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Profile of Ocular Emergencies in a Tertiary Health Centre

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Abstract:
A cross sectional study was carried out to determine the incidence, types and pattern of presentation of ocular emergency in a tertiary eye care centre.Demography characteristics, medical history,presenting visual acuity and diagnosis of all patients managed as ocular emergencieswere obtained from their hospital records. Three hundred and eight ocular emergencies constituting 10.1% of the total new cases seen were studied. The mean age was 30.7±21.5 years. Non traumatic conditions constituted 57.5% of the cases seen with keratitis and conjunctivitis as the leading diagnosis.Majority (87%) presented after 24hours of onset of symptoms with traumatic cases having a greater odd of presentation within 24hours. A total of 33.4% of the cases were blind in the affected eye at the time of presentation. Ocular emergencies still have a relatively large share of eye conditions in Ekiti with majority of patients having late presentation. One of every three emergencies had monocular blindness in the affected eye at presentation. We recommend an integration of primary eye care into primary health care in Ekiti to minimise ocular morbidity in emergencies. Health education is needed to reduce risk of infections and inflammations by improved ocular hygiene and wearing of protective eye devices.
KEY WORDS: *Ocular, Emergency, Ekiti, Monocular, Blindness*

I. INTRODUCTION

Ocular emergencies are conditions that require urgent medical attention to avert permanent visual impairment. They have a major share in various ocular diseases and are associated with high risk of complications.[1] Although the definitions of urgency for medical attention may vary from one region to another, the most common definitions of level of urgency documented are: immediate (within one to two hours); urgent (within 24hours); and semi-urgent-(within a week).[2]Categorising patients into level of urgency help to initiate appropriate care, counselling and timely referral.[2] Successful patient outcomes in instances of emergencies depends on prompt recognition as well as appropriate initial management and/or referral.[3]Careful examination and appropriate treatment are important to minimise the occurrence of poor visual prognosis and vision loss or blindness.[4,5]Even when vision loss or blindness do not occur, cosmetic blemish may occur if prompt actions are not taken .The causes of ocular emergencies vary from traumatic injuries, chemical injuries, inflammation to neurovascular conditions . Timing is critical especially in chemical injury as the potential for damage gets greater with longer exposure.[6]Inadequate safety measures at work places, lack of adequate care facilities and delay in presentation are some of the inferred factors for poor outcome of some ocular emergencies in developing countries.[3] An established ophthalmic emergency unit is a cheap and efficient way to diagnose and care for eye emergencies[7] as well as provide assistance to patients with eye diseases whose morbidity or complications might be aggravated by a delay in receiving proper management.[8] Ekiti state like most states in Nigeria have primary health care facilities that are not adequately equipped for primary eye care delivery hence many patients have to get to the tertiary health institution for care.[9] The findings of this study will therefore give a hospital-based representation of the types, incidence and pattern of presentation of ocular emergencies in Ekiti . It will also assist in the planning of ways of improving emergency eye care as well as help in health education towards avoidance and reduction of morbidities from ocular emergencies as a whole.

II. METHODS

Ophthalmology Department of Ekiti State Tertiary Centre provides 24hours emergency services including micro surgical services whenever necessary to all presenting patients. This study was carried out in line with the ethical standards according to the Helsinki Declaration of 1975 as revised in 1983.Records and history of all patients who presented with emergency eye conditions in this facility from January 2013 to July 2015 were reviewed. Information included demography characteristics, duration of symptoms before presentation, laterality of ocular ailment, self-medication, presenting visual acuity and diagnosis. WHO guideline was used to grade the visual acuity with ≥6/18 as normal, <6/18 to >3/60 as visual impairment and <3/60 to no light perception as blindness. Infants were classified as either blind or believed not to be blind. Clinical records with insufficient data were excluded.

Data obtained were recorded and analysed using Statiscal Package for Social Sciences (SPSS) version 20. Means (Standard deviations) were used to describe the distributions of continuous variables. Categorical variables were described in Percentages. Comparisons of categorical data were performed with the use of Pearson's chi-square test. For continuous data Student*t*-test was used to compare means. Correlation between two variables was performed by Pearson's correlation co-efficient 'r'. $P < 0.05$ was considered statistically significant.

