Blindness (IAPB) highlighted that eye health significantly affects labour: people with vision impairment are 30% less likely to be employed and productive compared to those without.[4] This underscores the need for coordinated global, national and regional eye health initiatives towards eliminating corneal blinding conditions.

References

1. Khurana AK. Comprehensive Ophthalmology. Diseases of the Cornea. 4th ed. New Delhi: New Age International (P) Limited, Publishers; 2007: 89-90.
2. Wang EY, Kong X, Wolle M, Gasquet N, Ssekasanvu J, Mariotti SP, Bourne R, Taylor H, Resnikoff S, West S. Global Trends in Blindness and Vision Impairment Resulting from Corneal Opacity 1984-2020: A Meta-analysis. Ophthalmology. 2023; S0161-6420(23): 00187-2.
3. Ezeh EI, Okonkwo SN, Bassey BO, Ezeh RN, Etiowo N, Egbe E. Entero-coccal Ulcerative Keratitis in a 32-Year-Old Nigerian: A Rare Case. Niger J Ophthalmol 2022; 30:119-22.
4. WHO News (2023). "ILO/IAPB Eye health and the world of work". https://www.who.int/news/item/15-09-2023-ilo-iapb-eye-health-and-the-world-of-work [cited 2024 September 20]

Comparison of arclight loupe Vs traditional direct ophthalmoscope in evaluation of corneal epithelial defects by General practitioners: a proposal synopsis

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Background: Corneal blindness is the 5th, 4th and 3rd leading cause of blindness globally, in Sub-Saharan Africa and Nigeria, respectively.[1-3] Globally, corneal epithelial defects (CEDs), particularly corneal ulcers, constitute the major cause of corneal blindness.[4] Regrettably, under-resourced areas and low- and middle-income countries (LMICs) with the least capacity to manage corneal lesions bear the greatest burden.[4] Therefore, in order to encourage timely diagnosis of CEDs, the use of the +10 dioptre lens of the traditional direct ophthalmoscope (TDO) along with fluorescein dye has been advocated for use by non-ophthalmologists in the evaluation of suspected corneal lesions.[5] Unfortunately, TDO use by non-ophthalmologists, including the general practitioners (GPs), the first-line physicians, is grossly limited. TDO skills deficiency, its bulk, relatively high cost, and sophistication are largely implicated.[6] Arclight Loupe (AL), a portable, relatively low-cost and less sophisticated multipurpose diagnostic tool consisting of an anterior segment loupe, ophthalmoscope and otoscope, offers a reliable alternative to TDO.[7] However, its utility in CEDs by GPs has not been assessed.
Objective: To compare the utility of AL vs TDO in the clinical examination of corneal epithelial defects by GPs.
Methods: A comparative cross-sectional study shall be undertaken. The study shall adhere to the tenets of the Declaration of Helsinki, and ethical approval shall be obtained from the Institutional Review Board of the University of Calabar Teaching Hospital, Calabar. Ten (10) TDO-exposed GPs will be recruited, trained and subsequently randomly assigned into two groups of 5 GPs each (group 1 & group 2). A cross-over design will be utilised in which group

1 uses the Arclight (Figures 1 and 2) first and subsequently the TDO, while group 2 will use the instruments in the reverse order.
Study subjects (CED+ve vs CED-ve) shall be consecutively recruited and independently examined by the GPs. Three experienced Ophthalmologists (SL1-3) shall work together examining each consecutive subject with the Slit Lamp to establish the CED parameters (presence/location/shape/size/depth) as the "reference standard".

Figure 1: *The Arclight direct ophthalmoscope with selected features highlighted.*[7]

Figure 2: *Anterior segment loupe: blue light and fluorescein to highlight corneal ulcer ©Terry Cooper. Source: Kousha O., Blaikie A. The Arclight and how to use it. Comm Eye Health 2019; 32 (107): 50-51.*

This study will compare the Arclight loupe to the Welch Allyn 11720-VC ophthalmoscope in terms of four measures: (1) accuracy of CED parameters (compared against the "reference standard"), (2) ease of examination (EOE) for the examiners (GPs) using a score of 1–8, (3) ease of use (EOU) for the examiners (GPs) using a score of 1–5, (4) ocular comfort level (OCL) as determine by the level of glare experienced by the subject using a score of 1–4, and (5) length of examination (LOE) as determined by the subject's perceived duration of the assessment using a score of 1–4.

Results: Data obtained shall be entered and appropriately analysed with STATA/IC version 15.0.

