time ($P = 0.517$). However, a significant positive correlation between cataract grade and UST (Spearman's $r = 0.888$, $P < 0.001$), BSS volume delivered (Spearman's $r = 0.831$, $P < 0.001$),

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and surgery time (Spearman's $r = 0.846$, $P < 0.001$) was observed. Moreover, the UST comparison between cataract grades revealed a significant difference between the three groups ($F = 185.09$ $P < 0.001$). $P < 0.05$ was considered statistically significant. **Conclusions:** The two-hole-assisted phaco chop is a safe and efficient transitional technique between stop-and-chop and direct-chop techniques for nuclear disassembly in cataract surgery performed by resident surgeons. In addition, the phacoemulsification parameters of the two-hole-assisted chop technique are comparable with the stop-and-chop technique.

15. Comparative Efficacy of Posterior Subtenon Kenacort Compared to Standard Surgical Treatment for Macular Hole Closure

Abstract

Background: Macular holes cause significant vision loss, particularly in older adults. Although standard surgical treatment (SDT) has been successful, there is increasing interest in less invasive treatments that might offer better outcomes, especially in terms of best-corrected visual acuity (BCVA) and macular hole closure. **Objective:** This study aimed to determine the effectiveness of posterior

How to cite: Rehman, M., Faheem, R., & Ullah, S. (2024). Comparative Efficacy of Posterior Subtenon Kenacort Compared to Standard Surgical Treatment for Macular Hole Closure. *Journal of Health and Rehabilitation Research*, 4(2), 1111-1116.

subtenon Kenacort (SBT) in closing macular holes and to compare its efficacy with standard surgical treatment (SDT). Additionally, the study examined the impact of macular hole classification on treatment outcomes in both groups. **Methods:** An interventional study was conducted at Al-Shifa Trust Eye Hospital in Rawalpindi, involving 60 subjects aged 45 to 65 years with idiopathic macular holes. Participants were selected using non-probability sampling. Group A (30 eyes) received two SBT injections three months apart, while Group B (30 eyes) underwent SDT, which included pars plana vitrectomy with internal limiting membrane (ILM) peeling and gas tamponade. OCT imaging and logarithm of the minimum angle of resolution (LogMAR) measurements were obtained for all subjects before treatment, with follow-up assessments conducted six months post-treatment. Data analysis was performed using SPSS version 25.0, with quantitative variables expressed as mean \pm SD and inferential statistics explored using ANOVA and paired sample t-tests. A p-value ≤ 0.05 was considered statistically significant. **Results:** Both treatment groups had thirty patients each with similar average macular hole sizes (SBT: $436 \pm 126 \mu\text{m}$, SDT: $439 \pm 127 \mu\text{m}$). In the SBT group, average BCVA improved from 1.48 to 0.846, while in the SDT group, it changed from 1.44 to 1.25. Macular hole classification significantly affected post-treatment BCVA scores in both groups ($p < 0.001$). The SBT group showed significantly greater BCVA improvement compared to the SDT group. **Conclusions:** Posterior subtenon Kenacort effectively closed macular holes and improved BCVA more than standard surgical treatment. Macular hole classification influenced post-treatment BCVA scores in both treatment groups, highlighting its importance in predicting treatment outcomes.

16. A comparative Cross-Sectional Study on Amblyopia and its relationship with Retinal Nerve Fiber Layer Thickness

Abstract

Background: Amblyopia affects approximately 1.75 percent of the world's population. Atrophic alterations in the lateral geniculate nucleus have been observed in amblyopic eyes, leading to the hypothesis that RNFL thickening is caused by a limitation of normal postnatal ganglionic cell reduction. To determine and compare the thickness of the retinal nerve fiber layer (RNFL) in all type

How to cite: Saeed, M. A. S. M., Ayub, F. A., & Aziz, A. A. (2024). A comparative Cross-Sectional Study on Amblyopia and its relationship with Retinal Nerve Fiber Layer Thickness. 17 May 2024, Research Square <https://doi.org/10.21203/rs.3.rs-4381187/v1>

of amblyopic and non-amblyopic eyes. **Methods:** A comparative cross-sectional study was conducted at Al-Shifa Trust Eye Hospital Rawalpindi over six months. Data were collected from 70 patients (140 eyes) using clinical structured Performa. RNFL thickness was measured using Optical Coherence Tomography (OCT). All the amblyopic patients were included in this study. A One-way ANOVA and

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paired sample t-test were applied to compare the RNFL thickness between different types of amblyopia and compare it with the non-amblyopic eyes. **Results:** The mean age of the patients was 10.20 ± 2.811 ranging from 5 to 16 years. The mean thickness of RNFL globally in strabismus amblyopia was 108.1 ± 14.1 whereas 108.1 ± 10.1 micrometers, and there is no statistical mean difference between thickness with a p-value > 0.05 . The mean value of RNFL thickness in anisometropia amblyopia for nasal, temporal, supra-temporal, supra-nasal, inferonasal, inferotemporal quadrants and for globally is 85.82 ± 20.7 , 75.67 ± 14.5 , 135.38 ± 16.4 , 121.05 ± 30.2 , 126.18 ± 28.5 , 143.92 ± 17.1 and 105.74 ± 11.1 respectively. There was no statistically significant difference found between the thickness of different types of amblyopia. **Conclusions:** There is no significant difference in RNFL thickness between different types of amblyopia. Similarly, there is no significant difference in the thickness of RNFL in amblyopic and non-amblyopic eyes as well. So RNFL thickness is not affected in children due to amblyopia.

17. Efficacy of as-needed intravitreal injection compared to 3-monthly loading of Anti-Vascular Endothelial Growth Factor Agents for Branch Retinal Vein Occlusion

Abstract:

Branch retinal vein occlusion (BRVO) is a prevalent retinal vascular disorder and a significant cause of vision impairment, particularly in individuals over the age of 50.

Objective: The basic aim of the study is to find the efficacy of as-needed intravitreal injection compared to 3-monthly loading of anti-vascular endothelial growth factor agents for branch retinal vein occlusion. **Methods:** This

How to cite: Khan, T.A., Naveed, S., Riaz, S., Anjum, S., Naureen, F., Hassan, A. (2024). Efficacy of as-needed intravitreal injection compared to 3-monthly loading of anti-vascular endothelial growth factor agents for branch retinal vein occlusion. *Biol. Clin. Sci. Res.J.*, 2024:1279. DOI: <https://doi.org/10.54112/bcsrj.v2024il.1279>

prospective, comparative study was conducted at Al-Shifa

Trust Eye Hospital, Rawalpindi from January 2024 to August 2024. A total of 55 patients diagnosed with BRVO were enrolled in the study. **Results:** Data were collected from 55 patients with a similar mean age of 53.45 ± 4.56 years and 52.4 ± 7.01 years, respectively. At baseline, the mean best-corrected visual acuity (BCVA) was comparable between the two groups (55.2 in Group A vs. 54.7 in Group B, $p = 0.67$), as was the mean central retinal thickness (CRT) ($485.6 \mu\text{m}$ in Group A vs. $490.3 \mu\text{m}$ in Group B, $p = 0.73$). There were no statistically significant differences between the groups in these baseline characteristics. **Conclusions:** It is concluded that both the PRN-only and loading phase + PRN regimens are effective for treating BRVO, with the loading phase regimen providing slightly superior visual outcomes. **Keywords:** Intravitreal Injection, Anti-VEGF, Branch Retinal Vein Occlusion, Efficacy, Loading Dose, Retinal Edema

18. Corneal changes in eyes with silicone oil tamponade: a comparative pre-and post-operative assessment

Abstract

Objective: This study aimed to evaluate and compare pre-and post-operative corneal changes in eyes treated with silicone oil tamponade. **Methods:** A comparative cross-sectional study was conducted at Al-Shifa Trust Eye Hospital in Rawalpindi, Punjab, Pakistan, enrolling subjects using a non-probability consecutive sampling technique undergoing silicone oil tamponade. Detailed ocular

How to cite: Khan, F., Amir, H., Ullah, S., Kanwal, F., Shah, M., & Naz, T. (2023). Corneal changes in eyes with silicone oil tamponade: a comparative pre-and post-operative assessment. *Journal of Xi'an Shiyu University, Natural Sciences Edition*, 166(12) DOI: 10.5281/zenodo.10390554

examination of the anterior and posterior segments was performed with slit lamp biomicroscopy. Corneal parameters, including principal corneal curvature K1, K2, its average KAVG, central corneal thickness (CCT), and anterior chamber depth (ACD), were measured with IOL Master 700 pre- and post-operatively. Data were entered and analyzed using DATATAB online web-based software. **Results:** A total of 50 subjects participated, including 34 (68%) males and 16 (32%) females, with a mean age of 48.10 ± 18.55 , ranging from 10 to 80 years. The mean pre- and post-operative values for

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K1, K2, KAVG, CCT, and ACD were 42.93 ± 1.91 , 44.67 ± 1.80 , 43.87 ± 1.63 , 529.14 ± 37.02 , and 3.79 ± 1.02 , and 42.71 ± 1.82 , 44.74 ± 2.01 , 43.81 ± 1.77 , 531.74 ± 38.18 , and 3.99 ± 1.00 , respectively. Comparing pre- and post-operative corneal parameters after one-month follow-up, no significant changes were observed. However, a statistically significant increase in ACD was observed ($p < 0.002$).

Conclusions: No significant changes in corneal parameters occurred in eyes with silicone oil tamponade, while an increase in anterior chamber depth was observed. **Keywords:** Anterior Chamber Depth (ACD), Central Corneal Thickness (CCT), IOL Master, K-Readings

19. Violet light transmission through eyeglasses and its effects on myopic children: A systematic review and meta-analysis

Abstract

Purpose: Myopia is a refractive error that impairs visual function and leads to visual blurring. This study aims to investigate the effect of violet light (VL) on controlling myopia, specifically in terms of axial length (AL), spherical equivalent refraction (SER), and visual acuity (VA).

Methods: A systematic review was conducted to compare

How to cite: Ullah, S., Umer, M. F., & Chandran, S. P. (2024). Violet light transmission through eyeglasses and its effects on myopic children: A systematic review and meta-analysis. *Saudi Journal of Ophthalmology*, 38(3), 235-242.

VL and single vision spectacles (SVSs) for treating childhood myopia. The search terms used were "Myopia" and "Violet Light." Extensive searches were carried out in the PubMed, Embase, and Cochrane databases. The mean differences were evaluated. The effects of the therapy were examined. Publication bias was assessed with a funnel plot and further investigated through sensitivity analysis. Meta analysis was performed using Bayesian statistics with Jeffery's Amazing Statistical Package.

Results: The meta-analysis included 126 myopic children: 64 in the VL group and 62 in the SVS group. The pooled effect size for AL shortening was evaluated as 0.659 ± 0.184 , with a 95% credible interval of 0.299–1.023. The pooled effect size for SER decrease was estimated as 0.669 ± 0.188 , with a 95% credible interval of 0.303–1.036. Likewise, for VA in LogMAR, after intervention (VL and SVS), the values were 0.082 ± 0.171 with a credible interval of 0.262–0.423. Publication bias was assessed with a funnel plot, which revealed no bias. Impact sizes for the fixed effect model were determined due to the similarity in study population, geography, type of intervention, and study design. **Conclusions:** VL transmission glasses play a significant role in controlling myopia among children, resulting in axial shortening, reduction of SER, and improvement in VA. However, further investigation is required to examine the long term rebound effect. **Keywords:** Axial length, spherical equivalent refraction, violet light, visual acuity. **Keywords:** Axial length, spherical equivalent refraction, violet light, visual acuity

20. Comparison of mean postoperative pain between topical anaesthesia and retrobulbar anaesthesia in patients with phacoemulsification procedure for cataract surgery

Abstract

Background: The purpose of the study was to compare the mean post-operative pain in patients undergoing phacoemulsification for cataract with topical anaesthesia vs. retrobulbar anaesthesia. **Methods:** An interventional study was carried out in a tertiary care hospital of Islamabad. The study duration was from 30th March 2021 to 29th September 2021. The adopted sampling technique was consecutive sampling. The sample size was 180

How to cite: Sharif, A., Awan, A. H., Khan, S. A., Shah, M., Ullah, S., & Anwar, A. (2024). Comparison of mean postoperative pain between topical anesthesia and retrobulbar anesthesia in patients with phacoemulsification procedure for cataract surgery. *Journal of Ayub Medical College Abbottabad*, 36(2), 270-273.

subjects divided into two groups of 90 each. Through the use of a lottery, patients were split into two groups of 90 each. Patients in group A received topical anaesthesia, whereas individuals in group B received retrobulbar anaesthesia. An Ophthalmologist performed a retrobulbar block on Group B using a 23-gauge needle and 5 mL of 2% Lidocaine. The researcher observes the patients for post-

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operative pain. SPSS 25 version was used for statistical analysis. **Results:** The research study included 180 patients in total. Participants ranged in age from 40 to 70, with a mean age of 56.26 ± 6.31 years, and 46% male vs. 54 % females. The study found the post-operative pain at 45 minutes after topical anaesthesia was 0.60 ± 0.67 and after retrobulbar anaesthesia was 1.40 ± 0.90 in patients undergoing phacoemulsification for cataract surgery. The results showed that Group A feel less pain compare to Group B and the significance value was ($p .0001$). **Conclusions:** The study concluded that topical anaesthesia is usually a best alternative for retrobulbar anaesthesia. The patient feel less pain with topical compared to retrobulbar anaesthesia. **Keywords:** Cataract; Phacoemulsification; Retrobulbar Anaesthesia; Topical Anaesthesia

21. Myopia Onset during COVID-19 Pandemic: A Global Public Health Concern

Abstract

Aim: To determine the onset of myopia among age groups 4 to 24 years visiting a tertiary care hospital. **Study Design:** Cross Sectional Study. Duration and Settings of the Study: Department of ophthalmology Avicenna Medical Complex Islamabad. Study duration was 15 months from 1 April

How to cite: Ullah, S., Shah, M., Qayyum, S., Khan, S. A., & Firdous, M. (2024). Myopia Onset during COVID-19 Pandemic: A Global Public Health Concern. *Journal of Clinical and Community Ophthalmology*, 2(01), 7-12.