III. Results

A total of three hundred and eight ocular emergencies were seen during this period. This constituted 10.08% (308) of the 3053 new cases seen. One hundred and ninety five (63.3%) were males while 113 (36.7%) were females with a male: female ratio of 1.7:1. The ages ranged from 2months to 103years with mean age of 30.67±21.53years.(Figure1)Majority of the patients 249(80.1%) were aged less than 50years. Males constituted 67.1% (167) of them. Males consistently outnumbered the females across all age groups except in those above 60years of age.

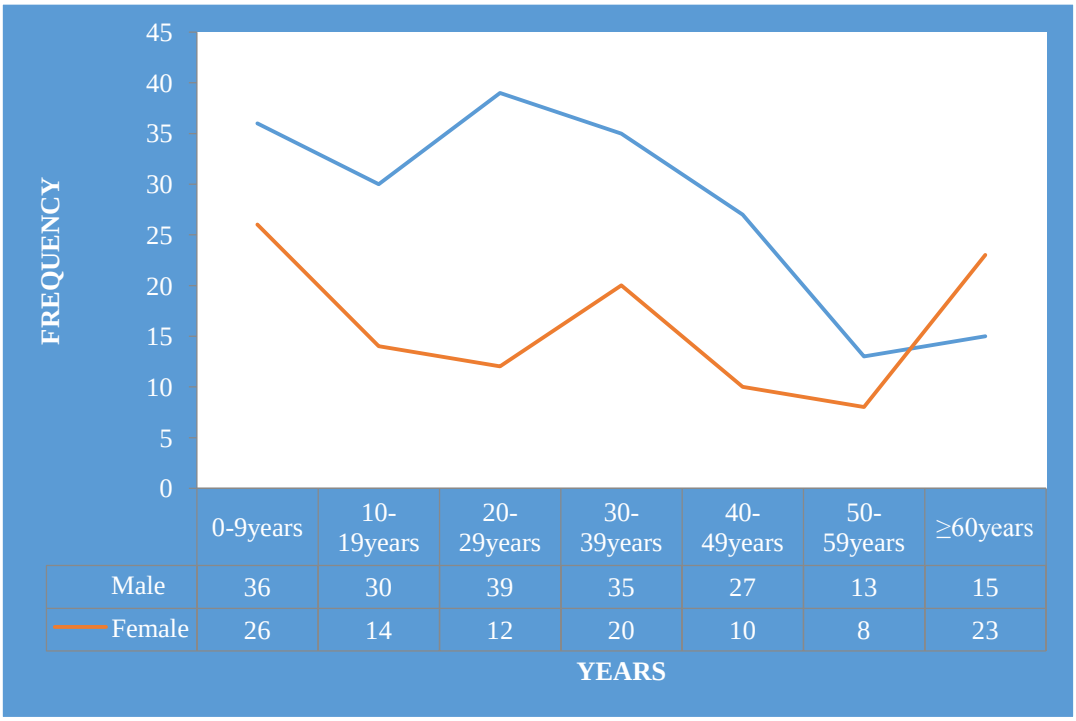
"TABLE1"Only 37(12.01%) presented within 24hours of onset of eye complaints. Twenty six of these 26/37 (70.3%) were traumatic eye emergency. The remaining 11/37 (29.7%) were non traumatic eye injuries. (x^2 =13.576,df=1,p = 0.001 OR= 3.92 (CI: 1.856-8.262). Another 31(10.1%) of all presented between 24-48hours of eye symptoms.

