ORIGINAL ARTICLE

A STUDY OF PREVALENCE OF VARIOUS OPHTHALMIC PROBLEMS IN POLICEMEN AND THEIR FAMILY MEMBERS OF VADODARA, GUJARAT

Jyotindra Natwarlal Brahmbhatt[1], Deepak Patel[2], Sheril Shah[3], Ruta Shah[3], Poonam Rana[3], Aakash Patel[3]

Author's Affiliations: [1]Proffessor; [2]Associate Professor; [3]Resident, Dept of Ophthalmology, SBKS MIRC, Sumandeepvidyapeeth, Pipariya, Vadodara, Gujarat
Correspondence: Dr Jyotindra Natwarlal Brahmbhatt E-mail: drjbrahmbhatt@gmail.com

ABSTRACT

Purpose: To find out the incidence of eye disorders amongst policemen and their family members in Vadodara district and create awareness about common eye problems.

Methods: Prospective study of 167 patients attending eye OPD, Dhiraj Hospital and eye camps organised by the hospital from July 2015 to October 2015 with the help of Snellen's chart, near vision chart, colour vision chart, slit lamp, trial set, torch, auto-refractometer,Lensometer,schiotztonometer, NCT, and ophthalmoscope.We utilised ophthalmic OT for surgical management.

Results: Out of 167 patients, refractive error was seen in 19, watering in 7, itching in 5 and redness in 2.

Conclusion: Police officers are prone to work intensively for long hours in sunlight. They are exposed to work in wind, dust and pollutants so in our study we found majority of them with refractive error and ocular allergies.

Keywords: Policemen, ophthalmic,

INTRODUCTION

There are very few studies regarding ophthalmic diseases and complaints in police personnel and their family in past. Policemen in Gujarat are poorly paid. They are supposed to do hard work. They have no time for their personal health. They spend very little time for their family. So we have selected this study for their ophthalmic problems. Policemen have high exposure to sunlight. It is a pre-disposing factor for development of pterygium. Pterygium is a triangular, wing-shaped, fibro-vascular tissue encroaching the cornea. It is a common ocular disease, which is potentially blinding.[1]

Long hours under the direct glare of the sun, prolonged exposure to UV rays and pollution have led to increased eye disorders in police personnel. Our study aims at finding out the incidence of ocular disorders amongst policemen and their family members in Vadodara district.We want to create awareness about common ocular problems amongst them. Increased awareness about basic precautionary measures like using protective sunglasses, maintaining proper eye hygiene and undergoing periodic eye checks will help. By our study we want to emphasise on their working conditions and improve them

MATERIALS AND METHODS

Our study is cross sectional, noncomparative. We obtained due permission from the ethics committee of the institute and started our study thereafter.We have examined a total of 167 patients after obtaining an informed written consent. Primary data like name, age, sex, socioeconomic status and residential address were recorded. Patients attending the general body check up camp at Dhiraj General Hospital were also included. Patients who were diagnosed with general diseases like hypertension and diabetes were referred to eye department were also

included. Patients were examined by whole of our team.For examination we usedSnellen's chart to check visual acuity. We performed torch light examination and undilated ophthalmoscopy.patient that needed further examination was taken to the ophthalmology department at Dhiraj General Hospital, Piparia. We examined refraction with auto-refractometer, trial set with cycloplegic refraction. Anterior segment examination was done with slit lamp biomicroscopeand posterior segment with ophthalmoscopes (direct, indirect). For screening of glaucoma, we measured intra-ocular pressure with NCT (non-contact tonometer) and with Goldman napplanation tonometry if needed, followed by Humphrey's automated perimeter. For diabetic retinopathy and other retinal problems, we performed OCT (optical coherence tomography). Patients who needed surgical treatment were taken to ophthalmology operation theatre and managed accordingly after admission in our ward.

Statically Analysis: For analysis, we have use SPSS V.20.0. All results displayed in frequency and percentage and Chi square test has been used to calculate p value.

RESULTS

We have examined 167 patients out of which almost 152 were males which make it 91.01% and only 15 which make it 8.98% were females.

Table 1: Pattern of ocular disorders (n = 63)

Diagnosis	No (%)
Refractive error	27 (42.8)
Cataract	15 (23.8)
Pterygium	4 (6.34)
Dry eye	2 (3.17)
MGD	2 (3.17)
Allergic disease	1 (1.58)
Colour blindness	3 (4.76)
Systemic disease	8 (12.69)
Chalazion	1 (1.58)

Table 2: Age distribution (n = 167)

Age (in Years)	No. (%)
0-30	81 (48.50)
30-60	83 (49.70)
60-100	3 (1.79)

The mean age of the patients was between 30-60 years. Out of 167 patients, 104 did not have any ophthalmic finding. From the remaining 63, we found refractive error in 42.8%, cataract in 23.8%, pterygium in 6.34%, dry eye in 3.17%, MGD (meibomian gland dysfunction) in 3.17%, allergic disease in 1.58%, colour blindness in 4,76%, systemic diseases like diabetes, hypertension etc in 12.69% and chalazion in 1.58%.

In our study 48.50% (81) patients were between age groups of 0-30 yrs, 49.70% (83) were from 30-60 yrs, and very few came in range from 60-100 only 1.79%(3).