2020 to 31 July 2021. **Methods:** Participants were enrolled using consecutive sampling techniques. Sample size was calculated on time-based concept. Those who fulfilling the inclusion criteria were included in the study. Myopia onset was defined as participants with Spherical Equivalent Refraction of at least -0.50DS or more on second follow-up after six-month period. Ophthalmic examinations like visual acuity were done with LogMAR (Bailey Lovie Chart panel 53x60cm) and refractive status was evaluated using Retinoscopy on first visit and follow-up visit scheduled after six months of first visit for each participant. Cycloplegic refraction with Cyclopentolate 1% were performed when needed. **Results:** A total of 420 subjects, including 52.62% female and 47.16% male. Pre-pandemic refractive status of all participants was 0 on first follow-up, and on second follow-up the magnitude of myopia - 1.23 ± 0.69 DS. Likewise, the mean corrected Visual acuity was 0.0 LogMAR (6/6) on second follow-up, while the mean uncorrected Visual acuity was 0.02 LogMAR. Statistically significant differences were observed with a CI level of 95% between the pre and post-pandemic refractive status of groups. **Conclusions:** Myopia onset were acerbated by global pandemic Covid-19 and lockdown. Also, the high magnitude of up to -3.50DS were observed on just 6 to 8 month follow-up which is alarming. **Keywords:** COVID-19, Children, Log MAR, Myopia

22. Myopia Progression During COVID19 Pandemic at a Tertiary Care Hospital

Abstract

Purpose: The lockdown due to COVID19 pandemic lead to many countries implementing a population lockdown. This study was designed to investigate myopic changes that occurred during lockdown due to the COVID19 pandemic in Pakistan. **Methods:** A prospective, cross-sectional study

How to cite: Shah, M., Ullah, S., Khan, S. A., & Naroo, S. A. (2022). Myopia Progression During COVID19 Pandemic at a Tertiary Care Hospital. *Malaysian Journal of Medical Research (MJMR)*, 6(3), 19-29.

was conducted from patients presenting to the outpatients department with symptoms suggesting a refractive problem. Subjects with a Mean Spherical Equivalent (MSE) level of myopia of at least -0.50DS were included. A second group of subjects that had emmetropia (MSE between -0.25DS and +0.25DS) were recruited. All subjects (including adults) underwent cycloplegic refraction and using objective and subjective techniques, to exclude any pseudo-myopia due to accommodation. **Results:** A total of 900 subjects were enrolled from 4 to 24 years. The myopia group consisted of 473 subjects (256 females) and the emmetropia group consisted of 427 subjects (224 females). There was no statistical difference in the ages of the groups. Both groups showed an increase in their level of myopia, which was statistically higher in the emmetropic group ($p < 0.001$). Further analysis was conducted, splitting

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the subjects into four age groups: 4-8 years; 9-12 years; 13-19 years; and 19-24 years. All age groups showed an increase in the magnitude of myopia, with the oldest age group showed the least increase, which was statistically significant ($p < 0.005$). **Conclusions:** An increase in the magnitude of myopia was seen in all subjects and across all age groups, but more so in the younger subjects. **Keywords:** Myopia Progression, COVID19, Lockdown, Refractive Changes

23. Computer Vision Syndrome: Pre and Post Treatment Assessment of Computer Users

Abstract

Objectives: The objective of the study was to assess ocular problems in individuals associated with computer and visual display unit uses and to assess the effect of therapeutic interventions on computer vision syndrome symptoms among computer users. **Methods:** This pre and post Interventional study was conducted among the software houses of Rawalpindi and Islamabad. The total duration of the study was 6 months. A sample of 338 was calculated. All the study subjects were randomly recruited from the selected Software houses. **Results:** The results of the study showed that out of 338 about 70.4% had headache, 50.9% have tired eyes, 33.1% have blurred near vision, 23.1% have blurred distance vision, 29.9% have glare problem, 45.9% have dry eyes, 57.4% have Itchy and Burning eyes, 40.8% have Red eyes, 26.3% have Lower back pain, 68.3% have Neck and Shoulder pain and 12.1% complained of Diplopia while working on VDUs. Pearson Chi Square test shows a highly significant results regarding reduction in symptoms with the use of Anti Reflective coating and UV coated lenses (p value < 0.05). Pearson Chi Square test also revealed a high and statistically significant association between, reduction of symptoms and working hours on computer use (p value < 0.05). There was a statistically significant increase in Post Tear Break up Time after intervention has been given to the patients from time 1 ($M=7.69$, $N=338$ and $SD3.274$) to time 2 ($M=9.24$, $SD=2.845$, $N=338$), $t = -17.048$ with a p value of $< .000$ (two tailed). The mean increase observed were ranging from -1.732 to 1.374 with CI (Confidence Interval) at 95%. **Conclusions:** The conclusion of the above study was that CVS related symptoms related to VDUs use can be prevented or reduced, by simply prescribing antiglare glasses with UV coatings and by providing the significant lubrication to ocular surface along with environmental modifications.

How to cite: Shah, Mutahir & Ullah, Saif & Amin, Farah & Khan, Saad. (2024). Computer Vision Syndrome: Pre and Post Treatment Assessment of Computer Users. Al-Shifa Journal of Ophthalmology 14. 133-140.

24. Visual Outcomes After Pediatric Cataract Surgery; A Retrospective Analysis

Abstract

Purpose: To evaluate stereopsis in refractive error patients with TNO stereo acuity test and to compare Stereopsis values in patients with glasses and without glasses. **Methods:** This Cross-sectional study were conducted among three sixty patients who have refractive error.

Auto-refraction, best corrected visual acuity and stereopsis were measured. Convenient nonrandom Sampling technique is used for collecting sample. The level of stereopsis was divided into no stereopsis, abnormal, equivocal and normal for refractive error patients. Data was collected from general OPD of Al-Shifa Trust Eye Hospital and analyzed by SPSS version 17. Paired simple t test was used to evaluate stereopsis before and after glasses. **Results:** A total of 360 subjects participated in this study. Majority of the participants were female $N= 218$ (60.6%) while remaining were male $N=142$ (39.4%). The mean and standard deviation (SD) of these ages ranging from 18 to 30 years were 23.9 and ± 3.8 . All participants in the study Presented with mean refractive error was 2.3 ($SD \pm 1.7$) with range of ± 1 to ± 6.00 Dioptic Sphere (DS) and ± 0.75 to ± 4.00 Dioptic Cylinder (DC). **Conclusions:** It was concluded that refractive error greatly reduced the stereo acuity and after the correction of Refractive error the stereo acuity on TNO test was improved statistically significant ($p < 0.05$).

How to cite: Ullah, Saif & Kawish, Ayesha. (2024). Visual Outcomes After Pediatric Cataract Surgery; A Retrospective Analysis. Al-Shifa Journal of Ophthalmology 17. 77-84.

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25. Assessment of Stereopsis with TNO Stereoacuity Test Among Refractive Error Patients

Abstract

Purpose: The purpose of this study was to estimate the amount of improvement during the follow-ups and improvement before and after the cataract surgery.

Methods: A retrospective study was carried out in the pediatric department at Al-Shifa trust eye hospital Rawalpindi Pakistan from July 2018 to December 2018. In this study total of 100 patients were included having the age of 2 to 11 years with congenital cataracts. The clinical record of patients was found through the computer. There visual acuity of both eyes was observed before and after the surgery.

Results: Visual acuity of all the patients was assessed and was measured in log-MAR. The mean visual acuity of a right eye before surgery was $1.05(\pm 0.155SD)$. While the mean visual acuity on the first follow-up of the right eye after surgery was found to be $0.60(\pm 0.36SD)$ and the mean visual acuity on the second follow-up after surgery was $0.46(\pm 0.43SD)$. The mean visual acuity of a left eye before surgery was $1.00(\pm 0.155SD)$ while the mean visual acuity on first follow-up after surgery was found to be $0.61(\pm 0.36SD)$. And the mean visual acuity on second follow-up after surgery was $0.44(\pm 0.36SD)$. **Conclusions:** Cataract surgery procedure results in a significant change of visual acuity. This has a positive impact on postoperative visual acuity as the visual acuity showed improvement.

How to cite: Sughra, Ume & Ullah, Saif. (2024). Assessment of Stereopsis with TNO Stereoacuity Test Among Refractive Error Patients. Al-Shifa Journal of Ophthalmology 17. 58-63.

26. Types of Refractive Errors and Visual Outcome with Spectacles and Telescopes among Albino Patients

Abstract

Purpose: To determine types of refractive error and Visual Outcome with spectacles and telescopes in Albinism.

Methods: This was a Cross-Sectional study conducted in Low Vision Department of Shifa Eye Foundation Hospital Haripur. Study duration was 6 months from March 2020 to September 2020. Sampling technique was non-probability convenience sampling. Refractive errors were evaluated subjectively and objectively. Best corrected visual acuity with spectacles and telescopes were assessed binocularly.

Results: A total of 37 patients with Albinism were examined and divided into two groups i.e., Ocular Albinism (OA) and Oculocutaneous Albinism (OCA). The frequency of OCA was 29 and that of OA was 07. OCA Astigmatism was the most common refractive error about 72.41%. Astigmatism was found with a mean value of 2.71D. Myopia had a mean value of -6.7D, while the degree of Hyperopia was found with a mean value of 7.20D. Main Refractive Errors found among OA was Myopia and Astigmatism with equal percentage of 42.85%, Hyperopia was 14.28%. Myopia was found with a mean value of -9.66D. Astigmatism was found with a mean value of 3.5D and Hyperopia was 5.12D. In OCA the uncorrected Visual Acuity (VA) was found with a mean value of 0.99 Log MAR. In OA it was found with a mean value of 0.90 Log MAR. With Spectacle in OCA it was 0.82 Log MAR while with Galilean telescope the value was 0.54 Log MAR. With Keplerian telescope it was 0.25 Log MAR and in OA with Spectacles the mean value was 0.72 Log MAR. **Conclusions:** Astigmatism was the most significant refractive error among Albino patients. VA had improved with spectacles and telescopes. Keplerian telescope improved vision more significantly compared with Spectacles and Galilean telescope.

How to cite: Shah, Mutahir & Ullah, Saif. (2024). Types of Refractive Errors and Visual Outcome with Spectacles and Telescopes among Albino Patients. Al-Shifa Journal of Ophthalmology 17. 13-17.

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27. Assessment of Dry Eye Disease among Patients with Keratoconus at Ophthalmology Department, Hayatabad Medical Complex, Peshawar

Abstract

Purpose: The aim of the study was to determine the frequency of Dry Eye Diseases among keratoconus and control groups among subjects visiting Ophthalmology department Hayatabad Medical Complex. **Methods:** It was a comparative cross-sectional study conducted between June 2019 to Dec 2019 in which Dry Eyes Diseases were

How to cite: Shah, Mutahir & Ullah, Saif. (2024). Assessment of Dry Eye Disease among Patients with Keratoconus at Ophthalmology Department, Hayatabad Medical Complex, Peshawar. Al-Shifa Journal of Ophthalmology 16. 138-143.

assessed among the Keratoconus and control groups using Mcmonnies Questionnaire. **Results:** A total of 24 subjects were recruited for this comparative cross-sectional study, which includes 12(50%) cases and 12(50%) controls. Mean age of the subjects was 22.34 ± 4.5 ; among these subjects 10(41.7%) were male with mean age of 20.25 ± 3.5 years and while the mean age of 14(58.3%) females was 24.53 ± 4.9 years. Mean Mcmonnies scores and standard deviation for cases and control were 17.50 ± 1.8 and 12.30 ± 1.2 respectively. Gender wise distribution of Mcmonnies score for cases among males and females were 18.50 ± 1.9 and 16.50 ± 1.7 respectively, while among controls the mean score for males and females were 11.30 ± 1 and 13.40 ± 1.4 respectively. **Conclusions:** The conclusion of study was that Dry Eye Diseases is strongly associated with Keratoconus as compared to control groups.

28. To determine the Causes of Severe Visual Impairment /Blindness in Children attending Schools for Blind in KPK

Abstract

Aim: To determine the causes of severe visual impairment /blindness in children attending schools for the blind in Khyber Pakhtunkhwa. **Methods:** This was basically a cross-sectional descriptive study. A sample of 106 children was

How to cite: Ullah, Saif. (2024). To determine the Causes of Severe Visual Impairment /Blindness in Children attending Schools for Blind in KPK. 16. 480-483.

taken using non-probability purposive sampling technique. Children with severe visual impairment and blindness were examined attending schools for blind in Khyber Pakhtunkhwa. Data of the students were collected using WHO designed form for severe visual impairment /blindness. Examination includes visual acuity testing using standard LogMAR Chart, Retinoscopy, Ophthalmoscopy and Anterior segment examination with magnifying loupe. Study was conducted from June to December 2013. **Results:** 3.8% of the children had visual impairment, 17% had severe visual impairment (corrected visual acuity less than 6/60 in the better eye) and 78.3% were blind. Retinal dystrophies (41%) was the commonest cause responsible for blindness followed by whole globe problems (19%), followed by lenticular pathology (14%) and the fourth factor the corneal pathology (9.50%). **Conclusions:** Retinal dystrophies were the major cause of blindness followed by whole globe problems. A high proportion of children were blind due to avoidable causes and consanguinity in parents was also high 62%. 95% of the children were having SVI/BL. The majority of causes acquired during childhood could be prevented or treated such as VAAD and measles. Key words: SVI (Severe visual impairment), Blindness, VAAD (vit. Associated disorders), children.

29. Improvement in Visual Acuity with Refraction in Low vision Patients at Low Vision Clinic

Abstract

Purpose: To study the improvement in visual acuity with refraction in low vision patients visiting low vision clinic.

Methods: Nineteen patients that include 13 males (68.42%) and 6 females (31.58%), with low vision visiting the low vision clinic were examined. Visual acuity was tested using standard log MAR chart. Retinoscopy was performed using the standard technique at 67cm working distance. In cases with

How to cite: Ullah, Saif & Shah, Mutahir & Safi, Siraj. (2024). Improvement in Visual Acuity with Refraction in Low vision Patients at Low Vision Clinic. 01. 01-06.

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dimmer reflexes, Radical retinoscopy at a 10cm working distance was performed and verified through subjective refraction. The study was conducted at Low Vision clinic, ophthalmology department, Hayatabad Medical Complex, Peshawar over a period of six months. **Results:** Median presenting visual acuity was 1.16 log MAR, with interquartile range of 2.1-0.6 log MAR. There was an improvement of 7 lines or more of visual acuity in 5 patients (26.32%), with 8 patients (42.11%) improving by 2-4 lines, and 3 patients (15.79%) improving by 1 line. There was no significant improvement in 3 patients (15.79%). A higher rate of improvement was attained in age groups 23-30 years and 80-95 years. When stratified by diagnosis, a higher rate of improvement in visual acuity (up to 13 lines) was attained in patients with Age-related macular degeneration. Other patients that also significantly improved (up to 7 lines) were patients with nystagmus and Optic atrophy. No improvement in visual acuity was seen in a patient with retinitis pigmentosa, 1 patient with nystagmus, and in 1 patient with Stargardt's maculopathy. One patient who was falsely categorized as a low vision patient, attained a visual acuity of 0.2 log MAR after doing proper refraction. **Conclusions.** A significant improvement in visual acuity was attained from the total low vision patients. With proper refraction, practitioner may take out a falsely categorized low vision patient from low vision category or may improve the visual acuity from severe to moderate level.

30. Assessment of Inter-pupillary Distance Amongst Age group of 15-75 years Visiting Eye OPD at Hayatabad Medical Complex, Peshawar

Abstract

Aim: To determine the Inter-pupillary distance (IPD) among patients age group 15 to 75 years visiting Out-patient department Ophthalmology Hayatabad Medical Complex Peshawar and to compare the difference between male and female IPD. **Methods:** A Hospital based cross-sectional descriptive study in which a total of 100

How to cite: VS, S. M. P., & Sadiquillah, F. I. A. C. L. E. (2018). Assessment of Inter-pupillary Distance Amongst Age group of 15-75 years Visiting Eye OPD at Hayatabad Medical Complex, Peshawar. General Section-Original Articles, 16(3), 817.

subjects were recruited from an Outpatient Ophthalmology department of Hayatabad Medical Complex Peshawar, using systemic random sampling and every 3rd patient in the selected age group, who is permanent resident of Peshawar, was taken. Distance and Near IPD were measured using a Pupillometer (NPi-200 Neuroptics) a gold standard technique and with Auto-refractometer (RM.8800 Auto-refractometer, Topcon, Tokyo, Japan). Each measurement was done thrice and the average was taken. **Results:** A total of 100 subjects aged 15 to 75years, which includes 50(50%) males and 50(50%) females. The mean IPD of all 100 subjects are 62.32 ± 3.67 (95% Confidence Interval 61.33-63.31), with mean IPD and standard deviation of 63.66 ± 3.70 and 60.99 ± 3.60 for males and females subjects respectively. The overall mean age was 38.93 ± 15.92 (39 SD ± 16 years for male subjects, 38 ± 15 years for female subjects). The FIPD and NIPD for all the study subjects were 62.66 ± 3.69 and 60.13 ± 3.10 . When stratified among different age groups the mean IPD and standard deviation for all the study subjects were 61.30 ± 3.55 , 62.05 ± 3.53 , 62.60 ± 3.60 and 63.35 ± 4.16 for 15-30years, 31-45years, 46-60years and 61-75years respectively. **Conclusions:** It was concluded that IPD varies among different age groups, also statistically significant difference exist between male and female IPDs ($P=0.014$).