Majority of the cases were uniocular 268/308 (87%) with the left being the affected eye in139 cases (45.1%) and the right eye in 129 cases (41.9%) . The remaining 40 (13%) were binocular. Males consistently outnumbered females in ocular emergency (X^2=14.273,df=1,p value<0.001 OR=1.692 CI: 1.046-2.737) "Figure2"

One hundred and three (33.4%) presented with monocular blindness while 11.36% had visual impairment at presentation. Most (112/138) 81.2% of those with visual impairment and blindness in the affected eye presented after 72 hours of the onset of eye complaints. "TABLE 2" Non traumatic conditions like infections and inflammations constituted 57.5% of the cases seen with keratitis and conjunctivitis as the leading diagnosis. Eyelid injuries topped the list of traumatic ocular conditions "TABLE 3"

About 2/3rd of the patients did not apply any self prescribed medication before presentation at the hospital. Majority of the patients that had used self medication utilised inappropriate medications. "Fig 3"

IV. FIGURES AND TABLES



	0-9years	10-19years	20-29years	30-39years	40-49years	50-59years	≥60years
Male	36	30	39	35	27	13	15
Female	26	14	12	20	10	8	23

Figure 1: age and sex distribution

Figure2: gender versus types of ocular emergency

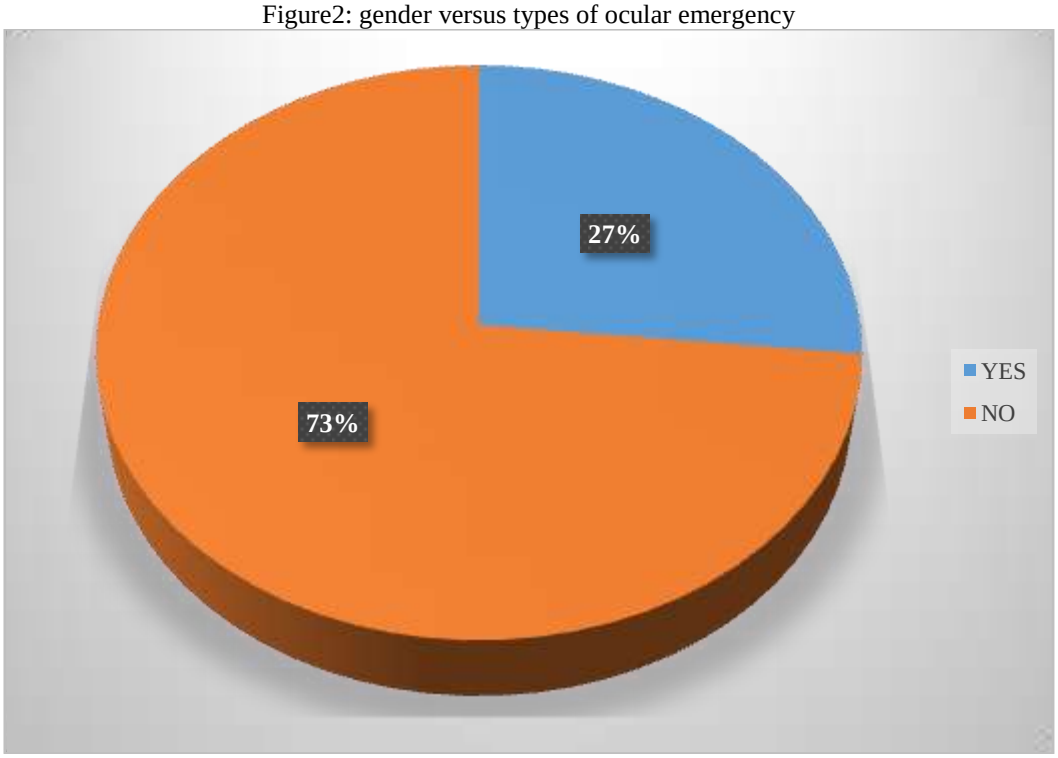


Figure 3: self medication practice

TABLE 1: Duration of eye complaints before presentation versus type of ocular emergency

DURATION	TYPES OF OCULAR EMERGENCY		
	TRAUMATIC (n)	NON-TRAUMATIC (n)	TOTAL(n)
WITHIN 24HRS	26	11	37
>24HOURS-48HRS	19	12	31
>72HOURS-7DAYS	41	82	123
>7DAYS	42	75	117
TOTAL	128	180	308