Conclusion: The prospective utility in the diagnosis of corneal epithelial defects using AL compared to TDO among GPs in our environment shall be objectively ascertained.

References

1. World Health Organization. (2019). World report on vision. World Health Organization. Available at https://apps.who.int/iris/handle/10665/328717. [cited 2024 August 20]
2. Flaxman SR, Bourne RRA, Resnikoff S, Ackland P, Braithwaite T, Cicinelli MV, *et al.* Global causes of blindness and distance vision impairment 1990-2020: a systematic review and meta-analysis. Lancet Glob Health. 2017; 5(12): e1221-e1234.
3. Abdull MM, Sivasubramaniam S, Murthy GV, Gilbert C, Abubakar T, Ezelum C, Rabiu M. Causes of Blindness and Visual Impairment in Nigeria: The Nigeria National Blindness and Visual Impairment Survey. Invest Ophthalmol Vis Sci. 2009; 50:4114–4120.
4. Wang EY, Kong X, Wolle M, Gasquet N, Ssekasanvu J, Mariotti SP, Bourne R, Taylor H, Resnikoff S, West S. Global Trends in Blindness and Vision Impairment Resulting from Corneal Opacity 1984-2020: A Meta-analysis. Ophthalmology. 2023; S0161-6420 (23): 00187-2.

5. Timlin H, Butler L and Wright M. The accuracy of the Edinburgh red eye diagnostic algorithm. *Eye* 2015; 29(5): 619–624.
6. Alizadeh Y, Akbari M, Dourandeesh M, Aleali M. Do General Practitioners have Sufficient Knowledge and Skills in Using Direct Ophthalmoscope? A Survey on General Practitioners of Northern Iran. Int J Med Invest 2021; 10 (2): 156-165
7. Lowe J, Cleland CR, Mgaya E, Furahini G, Gilbert CE, Burton MJ, et al. The Arclight Ophthalmoscope: A Reliable Low-Cost Alternative to the Standard Direct Ophthalmoscope. J Ophthalmol. 2015. https://doi.org/10.1155/2015/743263

Early steroid responders post pterygium surgery: case series of adult patients in a tertiary hospital in Nigeria

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Introduction: Intraocular pressure (IOP) elevation can occur with the use of ocular and systemic steroids, particularly among steroid responders. Topical steroids are used to reduce post-operative inflammation following pterygium surgery. About 30-40% of adults are steroid responders[1], and such a response may occur as early as three weeks postoperatively. The mechanism of IOP elevation results from increased aqueous outflow resistance due to morphological changes in the trabecular meshwork.[2] An elevated IOP of a high magnitude and duration may damage the optic nerve and result in visual field loss. Our report aims to increase awareness among ophthalmologists regarding the occurrence of early intraocular pressure elevation in patients on topical steroid therapy following pterygium surgery.

Materials and Methods: This was a single-centre study that evaluated three patients who underwent unilateral pterygium excision and conjunctival autograft at the University of Calabar Teaching Hospital, Calabar, during a one-month period (April-May 2024). Data collected from patient charts included age, gender, date of surgery, number of follow-up visits, IOP measurements in both eyes and past ocular history. Postoperatively, all patients received topical antibiotics (ciprofloxacin eyedrops 3 times a day) and steroid drops (dexamethasone eye drops 4 times a day). Postoperative follow-up visits were at day 1, one week, three months, and six months after surgery. Ocular examination and IOP measurements (using the Goldmann applanation tonometer) were performed at each visit.

Results: A total of 6 eyes of 3 patients were studied. Their ages were 51 years, 44 years and 60 years respectively; two of them were females. The patients' demographic and clinical data are presented in Table 1. Table 2 shows the IOP measurements before and after pterygium surgery. All six eyes had normal IOP (10- 11 mmHg) preoperatively. The 3 operated eyes all had elevated IOP during the post-operative period, with the peak IOP ranging from 20 -30 mmHg.

Discussion: Steroid responders are individuals who experience an IOP rise in the setting of glucocorticoid use. The timeline over which the IOP rise may occur depends on the potency of the steroid, dose and route of administration.[3] In our study, the IOP measurements were similar between both eyes in three patients pre-operatively. However, an increase in the IOP of greater than 6 mmHg was noticed on the first postoperative day in all three patients, necessitating the addition of a topical IOP-lowering medication to their medication regimen. This finding corroborates the study done by Toseafa et al [4] in Ghana, who reported steroid-induced hypertension as a common complication of pterygium excision. Similarly, Wu et al [5] reported the probability of experiencing elevated IOP after pterygium excision among Africans to be 10.91% at 1 week, 16.6% at 1