31. Assessment of Congenital Color Vision Deficiency among high school children age group 12 to 16 years

Abstract

Objectives: Human color vision is normally trichromatic in the sense that a suitable mixture of red, green and blue lights which can match any color that we can see. Color blindness occurs when one or more of the cone types are

How to cite: Ullah, Saif. (2024). Assessment of Congenital Color Vision Deficiency among high school children age group 12 to 16 years. 13. 172-177.

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absent, or present but defective. It is a common X-linked genetic disorder. However, most of color blinds remain undetected due to absence of proper screening. To determine the prevalence of congenital color vision deficiency and identify the level of awareness about their color vision defect among high school students aged 12 to 16 years in Union Council MC4 District Charsadda, KPK. **Design:** This was basically a cross-sectional descriptive study. **Setting:** The study was conducted in high schools of union council MC4 district Charsadda from 4th October 2014 to 17th January 2015. **Methods:** A total of 1055 high school students in the selected age group were screened for congenital color vision defect using Ishihara's pseudo-isochromatic test 38 plate edition. The socio-demographic data and results of color vision test and ocular examination collected using pre-tested structured questionnaire. Data was entered and analyzed using SPSS statistical package version 15.0. **Results:** A total of 1055 high school children were screened with a mean age of 14 ± 2.0 years which includes 530 male and 525 female. Among these 46 cases (4.36%) (95% confidence interval 2.98 to 5.42) were color blind. Of these 32 cases (69.50%) involved deutan, 09 cases (19.50%) protan, 05 cases (11%) unclassified. Among males the prevalence of color vision deficiency was 42 cases (7.92%) and females 04 cases (0.76%). All of the color blind subjects were not aware of their status of color vision. **Conclusions:** The prevalence of congenital color vision deficiency in this study was significantly higher than the estimated prevalence for Asian population. Deutan was the most common defect. Early school screening for color vision defect is recommended. **Key words:** Color vision deficiency, Protan, Deutan, Ishihara plates

32. Comparison of Retinal Nerve Fiber Layer Thickness in Diabetic Patients with and without Diabetic Retinopathy and Healthy Individuals using Ocular Coherence Tomography

Abstract

Objectives: Using Ocular Coherence Tomography, the study aimed to examine the RNFL thickness of type diabetics, patients with Diabetic Retinopathy, and healthy persons. **Methods:** 101 patients from the outside patient department and the Retina department of Tertiary Eye Care Hospital participated in this research. The cross-sectional study design was used. Non-probability consecutive sampling was utilized as the sampling technique. Patients were selected according to inclusion criteria. Visual Acuity was assessed using an (ETDRS) Early Treatment Diabetic Retinopathy Study Visual acuity chart at a distance of 6m. After the Ophthalmological Examination was done by a doctor, Ocular Coherence Tomography (Heidelberg Spectralis) was performed to assess RNFL thickness. The association between different types of diabetic retinopathy, Type-2 Diabetes, Normal Healthy, and retinal RNFL thickness was determined using a one-way ANOVA test. **Results:** The age range of the participants was between 40 and 69 years, with a mean of 55.68 ± 10.437 years. 15.3% had diabetes for 1 to 5 years. 24% had Diabetes for 6 to 10 yea 19.9% had a Diabetes duration of 19.9%. The RNFL thickness was significantly decreased in type 2 diabetics, NPDR, and PDR as compared to normal Healthy individuals ($p < .001$). Age and duration of diabetes were closely correlated with the retinal nerve fiber layer ($p < 0.001$). **Conclusions:** This study indicated that the (retinal nerve fiber layer) RNFL was considerably thinner in all quadrants of diabetic retinopathy (NPDR, PDR), type 2 diabetics, and healthy persons. Age and duration of diabetes were significantly correlated with average RNFL thickness.

How to cite: Aslam, I., Qayyum, S., Firdous, M., & Ullah, S. (2023). Comparison of Retinal Nerve Fiber Layer Thickness in Diabetic Patients with and without Diabetic Retinopathy and Healthy Individuals using Ocular Coherence Tomography. *Malaysian Journal of Medical Research (MJMR)*, 7(3), 8-14.

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33. Endothelial Cell Count and Central Corneal Thickness in Type-2 Diabetes

Abstract

Objectives: This study aimed at evaluating and comparing the values of Endothelial Cell Density (ECD) and Central Corneal Thickness (CCT) among Type 2 Diabetic cases and Non-Diabetics. It also aimed at finding the correlation between ECD and CCT with the diabetes duration, Random Blood Sugar (RBS) levels, and more severe stages of Diabetic Retinopathy (DR) in the diabetic subjects. **Design:** Comparative Cross-sectional. Study Setting and Duration: The data was collected from the General Outdoor Patient Department (OPD) of Al-Shifa Trust Eye Hospital, Rawalpindi, Pakistan within duration of 8 months from January to August 2021. **Methods:** After taking the informed consent, a complete history of each subject was taken. ETDRS (Early Treatment Diabetic Retinopathy Study) visual acuity chart was used to evaluate Visual acuity and subjective refraction and then a complete slit-lamp anterior and posterior segment examination was performed followed by Specular Microscopy to measure the ECD and CCT. The diabetic subjects were checked for their RBS immediately after Specular Microscopy (TOMEY Specular Microscope EM-4000) using a digital glucometer and the readings were carefully recorded. **Results:** Results showed ECD to be significantly lower ($p = 0.000$) while CCT to be significantly higher ($p = 0.000$) in type-2 Diabetics than in Non-Diabetics. On correlation analysis, ECD was negatively correlated ($p < 0.05$) while CCT was positively correlated ($p < 0.05$) with diabetes duration, RBS, and severity of DR. **Conclusions:** This study concluded that the ECD and CCT were significantly different among diabetics and non-diabetics.

How to cite: Firdous, M., Ullah, S., Shah, M., & Qayyum, S. (2023). Endothelial cell count and central corneal thickness in type-2 diabetes. Malaysian Journal of Medical Research (MJMR), 7(1), 1-6.

34. Non-acceptance of Low Vision Aids (LVADs) among patients presented to Eye OPD in Poly Clinic Hospital Islamabad

Abstract

Background: Vision impairment is a public health problem and every patient with visual impairment doesn't accept low vision aids (LVA's). **Objective:** To explore the non-acceptability rate of low vision aids with the reasons for not opting for them. **Methods:** A cross-sectional study was conducted at the Department of Ophthalmology in the Polyclinic Hospital, Islamabad. A sample of $n=100$ Patients in the selected age groups 20 to 80 years diagnosed with age-related macular degeneration, retinitis pigmentosa, diabetic retinopathy, high myopia/hypermétropia, optic atrophy/neuropathies, and glaucoma were recruited using nonprobability purposive sampling technique. Data was collected using a predefined form to determine the willingness of low-vision patients to adopt LVAs. The non-acceptance rate was calculated as the percentage of participants declining LVA services, assessed through their responses on the form. **Results:** The mean age of the participants was 43.48 ± 14 with a range from 20 to 80 years. A total of $n=100$ patients out of which $n=58$ were males and $n=42$ were females. Among these $n=100$ patients, $n=91$ patients show non-acceptance with a gender distribution of $n=53$ male and $n=38$ female patients. The major reason for nonacceptance was unaffordability for LVA among males ($n=19$) and $n=06$), followed by usage difficulty, transportation, fear of losing jobs, social stigma, low necessity, and lack of awareness. **Conclusions:** Non-acceptance of low vision aids among the study population due to unaffordability, compounded by social stigma, financial constraints, and limited awareness, underscores the need to address these barriers for better device utilization and enhanced quality of life for visually impaired individuals. **Keywords:** blindness; vision aids; visual impairment

How to cite: Chaudhry, M., Anwar, A., Ahmed, S., Shah, M., & Ullah, S. (2023). Non-acceptance of low vision aids (LVADs) among patients presented to eye OPD in Poly Clinic Hospital Islamabad. The Rehabilitation Journal, 7(03), 12-17.

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35. Axial length changes after short term exposure to blue light among emmetropes with optically induce hyperopic defocus

Abstract

Objective: The study aimed to measure the transient axial length (AXL) changes after short-term exposure to blue light before and after hyperopic defocus. The study aimed to measure the transient axial length (AXL) changes after short-term exposure to blue light before and after hyperopic defocus. **Methods:** An interventional study design (quasi-experimental pre and post-interventional design) was conducted at Al-Shifa Trust Eye Hospital among optometry students using a non-probability judgmental sampling technique. Visual acuity was measured with LogMAR, and refractive status was determined with a Retinoscope. Blue light exposure was administered using a Blue Laser Pointer emitting a 405nm wavelength. Hyperopic defocus was induced using a -3.00DS lens in a trial frame. The IOL Master Zeiss 700 was used to measure the AXL. Data were entered and analyzed through online web-based software, Data tab. **Results:** A total of 30 subjects, including 06 (20%) males and 24 (80%) females, with a mean age of 20.67 ± 0.96 , participated in the study. Comparing Pre-defocus Axial length (PDAXL) and After Defocus Axial length (ADAXL) following 30 seconds (23.2 ± 0.69 , 23.19 ± 0.68 , $p 0.006$), 60 seconds (23.2 ± 0.68 , 23.2 ± 0.68 , $p 0.056$), and 90 seconds (23.2 ± 0.69 , 23.2 ± 0.69 , $p 0.002$) of exposure to blue light, a statistically significant difference was observed among the 30-second and 90-second exposure groups ($p 0.006$ and $p 0.002$, respectively), but not among the 60-second group ($p 0.056$). **Conclusions:** The study concludes that short-wavelength exposure and hyperopic defocus together cause axial length shortening, which could be employed to manage myopia progression.

How to cite: Ahmad Masood, Dr. Amtul Aziz, Fatima Iqbal, Sadaf Qayyum, Maryam Firdous, Dr. Ayesha Babar Kawish, & Saif Ullah. (2023). Axial length changes after short term exposure to blue light among emmetropes with optically induce hyperopic defocus. In xi'an shiyu daxue xuebao (Ziran Kexue Ban)/ Journal of Xi'an Shiyu University, Natural Sciences Edition (Vol. 66, Number 12, pp. 48–54).Zenodo.<https://doi.org/10.5281/zenodo.10390583>

36. Assessment of the effect of Posterior Sub-capsular cataract on the refractive status of the eye at the outpatient department of Hayatabad Medical Complex, Peshawar

Abstract

Introduction: Cataract-induced refractive change is the refraction change caused by a cataract. It can reach multiple diopters (D). It modifies expected refraction errors during cataract surgery by modifying axial length measurement. **Objective:** To find the effect of the Posterior subcapsular Cataracts on the refractive status of the eye. **Methods:** A cross-sectional study was progressed in Eye OPD in Hayatabad Medical Complex, Peshawar. 102 patients having Posterior Subcapsular Cataracts were part of this study. The detailed history and eye examination of the patient were recorded. The anterior segment was examined with a slit lamp for evaluation of the posterior subcapsular cataract. The refractive status of an eye having a posterior subcapsular cataract was determined using Retinoscopy and subjective refraction techniques. The axial length of the eye was measured using A-Scan. Keratometric reading was measured using Keratometer. The data was entered and analyzed through the SPSS version 16. **Results:** A total of 102 patients were included in this study. Of these, 27 (26.5%) were males and 75 (73.5%) were females. The mean age was 60.5 years with 5.8SD. Results from the study showed refractive error due to Posterior Subcapsular Cataracts were mainly myopic astigmatism (97.1%) and spherical myopia (2.9%) with 0.16SD. Patients with PSCs had myopic astigmatism with a mean value of (1.7diopters, 15.7%) with 0.93SD and spherical myopia with a mean value of (0.1D, 2.9%) with 0.67SD. The mean uncorrected visual acuity

How to cite: Amin, F., Safi, S., & Qayyum, S. (2022). Assessment of the effect of Posterior Sub-capsular cataract on the refractive status of the eye at the outpatient department of Hayatabad Medical Complex, Peshawar. Journal of Shifa Tameer-e-Millat University, 5(2), 99-103.

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was 1logMAR with 1.6SD. The mean corrected visual acuity was 0.3logMAR with 1.2SD. **Conclusions:** The most common refractive error found in PSCs was Astigmatism followed by Myopia. These results may help to clarify the Types of refractive errors in patients with PSCs and the prediction of visual outcomes with spectacles.

37. Association between Intraocular Pressure and Myopia Among Children Aged 7 to 16 years

Abstract

Objective: To investigate the association between high intraocular pressure and myopia in children and compare it to emmetropia, and to determine the relationship between elevated intraocular pressure and varying degrees of myopia. Study design and Setting: Comparative cross-sectional study was performed at the tertiary eye care hospital, Rawalpindi for six months from July 2021 to December 2021. **Methods:** Patients with myopia of greater than 0.5Ds and emmetropes with visual acuity of 6/6 were included. All patients underwent visual acuity, cycloplegic refraction, and fundus examination in order to exclude the myopic patients with other systemic and ocular disorders. Intraocular pressure and central corneal thickness were measured using a Tonopen tonometer and Pachymeter respectively. Data was entered on SPSS version 26 for analysis. Independent sample T-test and one-way ANOVA was utilized for inferential statistics. **Results:** A total of 218 subjects were included with a mean age of 11.38 ± 2.602 ranging from 7 to 16 years. Females 50.9% (n=111) were outnumbered by male participants 49.1% (n=107). The mean IOP in emmetropes was 13.35 ± 2.433 mmHg and in myopes was 15.22 ± 3 mmHg and there is a statistically significant mean difference between these groups (P-value <0.05). There is also a statistically significant mean difference between IOP and varying degrees of myopia, that is; low (13.46 ± 2.797), moderate (16.62 ± 2.981), and high (19.215 ± 2.184). **Conclusions:** The IOP was higher in high and moderate myopic eyes as compared to emmetropes. Moreover, a strong association was found between myopia and elevated IOP in children.

How to cite: Shahzadi, A., Firdous, M., Ayyub, F., Qayyum, S., & Zafar, R. (2023). Association between Intraocular Pressure and Myopia among Children Aged 7 to 16 Years. Journal of Bahria University Medical and Dental College, 13(03), 197-200.

38. Study protocol for a randomized control trial investigating the effectiveness of a multifaceted mHealth approach on adherence to antihypertensive treatment among patients in Pakistan

Abstract

Objective: Poor medication adherence is an essential contributor to Pakistan's high prevalence of uncontrolled hypertension. This study will be aimed to assess the efficacy of a one-of-a-kind developed intervention in improving medication adherence and treatment outcomes in hypertension patients compare the stereoacuity among varying degrees of uncorrected myopia and after its correction. Secondly, to compare stereoacuity before and after correcting myopia. **Methods:** Twelve months duration long randomized controlled trial from January to December 2021 will be carried out at Shaikh Zayed Medical Complex (SZMC), Lahore. A total of 440 patients aged 18 years and older diagnosed with hypertension in the last month with non-adherence to antihypertensive therapy <80% of pills used in the last 30 days and have access to a smartphone will be randomized into either the intervention group (n=220) or the control group (n=220). For the intervention arm, a comprehensive intervention, the "Multi-Aid-Package," consisting of seven items: written, voice, and graphics messages, animated video, educational material, and a 24/7 help service, has been designed. Standard care will be provided to the control group. The primary outcome will be improved adherence to antihypertensive medication, while the secondary outcome will be an alteration in systolic blood

How to cite: Arshed, Muhammad & Mahmud, Aidalina & Umer, Muhammad & Mashhadi, Fawad & Kawish, Ayesha. (2024). Study protocol for a randomized control trial investigating the effectiveness of a multifaceted mHealth approach on adherence to antihypertensive treatment among patients in Pakistan. Pakistan Journal of Medical Sciences. 41. 22-28. 10.12669/pjms.41.1.9272.