TABLE 2: Presenting va versus duration of ocular emergency

Duration of presentation of ocular emergencies					
VA OF AFFECTED EYE	**WITHIN 24HRS**	**>24-48HRS**	**□72HRS**	**>7DAYS**	**TOTAL**
□6/18 (NORMAL)	**21**	**20**	**70**	**56**	**167**
<6/18-3/60 (VI*)	**3**	**3**	**15**	**14**	**35**
<3/60 (BLIND)	**12**	**8**	**38**	**45**	**103**
BNB**	**1**	**0**	**0**	**2**	**3**
TOTAL	**37**	**31**	**123**	**117**	**308**

*VI- Visual impairment,** BNB-Believed not to be blind

TABLE 3: Diagnosis of ocular emergency

NON-TRAUMATIC	**n**(%)	**TRAUMATIC**	**n (%)**
KERATITS	59(33.3)	TRAUMATIC HYPHAEMA	14(10.7)
CONJUNCTIVITIS	49(27.7)	PENETRATING INJURY	24(18.3)
UVEITIS	30 (16.9)	LID INJURY	36(27.5)
ORBITAL CELLULITIS	20 (11.3)	SUBCONJUNCTIVAL HAEMORRHAGE	22 (16.8)
GLAUCOMA(AACG*)	10 (5.6)	CORNEAL FOREIGN BODY	16(12.2)
PANOPHTHALMITIS	5 (2.8)	CHEMICAL/THERMAL INJURY	9(6.9)
INFLAMED PTERYGIUM	2 (1.1)	TRAUMATIC IRITIS	8(6.1)
RETINOBLASTOMA	1 (0.6)	VITREOUS HAEMORRHAGE	1(0.8)
3RD NERVE PALSY	1 (0.6)	OPTIC NERVE AVULSION	1(0.8)
TOTAL	**177**	**TOTAL**	**131**

*AACG -ACUTE ANGLE CLOSURE GLAUCOMA

V. Discussion

Ocular emergencies constituted about 10% of the total new cases seen in our health facility during the study period. A study of ophthalmic emergencies in Benin city reported a 1.1% prevalence among total emergency cases at the hospital.[10] This makes comparison with our results difficult. Majority (80.1%) were less than 50 years old. This constitutes the active group in our society. A similar report was made by May et al where 85% of patients admitted to Emergency ophthalmic unit were less than 30 years old.[11] Other studies in south west Nigeria reported 70% aged less than 40years [12] and 84.3% aged 50years and below . [13] The fact that about 1/3(34.4%) of the emergency cases were aged below 19years (Children and adolescents) also calls for attention. This age group have been said to be at high risk of injuries due to unsupervised play in school and at home.[14]

There were more males than females. Males were at greater risk of having ocular emergencies than females (OR =1.692 CI: 1.046-2.737). Several previous reports indicated that there is greater involvement of men in traumatic eye injuries and other ocular emergencies when compared with their female counterparts.[13,15]The reason given includes greater involvement of men in activities that expose them to risk of trauma and other emergencies. Resnikoff et al however opined that it may be due to a greater likelihood among men to seek eye care more than women.[16]

Although about two-thirds of these patients did not resort to self-medication, the few that did utilised various inappropriate eye medications. A previous study at the same centre among among our ophthalmic patients reported approximately 90% rate of inappropriate self-medication practice.[17]