DISCUSSION

Our study is conducted in a rural hospital. The policemen have no time for their ophthalmic problems. So we have done diagnostic camp in our hospital and their residential area with permissions from respective authorities. We have included policemen and their family members attending our outdoor patient department. Pterygium prevalence in rural Central India is about 13% among adult Indians aged 30+ years. Older age, male gender, lower educational level, lower body height and more time spent outdoors with vigorous work were associated factors.[2]In our study we found 3 cases of nasal pterygium. Allergic conjunctivitis is an inclusive term that encompasses seasonal allergic conjunctivitis (SAC), perennial allergic conjunctivitis (PAC), vernal keratoconjunctivitis (VKC), and atopic keratoconjunctivitis (AKC).[3]

Inherited congenital colour vision defects (CVD), comprising a number of distinct disorders, are relatively common. The X-linked disorder which results in difficulties in distinguishing between colours in the red/green spectrum is most common, while more severe types of CVD are rare. Although these disorders are non-progressive and untreatable, universal population screening for early identification is practised in many countries. [4,5,6]Incidence of colour vision defects in India: males-3.69% and females-1.044%.[7]

The study found 3 cases of partial colour blindness. A refractive error may be defined as a state in which the optical system of the non-accommodating eye fails to bring parallel rays of light to focus on the fovea. Myopia and hyperopia are the states of refractive error in which the optical system of the eye brings parallel rays of light into focus anterior and posterior to the fovea, respectively, resulting in blurred vision.[8] Undercorrected refractive error is the most common cause of reversible blindness in India.[9] Studies from urban India suggest that 49.3 million of those aged ≥15 years may have refractive errors. In our study we found 27 cases of refractive error.

We have found more cases of refractive error including presbyopia. 15 cases of cataract were detected and for immature cataract we have advised 3 months follow up. for mature cataract we have given appointments for planned surgery. Due to lack of personal hygiene MGD and chalazion cases were found. exposure to sunlight, dust and pollutants dry eye was also found.

Ocular trauma is one of the leading causes of mono ocular blindness in police officers.In a study by Aravind hospital, a history of ocular trauma in either eye from 229 (4.5%) persons, including 21 (0.4%) persons with bilateral ocular trauma. Blunt injuries (n = 124; 54.9%) were the major cause for trauma. The most common cause was ocular trauma occurred in agricultural laborer (n = 107; 46.9%).[10] In our study no case of ocular trauma was reported.

CONCLUSION

Police officers are prone to work intensively for long hours in sunlight. They are exposed to work in wind, dust and pollutant hence they are likely to get eye problems frequently due to lack of personal time for themselves and their family's health problems. In our study we found majority of them with refractive error, ocular allergies, dry eyes, MGD and colour blindness.

By this study we have created awareness about eye care and common eye diseases amongst them. We have guided them how to work on computer, mobiles and other electronic gadgets while taking care of their eyes. We even showed them how to keep their eyes hygenic while working on the fields.

REFERENCES

1. Leonard P, Jocelyn L, Donald T: Current concepts and techniques in pterygium treatment. *CurrOpin Ophthalmology* 2007, 18:308-313.
2. Vinay Nangia, Jost B. Jonas , Deepa Nair, Nandita Saini, PrabhatNangia,Songhomitra Panda-Jonas. Prevalence and Associated Factors for Pterygium in Rural Agrarian Central India. The Central India Eye and Medical Study December 4, 2013. DOI: 10.1371/journal.pone.0082439
3. Bielory L, Frohman L. Allergic and immunologic disorders of the eye. J Allergy Clin Immunol.1992;86:1–20.
4. P Cumberland, J S Rahi, C S PeckhamHealth and Safety Executive. Colour vision. Medical Series Guidance Notes, MS7. London: HMSO, 1987:1–8.
5. Taylor WOG. Effects on employment of defects in colour vision. Br J Ophthalmol 1971;55:753–60.
6. Holroyd E, Hall DMB. A re-appraisal of screening for colour vision impairments. Child Care Health Dev 1997; 23: 391–8.
7. Krishna Swami Mehra. INCIDENCE OF COLOUR BLINDNESS IN INDIANS. Br J Ophthalmol. 1963 Aug; 47(8): 485–487.
8. Katz JTielsch JMSommer A Prevalence and risk factors for refractive errors in an adult innercity population. *Invest Ophthalmol Vis Sci.* 1997;38334- 340
9. Prema Raju; S. Ve Ramesh; Hemamalini Arvind; Ronnie George; Mani Baskaran; Pradeep G. Paul; Govindasamy Kumaramanickavel; Catherine McCarty; Lingam Vijaya. Prevalence of Refractive Errors in a Rural South Indian Population. Investigative Ophthalmology & Visual Science 2004;45:4268-4272. doi:10.1167/iovs.04-0221
10. Nirmalan PK, Katz J, Tielsch JM, Robin AL, Thulasiraj RD, Krishnadas R, Ramakrishnan R; Aravind Comprehensive Eye Survey. Ocular trauma in a rural south Indian population: the Aravind Comprehensive Eye Survey. Ophthalmology. 2004 Sep;111(9):1778-81.