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pressure (SBP). The analysis will be intention to treat. **Conclusions:** According to this study, if the multifunctional Multi-Aid-Package proves to be a useful mobile health tool for improving hypertension patients' medication adherence, it will also significantly affect systolic blood pressure. In Pakistan and other comparable low- and middle-income countries LMICs, the Multi-Aid-Package ought to be taken into consideration as a means of enhancing adherence to medications among hypertension patients. **Keywords:** Mobile Health, mHealth, Interventions, Medication adherence, Hypertension

39. Neonatal outcomes, c-section rates, and patient satisfaction: a comparative study of Group Antenatal Care (GAC) and Traditional Antenatal Care (TAC)

Abstract

Background: Antenatal care is essential for ensuring the health of expectant mothers and their newborns. Traditional Antenatal Care (TAC) has been the standard model, but Group Antenatal Care (GAC) has emerged as a promising alternative that may offer improved outcomes and patient satisfaction by fostering better engagement and support among participants. **Objective:** To assess and

How to cite: Naqvi, R. A., Kawish, A. B., Khalid, T., & Butt, T. (2024). Neonatal outcomes, c-section rates, and patient satisfaction: a comparative study of Group Antenatal Care (GAC) and Traditional Antenatal Care (TAC). *Insights-Journal of Health and Rehabilitation*, 2(2 (Health & Rehab)), 544-550.

compare maternal and neonatal outcomes, caesarean section rates, and patient satisfaction between GAC and TAC, evaluating the effectiveness of GAC in enhancing healthcare delivery for expectant mothers and their newborns. **Methods:** This comparative cross-sectional study involved 74 expectant mothers (37 in each group) from two antenatal care models: GAC and TAC. Participants were enrolled using a non-probability sampling method. Data collection included structured questionnaires and hospital records, focusing on maternal demographics, neonatal outcomes, delivery methods, and patient satisfaction. All data were analysed using the Jaffery Amazing Statistical Package (JASP). **Results:** GAC participants showed significantly higher birth weights (mean difference = 310 g, $p = 0.043$) and lower preterm birth rates (8% vs. 24%, $p < 0.001$) compared to TAC participants. Additionally, caesarean section rates were lower in GAC (10.8%) than in TAC (29.7%). Patient satisfaction was notably higher in GAC, especially concerning doctor qualifications and hospital trust, while TAC scored better in hospital cleanliness and staff promptness. **Conclusions:** GAC significantly improves neonatal outcomes and patient satisfaction compared to TAC. These findings support further research and potential broader implementation of GAC as a superior model of antenatal care. **Keywords:** Antenatal Care; Caesarean Section; Group Antenatal Care; Neonate; Patient Satisfaction; Preterm Birth; Traditional Antenatal Care

40. Prevalence and associated factors of non-adherence to antihyperlipidemic medication: a nationwide cross-sectional survey in Pakistan

Abstract

Objective: This study's objective was to determine the prevalence and associated factors of non-adherence to antihyperlipidemic medications. **Methods:** The study covered hypertensive patients (21,451) aged 21–75 years, presenting to the primary and secondary healthcare facilities across Pakistan (covering 21 divisions) from January 2022 to April 2023. The outcome intended was non-adherence to antihyperlipidemic medication, which was assessed by SEAMS and pill-counting methods (non-adherence < 80%). The study found overall non-adherence to antihyperlipidemic medication of 60.6% across Pakistan, with the highest non-adherence rates found in Azad Jammu and Kashmir (71.9%) and the lowest in Islamabad (47.7%). Multivariable logistic regression analysis revealed that female, no health card (Sehat Sahulat Program government insurance), < 5 years of illness, < 5 daily medications, and dose frequency of twice daily revealed a

How to cite: Arshed, M., Umer, M.F., Kiran, M. et al. Prevalence and associated factors of non-adherence to antihyperlipidemic medication: a nationwide cross-sectional survey in Pakistan. *Sci Rep* 14, 20613 (2024).

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positively significant association with non-adherence. **Results:** A total of 51,902 patients were approached for the study. After excluding patients (17,210) and those refusing participation (13,241) the remaining patients (21,451) were retained and interviewed regarding their medication adherence. **Conclusions:** We determined non-adherence among patients taking antihyperlipidemic for primary or secondary prevention of CVDs in a country with constrained resources. Patients with hyperlipidemia generally had high non-adherence rates. We also examined the elements that affect non-adherence to antihyperlipidemic medication among various ethnic groups; some highlighted operational flaws in the healthcare system that require immediate attention. Since non-adherence shouldn't be viewed as the patient's fault but rather as a critical warning indicator that needs to be addressed for this significant illness, patients and professionals need to collaborate to address some of the other unknown factors immediately. Antihyperlipidemic medication non-adherence is a multifaceted, multifactorial problem that is abundant and has no simple solution. **Keywords:** Non-adherence, Antihyperlipidemic medications, Compliance, Lipid lowering drug

41. The Influence of Postpartum Stay on Maternal Nutrition, Relationships, and the Overall Experience of Childbirth in Rawalpindi, Pakistan

Abstract

Background: The postpartum period is critically important for women, involving complex adjustments. Understanding their diverse experiences is essential for optimal postpartum care. This qualitative study aimed to explore postpartum experiences among women attending primary care facilities in Rawalpindi/Islamabad, Pakistan.

Methods: Using a qualitative approach, we conducted in-depth interviews with 20 women who had given birth within the past six months. Participants were purposively selected from family medicine clinics in Rawalpindi. An unstructured interview guide explored maternal nutrition, rest, bonding, newborn care, healthcare access, and cultural norms. Thematic analysis identified recurring patterns in the narratives. **Results:** Six themes emerged, revealing complex interactions between cultural norms, familial dynamics, and modern expectations. Maternal nutrition unveiled cultural influences on dietary choices. Rest highlighted tensions between tradition and responsibilities. Bonding emphasized familial support, while newborn care showcased family-guided practices. Healthcare access underlined the need for personalized services, and cultural traditions illuminated the balancing act between tradition and well-being. **Conclusions:** This study offers a comprehensive insight into postpartum experiences in Pakistan's context. Cultural sensitivity in postpartum care is crucial, integrating tradition with evidence-based practices. Postpartum period is crucial for mothers, neonates, families and society as a whole as it can have long-term effects on all the lives involved. **Keywords:** Postpartum care; maternal and new-born care; Pakistan

How to cite: Abdullah, M. A., Ali, K. N., Sattar, N. Y., & Kawish, A. B. (2024). The Influence of Postpartum Stay on Maternal Nutrition, Relationships, and the Overall Experience of Childbirth in Rawalpindi, Pakistan. *Pakistan Journal of Public Health*, 14(Special. NI), 155-160.

42. Assessment of Psychological Well-being of Doctors Working in Public and Private Hospitals of Gilgit-Baltistan, Pakistan: Assessment of Psychological Well-being of Doctors

Abstract

Objective: To assess the psychological well-being of doctors who were working in public and private hospitals of Gilgit-Baltistan, Pakistan. **Methods:** A cross-sectional study was conducted for six months, during which data were gathered from a sample of 214 participants chosen through non-probability convenient sampling at various public and private hospitals in the region. Data were

How to cite: Sabah, N. U., Kawish, A. B., Javed, S., Kiyani, Y., Batool, S., & Khan, S. A. (2024). Assessment of Psychological Well-being of Doctors Working in Public and Private Hospitals of Gilgit-Baltistan, Pakistan: Assessment of Psychological Well-being of Doctors. *Pakistan Journal of Health Sciences*, 85-89.

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analyzed using SPSS version 26.0. An Independent sample t-test was applied to compare the psychological well-being of doctors working in the public and private sectors. DASS scale and self-rated held were used to assess the mental health of doctors. **Results:** Among the 214 respondents, the majority were male doctors. Moreover, the study population's majority was working in the public sector. It was noted that the majority of the study population lies in the normal to mild range of depression, anxiety, and stress. Results also revealed that there was no significant difference in the psychological health of doctors in public and private hospitals. **Conclusions:** It was concluded that the psychological health of doctors working in public and private hospitals of Gilgit Baltistan has no significant difference. **Keywords:** Doctors, Mental Health, Pakistan, Psychological Well-Being, Depression, Anxiety, Stress Scale (DASS-21)

43. Risk perception about communicable and vector borne diseases among international travellers to Pakistan: A cross-sectional study

Abstract

Objective: The objective of this study is to determine the risk perception about communicable and vector-borne diseases among international travellers arriving from different countries and to find any association between the level of risk perception and independent variables.

Methods: A cross-sectional study was conducted with 426 participants enrolled through convenient sampling technique. An already validated questionnaire was used to collect information. Chi square test was applied to ascertain any significant association between dependent and independent variables. Out of 426 respondents, only 226 (53%) had a high risk perception, whereas 220 (47%) had a low risk perception. A significant association was noted between the level of risk perception and gender ($\chi^2=20.9$, $p=0.000$), level of education ($\chi^2=42.9$, $p=0.000$), nationality ($\chi^2=7.5$, $p=0.006$) and region of arrival of the passengers ($\chi^2=26.2$, $p=0.000$). **Results:** The results of the study revealed that 220 (47%) of the travellers had a low risk perception that may lead to an increase in the burden on healthcare system in Pakistan as well as exporting any new disease from Pakistan to other parts of the world where it does not already exist. **Conclusions:** It could be concluded that half of the travellers arriving in Islamabad, the capital of Pakistan, have a very low risk perception about communicable and vector-borne diseases that may lead to increased burden on the healthcare system in Pakistan as well as export of any new disease from Pakistan to other parts of the world where it does not already exist. According to this study, almost half of our travellers are not following sufficient protective measures or any health advisory. Our study also shows an inadequate level of traveller knowledge and poor utilisation of travel health services. The study results highlight the need of a proper travel health advisory at the national level, to be adopted by all incoming international travellers. As most of the travellers were not interested in seeking health advice, there is a need to create awareness as well as health promotion. **Keywords:** Travel medicine, Health advisory, Traveller's health, Risk perception

How to cite: Saeed, S., Tahir, Q., & Kawish, A. B. (2024). Risk perception about communicable and vector borne diseases among international travellers to Pakistan: A cross-sectional study. JPMA. The Journal of the Pakistan Medical Association, 74(3), 549-

44. Assessment of the Effect of Single Session Panretinal Photocoagulation on Macular Thickness in Diabetic Patients

Abstract

Objective: This study assesses the impact of a single session of PRP on macular thickness in patients with PDR.

Methods: Conducted at Lahore General Hospital's Department of Ophthalmology, this quasi-experimental study evaluated macular thickness pre- and post-PRP in 100 eyes of diabetic patients aged 18-65, using the OCT-Topcon 3D for measurements. Participants underwent a standardized PRP procedure with an

How to cite: Tahir, Faizan & Fk, Akhtar & Saad, Muhammad. (2024). Assessment of the Effect of Single Session Panretinal Photocoagulation on Macular Thickness in Diabetic Patients. 5.

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Argon Laser, and macular thickness data were analyzed using SPSS, focusing on changes documented at one week post-treatment. **Results:** The study demonstrated a statistically significant increase in macular thickness post-PRP ($p < 0.001$). The average change in macular thickness was $13.38 \pm 8.93 \mu\text{m}$. Subgroup analyses across various demographic and clinical parameters confirmed consistent patterns of macular thickening, notably within different age groups and durations of PDR. **Conclusions:** This study confirms that PRP, while effective in controlling neovascularization in PDR, must be balanced against the risk of induced macular edema. Careful monitoring of macular thickness is essential to optimize patient outcomes and prevent vision deterioration following PRP treatment. **Keywords:** Hypertension; Central Retinal Vein Occlusion; OCT Macula

45. Comparative Analysis of Refractive Outcomes Using Optical and Ultrasound Biometry in Phacoemulsification Cataract Surgery: Refractive Outcomes in Optical vs. Ultrasound Biometry

Abstract

Background: Accurate biometry is critical for optimal visual outcomes in cataract surgery. Both optical and ultrasound biometry are widely used, but their comparative effectiveness remains under evaluation. **Objective:** To compare the refractive outcomes of optical and ultrasound biometry in patients undergoing elective phacoemulsification cataract surgery. **Methods:** This prospective cohort study included 352 patients aged 30-60

How to cite: Sabih, R., Saad, M., Arshad, H., Sohail, S. B., & Faheem, R. (2024). Comparative Analysis of Refractive Outcomes Using Optical and Ultrasound Biometry in Phacoemulsification Cataract Surgery: Refractive Outcomes in Optical vs. Ultrasound Biometry. *Journal of Health and Rehabilitation Research*, 4(3), 1-5.

years undergoing elective phacoemulsification with in-the-bag IOL implantation. Patients were randomly assigned to either optical biometry using the Zeiss IOL Master 700 or ultrasound biometry with Axis Nano contact A-mode echography. Visual acuity and spherical equivalent were measured at baseline and 4 weeks post-operatively. Data were analyzed using SPSS version 25, with independent t-tests comparing outcomes between groups. **Results:** The mean post-operative visual acuity was 0.83 ± 0.22 , with a mean spherical equivalent of -0.88 ± 0.16 . No significant difference was found between the ultrasound (-0.89 ± 0.17) and optical biometry (-0.87 ± 0.16) groups ($p = 0.152$, 95% CI -0.06 to 0.01). **Conclusions:** Both optical and ultrasound biometry provide comparable refractive outcomes in cataract surgery, with no significant difference in post-operative spherical equivalent. **Keywords:** Hypertension; Central Retinal Vein Occlusion; OCT Macula

46. Peripapillary Retinal Nerve Fiber Layer Thickness in Patients with Unilateral Retinal Vein Occlusion

Abstract

Background: Retinal vein occlusion (RVO), including branch (BRVO) and central retinal vein occlusion (CRVO), can lead to vision loss and optic nerve damage. Understanding changes in peripapillary retinal nerve fiber layer (pRNFL) thickness in affected and fellow eyes is crucial for managing these conditions. **Objective:** This study evaluated longitudinal changes in pRNFL thickness in eyes with BRVO and CRVO, and their fellow eyes, compared with normal controls. **Methods:** In this retrospective case-control study, 68 patients with newly diagnosed unilateral RVO (42 BRVO, 26 CRVO) and 45 controls were included. pRNFL thickness was measured at baseline, 6, 12, and 24 months using spectral-domain optical coherence tomography (SD-OCT) in six sectors. Baseline characteristics like age, gender, hypertension, and diabetes were recorded. Statistical analyses were conducted using SPSS 23.0, with one-way ANOVA, Pearson's chi-square test, paired t-tests, and repeated-measures ANOVA. **Results:** At baseline, BRVO-affected eyes had a global pRNFL thickness of $119.15 \pm 17.71 \mu\text{m}$, higher than fellow eyes at $104.52 \pm 10.46 \mu\text{m}$ ($p <$

How to cite: Alizai, A. H. K., Ahmad, Y., Ahmad, F., Khan, T. A., Saad, M., & Faheem, R. (2024). Peripapillary Retinal Nerve Fiber Layer Thickness in Patients with Unilateral Retinal Vein Occlusion. *Journal of Health and Rehabilitation Research*, 4(3), 1-8.

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0.001). CRVO-affected eyes had a baseline pRNFL of $136.04 \pm 36.33 \mu\text{m}$, compared to $99.93 \pm 13.59 \mu\text{m}$ in fellow eyes ($p < 0.001$). At 24 months, only the temporal sector in CRVO eyes showed significant pRNFL differences. Global pRNFL thickness in fellow eyes of both BRVO and CRVO groups decreased significantly at 24 months, with no significant change in the control group. Fellow eyes of the CRVO group had significantly lower pRNFL thickness at 12 and 24 months compared to BRVO and control groups. **Conclusions:** Both BRVO and CRVO affect pRNFL thickness in fellow eyes, with CRVO showing more susceptibility to damage. This suggests a shared vascular abnormality between RVO and glaucoma, highlighting the importance of careful pRNFL monitoring, particularly in CRVO patients. Antenatal Care. **Keywords:** Branch Retinal Vein Occlusion, Central Retinal Vein Occlusion, pRNFL Thickness, Spectral-Domain Optical Coherence Tomography.

47. A Case of Vogt-Koyanagi-Harada Disease and Retinal Peri-Phlebitis in a Patient with Presumed Ocular Tuberculosis

Abstract

A middle-aged hypertensive female presented with headaches, tinnitus, and blurred vision for two weeks. Clinical examination revealed mild vitritis and bilateral multifocal exudative detachments at the posterior pole, together with peripheral vascular cuffing and periphlebitis. Laboratory testing pointed towards isolated presumed intraocular tuberculosis (IOTB) as the probable cause. However, the patient strongly responded to high-dose intravenous and tapered oral corticosteroids, leading to complete resolution of detachments within 10 days of therapy initiation. Anti-tubercular therapy (ATT) was begun after one week of presentation, and no recurrence of symptoms was noted for the next 18 months. A case of Vogt-Koyanagi-Harada (VKH) disease-like presentation occurred after a probable previous subclinical episode(s) of presumed IOTB, resulting in sclerosed vessels in the retinal periphery. **Keywords:** retinal peri-phlebitis, optical coherence tomography, tuberculous uveitis, vogt-koyanagi harada, exudative retinal detachment

How to cite: Amjad, M., & Zafar, A. (2024). A Case of Vogt-Koyanagi-Harada Disease and Retinal Peri-Phlebitis in a Patient with Presumed Ocular Tuberculosis. *Cureus*, 16(7).

48. Outcomes of 23-Gauge Pars Plana Vitrectomy in Various Vitreoretinal Diseases

Abstract

Background: This study aimed to evaluate the safety, efficacy, and complications of 23-gauge (23-G) pars plana vitrectomy (PPV) in the treatment of various vitreoretinal diseases. **Methodology:** A retrospective, cross-sectional study was conducted at Al-Shifa Trust Eye Hospital, Rawalpindi. All the eyes undergoing 23-G PPV between June 2020 and May 2023 meeting the inclusion criteria were included. Surgical outcomes and complications were assessed. **Results:** A total of 350 eyes were included in our data. The most common indication was rhegmatogenous retinal detachment (RRD) ($n = 144$, 41.1%), followed by diabetic tractional retinal detachment (TRD) ($n = 98$, 21%). Satisfactory anatomical outcomes were achieved in all the indications. The primary success rate was 87.5% for RRD and 96.9% for TRD. The overall complication rate was 17.7%, with postoperative cataracts being the most frequent. **Conclusions:** The 23-G PPV technique has proven to be a safe and effective approach for the surgical management of various vitreoretinal diseases, demonstrating favorable anatomical outcomes and a low rate of complications.

How to cite: Hannan, A., Shaheen, F., & Saad, M. (2024). Outcomes of 23-Gauge Pars Plana Vitrectomy in Various Vitreoretinal Diseases. *Cureus*, 16(11).

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49. Mean Ocular Perfusion Pressure Effect During Pars Plana Vitrectomy on the Foveal Avascular Zone: A Pilot Study

Abstract

Purpose: To evaluate the effect of mean ocular perfusion pressure on the foveal avascular zone (FAZ) area in eyes with successful retinal detachment (RD) surgery. **Methods:** This prospective pilot fellow eye-controlled study measured the intraoperative mean ocular perfusion pressure in eyes having surgery for rhegmatogenous RD (RRD). Postoperatively, the FAZ area was measured; the change was calculated as the difference in the FAZ area between the operated eye and the contralateral control eye. **Results:** The study comprised 8 patients with a mean age (\pm SD) of 53.38 ± 13.92 years. The mean superficial FAZ area was not different between operated eyes and control eyes, while the deep FAZ area was significantly larger in operated eyes. There was a strong negative correlation between the mean ocular perfusion pressure and the change in the deep FAZ area (Spearman ρ , -0.73 ; $P = .04$); the correlation between the mean ocular perfusion pressure and the change in the superficial FAZ area was not significant (Spearman ρ , -0.24 ; $P = .57$). A significant linear regression was found between the mean ocular perfusion pressure and the change in the deep FAZ area ($R^2 = 0.388$). The predicted enlargement of the deep FAZ area was 0.03 mm with every 1 mm Hg decrease in the mean ocular perfusion pressure. **Conclusion:** Lower intraoperative mean ocular perfusion pressure is associated with enlargement of the deep FAZ area in eyes having successful RRD surgery.

How to cite: Shaheen, F., Khan, H. A., Afzal, F., & Awan, M. A. (2024). Mean Ocular Perfusion Pressure Effect During Pars Plana Vitrectomy on the Foveal Avascular Zone: A Pilot Study. *Journal of VitreoRetinal Diseases*, 8(2), 152-157.

50. Myopia Onset during COVID-19 Pandemic: A Global Public Health Concern

Abstract

Aim: To determine the onset of myopia among age groups 4 to 24 years visiting a tertiary care hospital. **Study Design:** Cross Sectional Study. Duration and Settings of the Study: Department of ophthalmology Avicenna Medical Complex Islamabad. Study duration was 15 months from 1 April 2020 to 31 July 2021. **Methods:** Participants were enrolled using consecutive sampling techniques. Sample size was calculated on time based concept. Those who fulfilling the inclusion criteria were included in the study. Myopia onset was defined as participants with Spherical Equivalent Refraction of at least -0.50 DS or more on second follow-up after six month period. Ophthalmic examinations like visual acuity were done with LogMAR (Bailey Lovie Chart panel 53x60cm) and refractive status was evaluated using Retinoscopy on first visit and follow-up visit scheduled after six months of first visit for each participant. Cycloplegic refraction with Cyclopentolate 1% were performed when needed. **Results:** A total of 420 subjects, including 52.62% female and 47.16% male. Pre-pandemic refractive status of all participants was 0 on first follow-up, and on second follow-up the magnitude of myopia -1.23 ± 0.69 DS. Likewise the mean corrected Visual acuity was 0.0 LogMAR (6/6) on second follow-up, while the mean uncorrected Visual acuity was 0.02 LogMAR. Statistically significant differences were observed with a CI level of 95% between the pre and post-pandemic refractive status of groups. **Conclusion:** Myopia onset were acerbated by global pandemic Covid-19 and lockdown. Also the high magnitude of up to -3.50 DS were observed on just 6 to 8 month follow-up which is alarming. **Keywords:** COVID-19, Children, Log MAR, Myopia

How to cite: Ullah, S., Shah, M., Qayyum, S., Khan, S. A., & Firdous, M. (2024). Myopia Onset during COVID-19 Pandemic: A Global Public Health Concern. *Journal of Clinical and Community Ophthalmology*, 2(01), 7-12.

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51. Digital Eye Strain and Computer Vision Syndrome Among Doctors

Abstract

Purpose: To find the incidence and risk factors of digital eye strain among doctors. **Methodology:** An online questionnaire was designed including the symptoms of digital eye strain. Based on the responses, digital eye strain score was calculated by using a pre-decided formula. If the participant's total digital eye strain (DES) score was greater than six points, it meant that they were experiencing digital eye strain. **Results:** Within the allotted period, 228 doctors answered the questionnaire. The mean age of the doctors was 29 ± 2.58 years, out of which 147 (66.22%) were males. 54% were postgraduate residents (n=120), 20.3% were house officers (n=45) and 16.2% were consultants (n=36). A smart phone was the most often utilized digital device (n=216, 97.3%). Of the doctors, 35.6% spent 4-6 hours a day using digital devices, while 30.1% spent 6-8 hours a day using them. There was statistically significant association between digital eye strain score and screen time in hours per day ($p=0.028$). However no statistically significant association was found between the type of digital device used and the digital eye strain score ($p=0.164$). **Conclusion:** The association between DES severity and screen time highlights the importance of moderating digital device usage to alleviate symptoms. While specific device preferences did not significantly influence DES severity, factors like screen brightness and viewing distance may play crucial roles. **Keywords:** Asthenopia, Smart Phone, Physicians

How to cite: Liaqat U, Khalid A.U, Khurana D.A, Ammar A.S, Sohaib A.U. Digital Eye Strain and Computer Vision Syndrome Among Doctors. Ophthalmol Pak. 2024;14(4):110-115

52. Original Article Comparison of Fluorometholone 0.1% and Cyclosporine 0.05% in the Treatment of Vernal Keratoconjunctivitis

Abstract

Purpose: To compare the effectiveness of Fluorometholone 0.1% and Cyclosporine 0.05% in the treatment of vernal keratoconjunctivitis. **Study Design:** Quasi experimental study. **Place and Duration of Study:** Hayatabad Medical Complex, Peshawar. **Methods:** This study includes 104 patients divided into 2 groups. Patients in Group A were given topical Fluorometholone 0.1% while group B were given topical Cyclosporine 0.05%. Signs and symptoms were graded from scale 0-10 at the start of treatment and then at day 7,14 and 30. Drug was considered effective if the final score was equal to or less than 3 at day 30. **Results:** Mean age of the patients was 9.96 ± 2.722 years in group A and 10.02 ± 2.790 years in group B. Mean baseline score was 6.90 ± 0.721 in group A and 5.87 ± 0.768 in group B. In group A, 45 (86.5%) patients showed effectiveness while in group B, 36 (69.2%) patients showed effective results. Fluorometholone gave superior results as compared to Cyclosporine in patients with severe disease i.e., baseline score ≥ 6 . Systemic allergic associations were noted in 44.2% patients in group A and 36.5% patients in group B. **Conclusion:** These findings suggest that Fluorometholone may be a preferable treatment option for vernal keratoconjunctivitis, particularly in cases of more severe disease. However, considerations regarding systemic allergic associations should also be taken into account when making treatment decisions. **Keywords:** Fluorometholone, Cyclosporine, Vernal Keratoconjunctivitis.

How to cite: Khalid AU, Liaqat U. Comparison of Fluorometholone 0.1% and Cyclosporine 0.05% in the Treatment of Vernal Keratoconjunctivitis. 2024;40(2):169-173

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53. Article WHO Hand Hygiene Observation Form for Application in an Optometric Training Facility in a Tertiary Eye Care Hospital in Punjab, Pakistan

Abstract

Background: Adherence to hand hygiene practices is essential in healthcare settings for the safety of both patients and health professionals. This study assesses the application and knowledge of hand hygiene practices among students of optometry. **Methods:** A cross-sectional study was conducted on 69 students of all four professional

How to cite: Sehar, N., Asgher, M., Batool, I., Ayuub, F., & Saeed, A. (2024). WHO Hand Hygiene Observation Form for Application in an Optometric Training Facility in a Tertiary Eye Care Hospital in Punjab, Pakistan. *Optometry & Visual Performance*, 12(2).

years of optometry. Data was collected with a universal non-probability sampling technique by using an adapted World Health Organization (WHO) Hand-Hygiene Knowledge questionnaire for health-care workers along with a WHO Observation form. **Results:** Fifty-eight students completed the adapted WHO Observation form, according to which most of the instruments were not disinfected before use. The adapted WHO Hand-Hygiene Knowledge questionnaire was filled out by all students. Fifty-four (78.2%) students did not use an alcohol hand rub routinely. Only 15 (21.7%) students had received training in hand hygiene in the last three years, and 27 (39.1%) were aware of "My Five Moments for Hand Hygiene." Forty-two (60.9%) students washed their hands 10 times a day, while 33 (47.8%) students stated that an alcohol hand rub requires 20 seconds to kill most of the germs. No statistically significant differences between students of all professional years and timings recommended by WHO were observed ($p=0.370$). According to 57 (82.6%) students, practicing hand hygiene actions before touching a patient can reduce the transfer of germs to patients with no significant differences found between students, professional years, and hand hygiene knowledge ($p=0.885$). **Conclusions:** Regulations governing hand hygiene, including the use of alcohol rubs, were not consistently enforced in the practices assessed. The majority of the students was unaware of the moments of hand hygiene and had not undergone any formal hygiene training. **Keywords:** Hand hygiene, Health care, Infections, WHO

54. Comparison of contrast sensitivity among strabismic and anisometropic amblyopes and its association with disease-related parameters

Abstract

Purpose: To evaluate and contrast the contrast sensitivity defects present in strabismic and anisometropic amblyopes. And to find out the association of contrast deterioration with the visual acuity of the amblyopic eye, the magnitude of strabismus, and the amount of anisometropia in both groups. **Methods:** This cross-

How to cite: Naheed, F., Ullah, S., Asgher, M., & Qayyum, S. (2024). Comparison of contrast sensitivity among strabismic and anisometropic amblyopes and its association with disease-related parameters. *Saudi Journal of Ophthalmology*, 38(1), 83-88.

sectional study was carried out in the orthoptics unit of a tertiary eye care facility between October 2021 and December 2021. There were 45 patients altogether. In the first phase, the patient's history and ocular examination data were recorded after informed consent. The Pelli-Robson chart was used to measure contrast sensitivity. In the second phase, results were interpreted using the SPSS (Statistical Package for the Social Sciences) version 26.0. **Results:** Strabismic amblyopes were 24 and anisometropic amblyopes were 21. A significant positive association existed between both groups' contrast sensitivity and visual acuity ($P = 0.000$). A moderately negative correlation between contrast and anisometropia was statistically significant ($P = 0.025$) in anisometropic amblyopes. However, no association ($P > 0.050$) existed between the contrast and magnitude of strabismus in any group. **Conclusion:** The study concluded that contrast sensitivity decreases in both groups, whereas anisometropic amblyopes have poorer contrast than strabismic amblyopes. Excessively decreased contrast sensitivity among anisometropic amblyopes was solely because of the worst amblyopia in

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this group, whereas the magnitude of strabismus does not affect contrast sensitivity. **Keywords:** Amblyopia, Anisometropic Amblyopia, Contrast Sensitivity, Strabismus

55. Panretinal photocoagulation plus intravitreal bevacizumab versus panretinal photocoagulation alone for proliferative diabetic retinopathy

Abstract

Proliferative diabetic retinopathy (PDR) is a severe and advanced stage of diabetic retinopathy, a major microvascular complication of diabetes mellitus.

Objective: The basic aim of the study is to compare the panretinal photocoagulation plus intravitreal bevacizumab versus panretinal photocoagulation alone for proliferative diabetic retinopathy.

Methodology: This randomized control trial was conducted at various tertiary care hospitals of Lahore and Rawalpindi from September 2023 to August 2024. Data include 40 patients, 80 eyes according to the study's criteria. Participants were randomly assigned into two equal groups using a computer-generated sequence. The first group, consisting of 20 patients, received PRP treatment alone and served as the control group. The second group, also consisting of 20 patients, received PRP combined with a single intravitreal injection of bevacizumab, forming the intervention group. **Results:** Both groups had a mean age of 54 ± 8 years and a male-to-female ratio of 3:2. Baseline best-corrected visual acuity (BCVA) was similar, with 0.4 ± 0.1 logMAR in the PRP group and 0.42 ± 0.1 logMAR in the combination group ($p > 0.05$). Central macular thickness (CMT) at baseline also showed no significant difference, with 310 ± 25 μ m in the PRP group and 312 ± 27 μ m in the combination group ($p > 0.05$), indicating well-matched groups for the study. Improvement in BCVA was significantly higher in the combination group (0.10 ± 0.03 logMAR) than in the PRP group (0.04 ± 0.02 logMAR, $p = 0.02$). Similarly, the reduction in central macular thickness (CMT) was more pronounced in the combination group (-22 ± 4 μ m) compared to the PRP group (-5 ± 3 μ m, $p = 0.01$). **Conclusion:** It is concluded that the combination of panretinal photocoagulation and intravitreal bevacizumab offers superior outcomes in managing proliferative diabetic retinopathy compared to PRP alone. **Keywords:** Bevacizumab, Diabetic Retinopathy, Intravitreal Injections, Panretinal Photocoagulation, Proliferative Diabetic Retinopathy

How to cite: Ali, W., Abbasi, K. Z., & Raza, A. (2018). Panretinal photocoagulation plus intravitreal bevacizumab versus panretinal photocoagulation alone for proliferative diabetic retinopathy. J Coll Physicians Surg Pak, 28(12), 923-927.

56. Comparison of the accuracy of phone applications with Snellen chart in determining visual acuity

Abstract

Objective: To correlate the visual acuity assessment as tested by smartphone application with standard Snellen visual acuity. **Methodology:** A total of 136 individuals were included in this analytical cross-sectional survey conducted at Shifa Foundation Community Health Center, Islamabad between January 2022 and January 2023. Individual's age?

18 years were included. Snellen's visual acuity was assessed using a standard Snellen's visual acuity chart by the optometrist, while the Paxos checkup by DigiSight technologies was used to assess visual acuity on smart phone using one appropriately color calibrated I-phone 7 device. Both assessments were done in physically separate areas to reduce observation bias. Visual acuity from each assessment was noted in the decimal format. Frequency distribution and Pearson's correlation was calculated to ascertain the relationship between the two study variables. **Results:** A total of 88 males and 48 females were included in the study ($n=136$). The mean age of patients was 29.72 ± 9.0 years. The mean visual acuity of right and left eyes as assessed with Snellen's chart were 0.88 ± 0.2 and 0.86 ± 0.22 , respectively. The mean visual acuity for right and left eyes as assessed by Paxos checkup were 0.84 ± 0.19 and

How to cite: Naqaish, R., Masrur, A., Naseem, S., Amjad, F., Badar, A., & Batool, M. (2023). Comparison of the accuracy of phone applications with Snellen chart in determining visual acuity. Annals of PIMS-Shaheed Zulfiqar Ali Bhutto Medical University, 19(4), 505-508.

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0.86±0.21, respectively. There was positive correlation was present in both eyes. The Pearson's correlation for right eyes was $r = 0.66$ and significant at $p = 0.001$, while the correlation for left eyes was $r = 0.71$ and significant at $p = 0.001$. **Conclusions:** There is a strong correlation between Snellen's visual acuity assessment and assessment of visual acuity by the smartphone application. This makes the latter a viable strategy for screening at places where taking a Snellen's chart might not be feasible. **Keywords:** Cell phone, Diagnostic techniques, Ophthalmological, Ophthalmology, Visual acuity, Snellen's chart

57. Case Report of Visual Outcomes after Post-Operative Optical Iridectomy in Corneal Opacities

Abstract

Individuals with segmental corneal opacities benefit from improved vision due to the clean entrance pupil created by optical iridectomy. In situations where keratoplasty is not an option, a region of clear peripheral cornea can produce retinal images that are consistent with good visual acuity. Studies evaluating the visual outcomes after postoperative optical iridectomy have produced encouraging findings. After the iris tissue that was impeding light transmission through the cornea is removed, patients have improved visual acuity. A notable reduction in visual disturbances such as halos, glare, and blurry vision were also observed. Cases include in this study are less than five years old. This study aims to explore the impact of optical iridectomy on the quality of life of patients with central corneal opacity. Individuals with glaucoma who have bilateral corneal opacities, Peter's anomaly and patients receiving optical iridectomy following glaucoma pressure management were included in this study. IOP needs to be monitored carefully, especially in children whose anterior chambers are shallow or flat. When a patient has bilateral central corneal opacity, one of the greatest ways to prevent amblyopia is through optical iridectomy. This study showed that with the result of successful of optical iridectomy procedure, there is a significant improvement in visual acuity in patients where keratoplasty is not possible. **Keyword:** Sclerocornea; Peters Anomaly; Trabeculodysgenesis

How to cite: Tanveer M, et al. Case Report of Visual Outcomes after Post-Operative Optical Iridectomy in Corneal Opacities. J Ocular Sci Opth 2024, 5(1): 180024.

58. Evaluating the Efficacy of Combined Surgery for Cataract and Glaucoma: A Comparative Analysis of Visual Acuity, Intraocular Pressure, and Anterior Chamber Depth

Abstract

Glaucoma is characterized by an abnormal increase in intraocular pressure, leading to optic nerve damage and permanent visual impairment. Cataract is characterized by lens opacity that impairs vision but can be reversed.

Objective: To compare pre and post-operative average visual acuity, intraocular pressure, anterior chamber angle, and anterior chamber depth in patients with cataract and narrow angle glaucoma undergoing combined

phacoemulsification, intraocular lens implantation, and trabeculectomy. **Methods:** A quasi-experimental study was carried out at Niazi Welfare Foundation Teaching Hospital Sargodha from June 2022 to December 2023. Total 107 patients with both cataracts and narrow angle glaucoma were included. Post-surgery, average visual acuity, intraocular pressure, anterior chamber angle, and anterior chamber depth were assessed at various postoperative intervals (1 day, 1 week, 1 month, 3 months, and 6 months). The Patient's symptoms improved, with visual acuity and average anterior chamber depth increasing by more than 50% compared to pre-surgery was considered as significant. Data were analyzed by SPSS version 25.0. P-value <0.05 was considered as significant. **Results:** Results of the study yielded significant improvements in average visual acuity, intraocular pressure (IOP), anterior chamber angle, and anterior chamber depth post-operatively with complication rate of

How to cite: Munir, M. S., Chaudhary, M. Z., Arshad, M., Siddiqui, S. A., Mirza, U. T., & Sharif, N. (2024). Evaluating the Efficacy of Combined Surgery for Cataract and Glaucoma: A Comparative Analysis of Visual Acuity, Intraocular Pressure, and Anterior Chamber Depth: Efficacy of Combined Surgery for Cataract and Glaucoma. Pakistan Journal of Health Sciences, 52-56.

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6.52%. **Conclusions:** We concluded that combined phacoemulsification with intraocular lens implantation (IOL) and trabeculectomy may be an effective approach for managing intraocular pressure (IOP) and improving visual acuity in patients with narrow angle glaucoma and cataract.

59. Identification of de Novo and Novel Mutations in LTBP2 in Pakistani Families with Inherited Primary Congenital Glaucoma

Abstract

Primary congenital glaucoma (PCG) is the topmost reason for childhood blindness due to optic nerve impairment, enlarged globe, and loss of visual field. PCG is usually identified during the first year of life. The purpose of the recent research was to assess the involvement of the Latent transforming growth factor 2 (LTBP2) gene in PCG families of Pakistani origin and to find novel mutations. To extract genomic DNA from the whole blood of n=20 families were performed followed by the genotyping of the affected and unaffected persons of the families by using whole genome single nucleotide polymorphism microarray (SNP). Homozygosity mapping analysis was performed for the selected members of these families. LTBP2 gene was screened using Sanger Sequencing in n=20 consanguineous Pakistani families diagnosed with PCG by standard ophthalmological examination. Novel homozygous mutations were identified in three families with PCG in the LTBP2 gene. We found a new de novo frameshift mutation c.1762_1763del; p. (Leu588Valfs*14). In a second family, we identified a splice site mutation c.2531-2A>C, and in the third family, a splice donor site c.1686G>A; p. (Gln562Gln) mutation. In this study, we report the involvement of novel de novo frameshift mutation and two genetic variants that affect splicing in PCG families from Pakistan. The current study will help us to extend our understanding of the part of LTBP2 in PCG.

How to cite: Saleem, R. S., Khan, M. I., Irshad, S., Siddiqui, S. N., & Micheal, S. (2024). Identification of de Novo and Novel Mutations in LTBP2 in Pakistani Families with Inherited Primary Congenital Glaucoma.

60. Relationship between Ocular Manifestations and Chest pain: A frequency-based analysis of Systemic and Ocular Signs in COVID-19 Patients

Abstract

Objective: To find the frequencies of systemic and ocular signs in confirmed polymerase chain reaction (PCR) positive COVID-19 cases and to find association between ocular manifestation and systemic signs in Covid-19 patients. **Study Design:** A prospective cross-sectional study. **Place and Duration:** Department of Medicine and Ophthalmology, KRL Hospital Islamabad. The research lasted six months, from 1st January 2021 to 31st August 2021. **Methodology:** A total of 416 PCR-confirmed COVID-19 positive patients were included. As a sample strategy, purposive sampling was adopted. SPSS version 21 was used for statistical analysis. Descriptive statistics was calculated for continuous variables. Chi square test was applied to find association among systemic and ocular signs. **Results:** The study included 73% men, and 27% women. Patients presented with body aches 67%, sudden onset retrosternal chest pain 21.9%, abdominal pain 14.4%, ocular symptoms 10.3%, loss of taste 67%, and loss of smell 66.7%, loose motion 1.1% and shortness of breath in 1%. The patients' mean platelet counts were 230.30 ±65.63, mean lymphocyte counts were 3702 ±176, mean total leucocyte counts (TLCs) were 7.524 ±5, and mean c-reactive protein (CRP) level was 21.816 with SD of ±25.992. Assessing the relation between ocular symptoms and other systemic symptoms, the Chi-square test revealed an insignificant relationship. However, it showed a significant association between chest pain and ocular symptoms with a p-Value 0.001. **Conclusion:** This study found a significant association between chest pain and conjunctivitis in COVID-19 patients, attributing chest pain to respiratory issues, inflammation, and

How to cite: Hamza, M., Shah, M., Turi, M. H., Vaqar, A., Inayat, M., & Khan, S. A. Relationship between Ocular Manifestations and Chest pain: A frequency-based analysis of Systemic and Ocular Signs in COVID-19 Patients. Age, 37(13.6), 25-57.

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blood clotting. Conjunctivitis was prevalent, especially in healthy, young individuals. **Keywords:** COVID-19, Chest Pain, Conjunctivitis, Ocular Symptoms

61. Utilisation and barriers of social health protection program among its enrolled population of federally administrative areas, Pakistan

Abstract

Objectives: The objective of this research is to analyse the extent of utilisation and identify the barriers faced by individuals in the Federally Administrative Area of Pakistan concerning the Social Health Protection Programme.

Methods: A cross-sectional study was carried out, enrolling permanent residents from Islamabad, Gilgit-Baltistan and

How to cite: Farooqui, M. A., Ali, K. N., & Riaz, S. (2024). Utilisation and barriers of social health protection program among its enrolled population of federally administrative areas, Pakistan. *BMJ Open Quality*, 13(Suppl 2), e002375.

Azad Kashmir. The sampling frame was provided by the Sehat Sahulat Programme (SSP) office in Islamabad, using a simple random sampling method. The study used the 'WHO Health Survey 2002' tool, which is validated, to assess the utilisation and barriers of the Social Health Protection Programme. **Results:** The study findings indicated that approximately 12% of the participants used the Social Health Protection Programme, while 6.5% experienced barriers in utilisation. The identified barriers were further classified into seeking (3%), reaching (0.25%) and receiving care (3.25%) barriers. A χ^2 test of association revealed significant statistical associations between card utilisation and sociodemographic factors such as age and level of education (p value <0.001). Additionally, statistically significant associations were observed with hospitalisation in the last year, duration and frequency of hospitalisation (p value <0.001). However, no statistically significant association was found between the utilisation of SSP and utilisation barriers. **Conclusion:** The SSP had a low utilisation ratio due to the fact that half of the enrolled households were satisfied with their health conditions and did not feel the need for hospitalisation.

62. Hyperglycemia as a prognostic factor for increased mortality in patients admitted in Pediatric ICU.

Abstract

Objective: To study the prevalence and frequency of hyperglycemia in critically ill children. To juxtapose mortality rate in critically ill patients with hyperglycemia against those having normal blood glucose levels. **Study Design:** Descriptive Case Series. **Setting:** Pediatric Intensive

How to cite: Fatima, T., Fayyaz, M., Rizwan, F., Malik, N. A., Siddiqua, S., & Babar, B. (2024). Hyperglycemia as a prognostic factor for increased mortality in patients admitted in Pediatric ICU. *Professional Medical Journal*, 31(5).

Care Unit (PICU) of HITEC, IMS Taxila, Al-Ihsan Hospital Rawalpindi & Hameed Latif Teaching Hospital, Lahore. Period: March 2023 to October 2023. **Methods:**

One hundred critically ill children admitted to PICU were included. Patients who had blood glucose levels more than 150mg/dl within 48 hours of admission were included in the hyperglycemic group (Group A). Patients with normal blood sugars were included in Group B. The normoglycemic and hyperglycemic groups were followed till 10 days to determine the mortality associated with hyperglycemia. **Results:** Mean age of the children was 6.7 ± 6.29 months. There were 72% male children and 28% female children. Mean blood glucose levels at baseline, after 24h hours, after 36 hours and after 48 hours were 194.91 ± 135.66 mg/dl, 156.91 ± 74.89 mg/dl, 156.21 ± 83.05 mg/dl and 150.13 ± 70.68 mg/dl. Frequency of hyperglycemia was observed in 55% ($n=55$). Mortality rate was 43% ($n= 43/100$). Furthermore, mortality rate was crucially inflated 63.6% ($n= 35$) in hyperglycemic victims than normoglycemic patients ($p=<0.001$). **Conclusion:** Frequency of high blood sugar along with mortality within 10 days of hospitalization in children with hyperglycemia was found higher in patients admitted to Pediatric ICU. **Key words:** Critically Ill Children, High Blood Sugar, Mortality

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63. Topical and oral peroxisome proliferator-activated receptor- α agonist ameliorates diabetic corneal neuropathy

Abstract

Diabetic corneal neuropathy (DCN) is a common diabetic ocular complication with limited treatment options. In this study, we investigated the effects of topical and oral fenofibrate, a peroxisome proliferator-activated receptor- α agonist, on the amelioration of DCN using diabetic mice (n = 120). Ocular surface assessments, corneal nerve and cell imaging analysis, tear proteomics and its associated biological pathways, immuno-histochemistry and western blot on PPAR α expression, were studied before and 12 weeks after treatment. At 12 weeks, PPAR α expression markedly restored after topical and oral fenofibrate. Topical fenofibrate significantly improved corneal nerve fiber density (CNFD) and tortuosity coefficient. Likewise, oral fenofibrate significantly improved CNFD. Both topical and oral forms significantly improved corneal sensitivity. Additionally, topical and oral fenofibrate significantly alleviated diabetic keratopathy, with fenofibrate eye drops demonstrating earlier therapeutic effects. Both topical and oral fenofibrate significantly increased corneal β -III tubulin expression. Topical fenofibrate reduced neuroinflammation by significantly increasing the levels of nerve growth factor and substance P. It also significantly increased β -III-tubulin and reduced CDC42 mRNA expression in trigeminal ganglions. Proteomic analysis showed that neurotrophin signalling and anti-inflammation reactions were significantly up-regulated after fenofibrate treatment, whether applied topically or orally. This study concluded that both topical and oral fenofibrate ameliorate DCN, while topical fenofibrate significantly reduces neuroinflammation.

How to cite: Mansoor, H., Lee, I. X. Y., Lin, M. T. Y., Ang, H. P., Xue, Y. C., Krishaa, L., & Liu, Y. C. (2024). Topical and oral peroxisome proliferator-activated receptor- α agonist ameliorates diabetic corneal neuropathy. *Scientific reports*, 14(1), 13435.

64. Prevalence and Predictors of Stress Among Caregivers of Children with Developmental Disorders

Abstract

Medical care advances pose challenges with rising caregiving costs and fewer informal caregivers, shifting healthcare responsibilities to families. Healthcare systems adapt to technological changes, stressing person-centered care but lack support for caregivers. Addressing parental stress is crucial, given its impact on both parent and child well-being, highlighting the necessity for customized support. The study aimed to evaluate caregivers' perceived stress and its connection with socio-demographic factors and children's characteristics. Conducted at a Rehabilitation Institute's Psychology Outpatient Department, 200 mothers were enrolled using non-probability consecutive sampling. Ethical clearance was obtained, and demographic data were collected. The mean perceived stress score (PSS-10) was 31.94, indicating a positive correlation between stress and socio-demographic and disability-related variables. Significant differences in stress levels were observed between joint and nuclear family caregivers, $p < .01$, and those with daughters versus sons with disabilities < 0.001 . Pearson's correlation analysis revealed positive correlations between perceived stress and caregiver $p = < 0.001$ and child age $p = < 0.001$, number of children $p = < 0.001$, and time since diagnosis $p = < 0.001$, with negative correlations with caregiver education $p = < .001$ and income $p = < 0.001$. Multiple linear regression indicated that caregiver and child age, time since diagnosis, and the number of children positively predicted while income and education of the caregiver negatively predicted perceived stress. No significant association was found between other variables like family volunteers' education, disability type, and caregiver stress. Caregivers exhibited high perceived stress levels, highlighting the reciprocal relationship between child characteristics and parental stress, emphasizing the need for comprehensive family interventions.

How to cite: Waqar, S., Ali, H., & Ali, E. (2024). Prevalence and predictors of stress among caregivers of children with developmental disorders. *Journal of Autism and Developmental Disorders*, 1-9.

Publications

65. Public Health and Health System's Responsiveness During the 2022 Floods in Pakistan: What Needs to Be Done?

Abstract

Objective: In 2022, Pakistan witnessed unprecedented flooding, submerging one-third of the country under-water, ruining millions of houses, taking lives, afflicted injuries, and displacing scores of people. Our study documents not only the public health problems that have arisen due to this natural calamity but also the state of

health systems' response. **Methods:** We conducted a qualitative study asking key questions around prevalent health problems, health-care seeking, government's response, resource mobilization, and roadmap for the future. We purposively selected 16 key frontline health workers for in-depth interviews. **Results:** Waterborne and infectious diseases were rampant posing huge public health challenges. Disaster mitigation efforts and relief operations were delayed and not at scale to cover the entire affected population. Moreover, a weak economy, poverty, and insufficient livelihoods compounded the tribulations of floods. Issues of leadership and governance at state level resulted in disorganized efforts and response. **Conclusions:** Pakistan is famous for its philanthropy; however, lack of transparency and accountability, the actual benefits seldom reach the beneficiaries. Such climatic disasters necessitate a more holistic approach and a greater responsiveness of the health system. In addition to health services, the state must respond to financial, social, and infrastructural needs of the people suffering from the calamity. **Keywords:** Pakistan floods health system public health disaster mitigation responsiveness

How to cite: Abdullah, M. A., Shaikh, B. T., Sikander, A., & Sarwar, B. (2024). Public health and health System's responsiveness during the 2022 floods in Pakistan: what needs to be done? *Disaster medicine and public health preparedness*, 17, e567.

"The important thing is not to stop questioning. Curiosity has its own reason for existing."

Albert Einstein

Dissertations

Sr No	Student Name	Topics	Department	Supervisors	Clinical Supervisor
1.	Maryam Najeeb	Assessment of Refractive Error by Retinoscopy using a Fogging Lens and Cycloplegia	Peads Refraction	Ms. Sadaf Qayyum	Ms. Mussafa Khalid
2.	Tehreem Ghazal	Evaluation and Comparison of Ocular Residual Astigmatism in Different Types of Astigmatism and its Comparison with Anterior Corneal Astigmatism	OPD-1	Mr. Saif Ullah	Dr. Tayyab Afghani
3.	Muhammad Zakriya	Analysis of Alphabet Pattern of Deviation Found in Patients without Strabismus in Primary Position	Orthoptics	Ms. Sadaf Qayyum	Dr. Sumaira Altaf Ms. Laiba Munir
4.	Aqsa Sarwar	Assessment of Photostress Recovery Time in Apparently Healthy Individuals	OPD-1	Ms. Fareeha Ayub	Mr. Hassan Ansari
5.	Javeria Javed	Accommodation Measurement using Dynamic Distance Direct Ophthalmoscopy and Dynamic Nott Retinoscopy technique. A Comparative Study	Peads Refraction	Ms. Maryam Firdous	Ms. Mussaffa Khalid
6.	Sandleen Amber	Assessment of Binocular Vision Anomalies in Keratoconus Subjects	Orthoptics	Ms. Sadaf Qayyum	Ms. Hina
7.	Alisha Arshad	Vergence Parameters in Smart Phone Users	Orthoptics	Ms. Fareeha Ayub	Ms. Sara Iqbal
8.	Eman Arif	Assessment of Intra Ocular Pressure in Glaucomatous Subjects with and without Fluorescein.	Glaucoma	Ms. Fareeha Ayub	Dr. Waleed Khan
9.	Ahmad Bilal	Effect of Smartphone Use on Intra-Ocular Pressure	Glaucoma	Ms. Maryam Firdous	Dr. Mehmood
10.	Wafa Saleh	Refractive and Endothelial Characteristics of Keratoconus Eyes with Corneal Vogt's Striae	Cornea	Mr. Saif Ullah	Dr. Faheem Ullah
11.	Tuba Ashfaq	Effect of Smoking on Vision Anomalies and Tear Film Instability	Low vision	Ms. Sadaf Qayyum	Ms. Zahra Batool
12.	Farhat Parveen	Effect of Corneal Cross-Linking on Endothelial Cell	Cornea	Ms. Sadaf Qayyum	Dr. Hassan mansoor
13.	Nimra Riaz	Refractive Changes during Off-axis Retinoscopy in Emmetropes and Ametropes	Peads Refraction	Mr. Saif Ullah	Ms. Mussafa

Dissertations

Sr No	Student Name	Topics	Department	Supervisors	Clinical Supervisor
14.	Amna Mustafa	Analysis of the Refractive Profile and Biometric Parameter of Children with Oculocutaneous Albinism versus Age-Matched Non-Albino Group	Peads	Dr. Ayesha Babar	Dr. Arsalan Dr. Nusrat sharif
15.	Hamza Fazal	Effect of Palpebral Fissure Height in Primary Gaze Position on Tear Film Stability in Myopic and Hyperopic Patients.	OPD-1	Ms. Sadaf Qayyum	Ms. Hira
16.	Momina Asif	Comparison of Predicted and Measured Axial Length for Ophthalmic Lens Design	Peads	Ms. Mehmoona Asghar	Dr. Arsalan Dr. Hanif
17.	Muhammad Abdullah	Determination of Refractive Error with Ophthalmoscope and Comparison with Retinoscope	Peads	Ms. Fareeha Ayub	Mr. Umair Wakeel Dr. Sumaira
18.	Nimra Zaheer	Effect of Cycloplegia on Ocular Parameters and Intra-Ocular Lens Power in Pre-Presbyopic and Presbyopic Eyes	Diagnostics	Ms. Maryam Firdous	Dr. Amtul Aziz Ms. Fatima Yousaf
19.	Rameen Ayesha	Evaluation of Functional Vision and Eye-Related Quality of Life in Children with Strabismus	Orthoptics	Ms. Mehmoona Asghar	Ms. Sara Iqbal Dr. Amaiza
20.	Ayesha Tuz Zahra	Impact of Keratoconus Stage on Outcome after Corneal Crosslinking	Cornea	Mr. Saifullah	Dr. Faheem Ullah Khan
21.	Pakiza Imam	A Comparative Study of Stereo Acuity in Pseudophakic Patients with Astigmatism and without Astigmatism	OPD-1	Ms. Maryam Firdous	Dr. Abdul Moqeeet
22.	Iqra Tariq	Comparison of Foveal Sensitivity between Diabetic and Non-Diabetic Patients through Humphrey Field Analyser	Diagnostics	Mr. Saifullah	Dr. Amtul Aziz
23.	Sehar Abbasi	Comparison of Accommodative Status and Refractive Changes after Reading with Smartphone and Text		Mr. Saifullah	
24.	Romaisa Aqeel	Correlation Between Dry Eye and Refractive Error in Young Adults using Non-Invasive keratometer	Cornea Department	Mr. Hassan Ansari	Mr. Rashid Dr. Shama

Dissertations

Sr No	Student Name	Topics	Department	Supervisors	Clinical Supervisor
25.	Noor Ul Ain	Body Mass Index and Eye Morphometry Parameters in Myopic Adults	OPD-I &II	Ms. Maryam Firdous	
26.	Alishba Mumtaz	Assessment of Stereopsis in Pediatrics Patients with and without Spectacle Corrected Refractive Error	Peads	Ms. Rimsha Tanveer	Ms. Laiba Munir
27.	Noor Ul Ain Sajjad	Anisometropia and its Association with High Myopia and Astigmatism	OPD-I &II	Ms. Fareeha Ayub	Dr. Tayyab Afghani
28.	Vaniya Raza	Comparison of Pupil Size in Patients of Migraine with Photophobia versus Normal Subjects and Correlation of Pupil Size to Severity of Headache	Diagnostics	Mr. Saifullah	Ms. Fatima Yousaf

"Research is formalized curiosity. It is poking and prying with a purpose."

Zora Neale Hurston

Conferences & Webinars

Participants	Event
Prof Dr Ume Sughra	Participated in Expert Consultation on Strengthening National Capacity for The Conduct of Randomized Controlled Trials and Large-Scale Studies organized by the World Health Organization (WHO), NHSRC, and DRAP Pakistan.
Prof Dr Ume Sughra	Participated in an insightful seminar on "The Role of Accreditation in Enhancing Quality of Medical Journals," taking place on September 19, 2024 at Islamabad Medical and Dental College.
Prof Dr Ume Sughra	Participate in the prestigious international conference as a speaker on innovation in Biomaterials & Nanotechnology - "BioNanoCon2024"
Prof Dr Ume Sughra Dr. Marriam Suleman Dr. Asma Riaz	Meeting with White Ribbon Alliance, during a visit to Al-Shifa Clinical Trial Unit. On 13-March-2024 the ASRC achieved another milestone by joining hands with White Ribbon Alliance Pakistan in a promising endeavor for "Women's Health and Well-Being".
Prof Dr Ume Sughra	Meeting with CEO/Director/Chairman, AAA/Triple A Alliance, during a visit to ASRC to discuss future collaboration on clinical trials
Prof Dr Ume Sughra	A meeting was held with DRAP CEO Dr. Asim Rauf and Director Pharmacy Service Division Dr. Obaidullah to discuss the Bill & Melinda Gates Foundation clinical trial.
Dr. Fiza Shaheen	Participated and Presented 4 e-posters in the 6th MEOM International Conference in Dubai.
Dr. Najia Uzair	Participated and Presented 4 e-posters in the 6th MEOM International Conference in Dubai. Also actively participated in the MEOM YO Voice Competition
Dr. Salman Sohail	Participated and delivered a compelling e-video presentation in the 6th MEOM International Conference in Dubai.
Prof. Dr. Shama Khan	Participated and conducted hands-on wet-lab workshops. Prof. Dr. Shama Khan led sessions on Corneal transplant (PKP) in the 6th MEOM International Conference in Dubai.
Dr. Fiza Shaheen	Participated and conducted workshops on Phaco-emulsification cataract surgery, Pupilloplasty, and Scleral fixation of the lens in the 6th MEOM International Conference in Dubai.
Dr. Salman Sohail	Participated and conducted workshops on Phaco-emulsification cataract surgery, Pupilloplasty, and Scleral fixation of the lens in the 6th MEOM International Conference in Dubai.
Dr. Abdul Moqeet, Dr. Hassan Mansoor	Representing Pakistan as speaker at The World Keratoconus Congress in Dubai on April 19 and 20, 2024
Prof. Dr. Abdul Moqeet	Presented his original work on Deep Anterior Lamellar Keratoplasty (DALK) at The World Keratoconus Congress in Dubai on April 19 and 20, 2024
Prof. Dr. Tayyab Afghani	Participated in an interview with the HUM News program "Subah Say Agay". During the interview, he discussed eye cancer and the significant number of cases reported each year. He also talked about its causes, symptoms, and treatments.
Prof. Tayyab Afghani, Prof. Dr. Ayesha Babar Kawish, Dr. Maheen Akbar, Dr. Rutaba Gul, Dr. Tanzeela Farha, Dr.	Participated and Speaker for Eye Cancer Awareness in a seminar at Al-Shifa Trust Eye Hospital 25th September 2024

Conferences & Webinars

Participants	Event
Aneesa Sultan, Dr. Maryam Ijaz	
Prof. Dr. Inam Ul Haq	Participated in an interview with the HUM News program "Subah Say Agay". During the interview, he discussed redness of eye and how to prevent this eye infection.
Prof. Dr. Sumaira Altaf	Participated in an interview with the HUM News program "Subah Say Agay". During the interview, she discussed the premature birth of babies, its effect on their eyes, how to address this problem, and how Al-Shifa state-of-the-art facilities help.
Dr. Ayesha Babar Kawish, Ms. Tehseen Fawad, Ms. Riffat Abbasi, Dr. Ehsan Ghani, Dr. Naveed Malik, Dr. Aijaz Ahmed, Dr. Zunaira Aftab, Dr. Asif Arbab Khan	Participated and Speaker for Integrated Reproductive, Maternal, Newborn & Child Health Program and the Promotion of Mother Feed for a healthy nation in a seminar at Al-Shifa Trust Eye Hospital.
Dr. Abdul Hannan	Participated in an interview with the HUM News program "Subah Say Agay". During the interview, he discussed laser treatment, its forms, complications, and advantages.
Dr. Aziz Jan Bashir	Participated in an interview with the HUM News program "Subah Say Agay". During the interview, he discussed color blindness, its forms, and the difficulties individuals can face in their lives.
Dr. Ayesha Babar Kawish	Participated and Speaker for Investing the Re-Orientation of the Health System towards Primary Healthcare in the 13 th Annual Public Health Conference at Health Services Academy in Chak Shahzad, Islamabad.
Dr. Ayesha Babar Kawish	Participate in the informative dissemination seminar arranged by international research force, Neoventive solutions and MONHSRC
Dr. Aziz Jan Bashir, Dr. Abdul Hanan	Al-Shifa Trust Eye Hospital and Oertli Group hosted a Phacoemulsification Wet Lab on May 17, 2024 first time in Al-Shifa Trust Eye Hospital Rawalpindi, organized by the Pakistan Society of Young Ophthalmologists (PSYO).
Prof. Dr. Tayyab Afghani, Prof. Dr. Hanif Malik, Dr. Aziz Jan Bashir, Prof. Dr. Mahmood Ali, Dr. Abdul Hannan, Dr. Muhammad Amjad, Dr. Murtaza Sameen (J Murtaza), Dr. Sumaya Ali Khan, Dr. Faizan Tahir, Dr. Saadullah Ahmad, Dr. Amna Manzoor, Dr. Fariha Taimur, Dr. Warda Ali	A significant representation in the 42nd Lahore Ophthalmology and 5th Annual Symposium of APOP (Association of Pediatric Ophthalmological Pakistan) 3-day Conference

"Research means that you don't know, but are willing to find out."

Charles F. Kettering

3rd International Al-Shifa Research Conference 2024

3rd International Al-Shifa Research Conference at Al Shifa Trust Eye Hospital was held on Friday, March 8th, 2024 under the esteemed leadership of President, Al-Shifa Trust Maj Gen (R) Rehmat Khan. Prof. Dr. Ume Sughra, Director Research, and the Al-Shifa Research Centre team successfully organized the conference under the theme “Exploring the Global Perspective: Trends & Insights of Clinical Research”.

The welcome address was given by Prof. Dr. Wajid Ali Khan, Dean & Chief of Medical Services, Al-Shifa Trust Eye Hospital, Rawalpindi. The chief guest of the conference was Dr. Obaidullah, Director Division of Pharmacy Services, Drug Regulatory Authority of Pakistan. The guests of honor were Dr. Baber Saeed Khan, Founder & CEO of The Emergent Platform, Karachi, and Prof. Dr. Shahzad Ali Khan, Vice Chancellor of Health Services Academy, Islamabad.

The speakers at the conference were renowned medical and clinical research professionals from across the globe, including Mr. Ben Laverty, Research & Development Operations Head, Southeast Asia, Australia & New Zealand, IQVIA; Mr. Lei Zhang, Vice President of International Medical Affairs Division, AIM Vaccine Co., Ltd, China; Ms. Janie Parrino MD, Clinical Development Leader; and Ms. Lori Muir, Clinical Trial Leader, Bill & Melinda Gates Medical Research Institute, USA; Mr. Syed Munawar Ali, Head of Clinical Operations, IQVIA Solutions Pakistan (Pvt) Ltd., Karachi; and Dr. Saboor Waris, Associate Director of Research, Maroof International Hospital, Islamabad.





Maj Gen (Retd) Rehmat Khan
President
Al-Shifa Trust Eye Hospital



Prof. Dr. Wajid Ali Khan
Dean and Chief of Medical Services
Head of Cornea Department
Al-Shifa Trust Eye Hospital



Chief Guest
Dr. Obaidullah
Director Division of Pharmacy Services
Drug Regulatory Authority of Pakistan



Prof. Dr. Ume Sughra
Director Research
Al-Shifa Trust Eye Hospital



Prof. Dr. Shahzad Ali Khan
Vice Chancellor
Health Services Academy Islamabad



Mr. Syed Munawar Ali
Head of Clinical Operations
IQVIA Solutions Pakistan (Pvt) Ltd., Karachi



Guest of honor
Dr. Baber Saeed Khan
Founder & CEO, The Emergent Platform, Karachi



Dr. Amaan Ullah, Chairman/Director, White Ribbon Alliance, visiting Al-Shifa Clinical Trial Unit.

On 13-March-2024 the ASRC achieved another milestone by joining hands with White Ribbon Alliance Pakistan in a promising endeavor for "Women's Health and Well-Being".

With the formalization of the Letter of Understanding (LoU), we are paving the way for enhanced collaboration and impactful research initiatives aimed at strengthening the health and well-being of women across Pakistan.



Head of Clinical Operations DRK visited ASRC to enhance collaboration and foster seamless communication between the teams.



On 29-February-2024 our team, led by Prof. Dr. Ume Sughra, Director Research, Al-Shifa Research Centre (ASRC), was honored to participate in the prestigious international conference as a speaker on innovation in Biomaterials & Nanotechnology - "BioNanoCon2024"



DRAP officials visited ASRC on September 3, 2024, for an inspection related to the renewal of the Clinical Trial Unit license.



ASRC on 01/Nov/2024 has become Pakistan's first clinical trial site to undergo a successful Good Clinical Practice (GCP) inspection by the Drug Regulatory Authority of Pakistan (DRAP). This landmark achievement underscores our commitment to excellence and adherence to global standards in clinical research.



Mr. Shabi Haider, CEO/Director/Chairman, AAA/Triple A Alliance, Visited ASRC and met with Director Research, Prof. Dr. Ume Sughra, to discuss future collaboration on clinical trials.



Meeting with Chinese delegation on clinical trials.



A meeting was held with DRAP CEO Dr. Asim Rauf and Director Pharmacy Service Division Dr. Obaidullah to discuss the Bill & Melinda Gates Foundation clinical trial. Mr. Syed Munawar Ali, Head of Clinical Operations at IQVIA Solutions Pakistan (Pvt) Ltd., Karachi, was also present.



On 06-March-2024 the two-member delegation from Gates Medical Research Institute, USA, Dr. Alexander Schmidt and Dr. Michael Dunne Visited Al-Shifa Research Centre.

Dr. Michael Dunne, serving as the Chief Medical Officer and Head of Development, brings a wealth of expertise in overseeing clinical trials that align with the Gates Medical Research Institute.

Meanwhile, Dr. Alexander Schmidt, the Head of Vaccine Development, has a distinguished background in leading clinical vaccine development programs. The delegation thoroughly explored our clinical trial unit's strengths, capabilities, facilities, and resources. Their interest in Pakistan, particularly in therapeutic areas like malnutrition, underscores their commitment to global health initiatives.

Event Highlights at ASTEH



The Centre for Eye Cancer at Al-Shifa Trust Eye Hospital celebrated International Childhood Cancer Awareness month by hosting a seminar on eye cancer, story of challenges and opportunities. The event brought together the experts working in ocular oncology to discuss the comprehensive approach towards eye cancer awareness and recent advances and future directions for ocular tumors.



The Oculofacial Aesthetics & Rejuvenation Center at Al-Shifa Trust Eye Hospital hosted a seminar on Aesthetic Ophthalmology, featuring expert guest speakers from the field. Prominent speakers included Dr. Shehr Bano Khan, Chairperson of AASP, Dr. Muneeza Rizwan, HOD Dermatology Dept PAF Hospital, Dr. Abubakar Abdullah, Consultant Oral Surgeon & Facial Aesthetician, Dr. Hina Akhtar, Aesthetic Physician, and Dr. Maria Rasheed, Consultant Dermatologist. In-house speakers were Dr Amna Manzoor, Associate Professor Orbit and Oculoplastics department, Dr Fariha Taimur, Assistant Professor Orbit and Oculoplastics department, and Dr Nimra Noor, Aesthetic Physician at OFAR. President Al-Shifa Trust, Maj Gen (Retd) Rehmat Khan, concluded the seminar by expressing his gratitude to the distinguished guest speakers for their contributions. He also distributed the shields among the speakers.



The Department of Ophthalmic Genetics at Al-Shifa Trust Eye Hospital hosted a seminar on Ophthalmic Genetics: The DNA Diagnosis, featuring expert guest speakers from the field.

Projects at ASRC

Sr. No.	Name	Sponsor	Investigator
1	A Phase III Randomized, Double-blind, Placebo-controlled Clinical Trial in 18 Years of Age and Above to Determine the Safety and Efficacy of ZF2001, a Recombinant Novel Coronavirus Vaccine (CHO cell) for Prevention of COVID-19.	Anhui Zhifei Longcom Biopharmaceutical Co., Ltd China	Prof. Dr. Ume Sughra
2	A Phase III, Randomized, Observer-blind, Multicenter Study to Evaluate the Efficacy, Immunogenicity and Safety of Seqirus' Cell-Based Quadrivalent Subunit Influenza Virus Vaccine (QIVc) Compared to a Non-Influenza Vaccine when Administrated in Healthy Subjects aged 6 Months through 47 Months.	Seqirus Inc./Seqirus UK Limited	Prof. Dr. Ume Sughra
3	A Randomized, Double-masked, Parallel-group, Multicenter Clinical Study to Evaluate the Efficacy and Safety of AVT06 Compared with EU Eylea® in Subjects with Neovascular (wet) Age-related Macular Degeneration (ALVOEYE).	Alvotech Swiss AG	Prof. Dr. Ume Sughra
4	A Multi-center, Randomized, Blinded, Placebo-controlled, Phase 3 Clinical Study to Evaluate the Efficacy, Safety and immunogenicity of SARS-CoV-2 Bivalent mRNA Vaccine (LVRNA021) as Booster in Participants Aged 18 Years and Older who Completed Primary/1 Booster Dose(s) of SARS-CoV-2 Vaccination	AIM Vaccine Co., Ltd. Ningbo Rongan Biological Pharmaceutical Co., Ltd. LiveRNA Therapeutics Inc.	Prof. Dr. Ume Sughra
5	A Phase 3, randomized, double-blind, placebo-controlled study to evaluate the effect of Bi-26 (strain of Bifidobacterium longum, B. infantis) supplementation versus placebo on weight gain in underweight infants	Bill & Melinda Gates Medical Research Institute	Prof. Dr. Ume Sughra
6	A Phase 3 Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of Bemnifosbuvir in High-Risk Outpatients with COVID-19	Atea Pharmaceuticals, Inc. USA	Prof. Dr. Ume Sughra
7	A phase III, Randomized, Comparator-Controlled, Double-Blind, Multicenter Study to Evaluate the Immunogenicity, Safety and Lot to Lot Consistency of Three Lots of a PIKA Rabies Vaccine (Vero cell) for human use, freeze-dried in Healthy Adults using a Post-Exposure Prophylaxis schedule	Yisheng Biopharma (Singapore) Pte. Ltd.	Prof. Dr. Ume Sughra



Study Title: A Phase III Randomized, Double-blind, Placebo-controlled Clinical Trial in 18 Years of Age and Above to Determine the Safety and Efficacy of ZF2001, a Recombinant Novel Coronavirus Vaccine (CHO cell) for Prevention of COVID-19.

Sponsor: Anhui Zhifei Longcom Biopharmaceutical Co., Ltd China

Project Achievements

3,840

Subjects Screened

2,700

Highest Number
Enrolled

447

Highest Number
Elderly Enrolled

98%

Highest Follow-up
rate





Study Title: A Phase III, Randomized, Observer-blind, Multicenter Study to Evaluate the Efficacy, Immunogenicity and Safety of Seqirus 'Cell-Based Quadrivalent Subunit Influenza Virus Vaccine (QIVc) Compared to a Non-Influenza Vaccine when Administrated in Healthy Subjects aged 6 Months through 47 Months.

Sponsor: Seqirus Inc./Seqirus UK Limited

Project Achievements

188
Highest Number of
Subjects Enrolled

V130_14 Weekly updates for NH2022/23 Investigators and Study Team – week 7 -

Dear V130_14 Investigators and Study Team,

We have enrolled 468 subjects as of today.

We would like to highlight our top enrolling sites last week:

- Dr Sughra 58601, Al Shifa Research Centre
- Dr Zareen 58605, Avicenna
- Dr Grigore 64202, Spitalul Municipal Caracal

Thank you very much for getting us closer to our enrollment goal of 1000 subjects by 16th of December 2022!

In the interest of our subjects' safety, we encourage you to schedule the randomization visits as early as possible to get ahead of questions regarding enrollment, do reach out to your assigned IQVIA CRA.

The target enrollment breakdown per site can be found below for your convenience:

Country/Site #	PI Name	Enrollment vs. Target	Target enrollment	Actual enrolled
Pakistan	*		398	425
58601	Dr Sughra	100%	80	80
58602	Dr Khan	5%	60	3
58604	Dr Fatima	5%	100	5
58605	Dr Zareen	25%	100	25
58607	Dr Zaman	21%	58	12





Study Title: A Randomized, Double-masked, Parallel-group, Multicenter Clinical Study to Evaluate the Efficacy and Safety of AVT06 Compared with EU Eylea® in Subjects with Neovascular (wet) Age-related Macular Degeneration (ALVOEYE).

Sponsor: Alvotech Swiss AG

Project Achievements

66

Highest Subjects
Screened

24

Top Recruiting Site
Worldwide

11

Highest PK-Sub study
Subjects





Study Title: A Multi-center, Randomized, Blinded, Placebo-controlled, Phase 3 Clinical Study to Evaluate the Efficacy, Safety and immunogenicity of SARS-CoV-2 Bivalent mRNA Vaccine (LVRNA021) as Booster in Participants Aged 18 Years and Older who Completed Primary/1 Booster Dose(s) of SARS-CoV-2 Vaccination

Sponsor: AIM Vaccine Co., Ltd., Ningbo Rongan Biological Pharmaceutical Co., Ltd., LiveRNA Therapeutics Inc.

Project Achievements

2,356

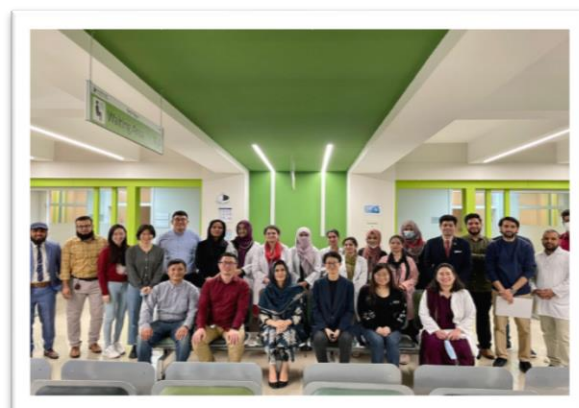
Subjects Screened

2,000

Subjects Enrolled

15 Days

Recruitment Duration



BILL & MELINDA GATES MEDICAL RESEARCH INSTITUTE

Study Title: A Phase 3, randomized, double-blind, placebo-controlled study to evaluate the effect of Bi-26 (strain of Bifidobacterium longum, B. infantis) supplementation versus placebo on weight gain in underweight infants

Sponsor: Bill & Melinda Gates Medical Research Institute, USA

Project Achievements

17

Subjects Screened

15

Highest Number
Enrolled

4 Months

Recruitment Duration



Study Title: A Phase 3 Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of Bemnifosbuvir in High-Risk Outpatients with COVID-19

Sponsor: Atea Pharmaceuticals, Inc. USA

Project Achievements

250

Subjects Screened

5

Subjects Enrolled

3 Months

Recruitment Duration



Study Title: A phase III, Randomized, Comparator-Controlled, Double-Blind, Multicenter Study to Evaluate the Immunogenicity, Safety and Lot to Lot Consistency of Three Lots of a PIKA Rabies Vaccine (Vero cell) for human use, freeze-dried in Healthy Adults using a Post-Exposure Prophylaxis schedule

Sponsor: Yisheng Biopharma (Singapore) Pte. Ltd.

Project Achievements

1004

Subjects Screened

889

Subjects Enrolled

15 Days

Recruitment Duration

741

Top recruiting Site
Globally for Group 2



"Knowledge is the life of the mind."

Abu Bakr Muhammad Ibn Zakariya al-Razi



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