Majority presented to the emergency department after 24hours. Only 12.01% presented within 24hours of onset of eye complaints. Strikingly 123(89.1%) of those cases with visual impairment and blindness in the affected eye presented after 24 hours. Ordinarily emergency eye diseases should necessitate prompt presentation for diagnosis and management.[18] This is often understandably so because patients are anxious about their vision and threat of vision loss.[19] However the contrary findings in this study should call for more research to find out reasons for the delay in presentation. Foreign and local studies have also observed late presentation amongst traumatic and non-traumatic ocular emergencies.[20-22] Some studies have revealed some barriers to timely utilization of eye care services to include distance to hospital, socio-cultural beliefs and practices.[23] Dawodu et al in Benin city stated the dearth of eye care professionals and primary eye care professionals in the rural communities as reasons for late presentation among emergencies.[10] A study by Omolase et al proposed proximity to the eye centre as a possible reason for a significant proportion of their patients reporting within 24hours of onset of eye complaints.[21] The farthest distance from our eye-care facility within the state is about 60km. Although this may sound like a short distance; other factors like poor state of some roads and other reasons which may include lack of finances, high cost of treatment, ignorance and lack of awareness of the eye care facility [23] may also make early presentation at an eye care facility more difficult than it appears. Removal of these various barriers or minimizing them has been documented to contribute to global elimination of avoidable blindness. We however observed a statistically significant earlier presentation among the traumatic eye injuries when compared with the non-traumatic emergencies (Odds ratio=3.916 CI: 1.856-8.262, P <0.001). There was a high rate of blindness and visual impairment among our patients at presentation. The prevalence of monocular blindness at presentation was greater than 30%. The lack of knowledge that their delay in decision to seek emergency services may result in the excessive use of medicines and diagnostic tests[24] thereby increasing resultant ocular morbidity is worrisome. Timely and appropriate intervention especially with availability of microsurgical techniques has been documented to greatly improve the visual prognosis of patients with ocular emergencies.[25] Public health education is advocated in this community to ensure early presentation in the eye department to prevent resultant serious visual disability. The need to wear ocular protective devices during daily activities to minimize needless injury to the eye should also be emphasized.

In this study, non-traumatic ocular emergencies constituted 57.5% of all the ocular emergencies. Of which keratitis was the commonest while lid injury was the commonest of the traumatic ocular emergency. This was similar to a study done in South western part of Nigeria where non injurious emergencies constituted 47.7% .[12] It is however contrary to some series of report from developing and developed countries where traumatic eye diseases were the leading reasons for consultations.[10,26-29]The reasons for this pattern in this study was not actually known but could be as a result of lack of ignorance or poor knowledge on the use of unorthodox eye medication practice which could have averted serious eye problems from minor eye complaints. The enforcement of seat belt use by the government agents might have also reduced ocular injuries from RTA as the passage of child right laws reducing child battering.

Good visual outcome following ocular emergencies will depend on prompt presentation, recognition and assessment as well as initial management [29]. Therefore, aggressive health education is of utmost need in the Ekiti community to prevent delay in presentation after having eye emergency. We want to advocate for improved primary and secondary eye care services at the state level to minimise potentially avoidable vision

loss which usually resulted from delayed presentation at the existing tertiary eye care facility and inappropriate self-medication.

VI. CONCLUSION

Ocular emergencies still have a relatively large share of eye conditions in Ekiti with majority of the patients having late presentation. The working age group were the worst hit. Children and adolescents were not left out of this potentially blinding condition. One of every 3 emergencies had monocular blindness in the affected eye at presentation. Late presentation was a common pattern as have been observed in previous diverse studies within the country and abroad. We recommend an integration of primary eye care into primary health care in Ekiti to minimise ocular morbidity in ocular emergencies. Intensified Health education programmes are also needed to reduce risk of infections and inflammations by improved ocular hygiene and wearing of protective eye devices and also to encourage victims to present early in order to avoid blindness.

VII. Conflict of interest

The authors have no conflict of interest.

References

[1]. Abdul qayyum, Abdul hameed khokhar, Abdul samad achakzai. Prevalence of Ocular Emergencies in Quetta –Balochistan. Pjmhs 2009;3(3):43-45
[2]. Dianna Graves, COMT, BS.Triaging ocular emergencies 2010–2012, BSM Consulting.
[3]. Christopher H,Michael L .Ocular emergency. Australian Family Physician2008;37(7): 506-509
[4]. Pierre Filho de Tarso Ponte,Gomes Paulo Rogers Parente,Pierre Erika Teles Linhares, Pinheiro Neto Felisberto Bastos.Profile of ocular emergencies in a tertiary hospital from Northeast of Brazil Rev. bras.oftalmol.2010 ; 69 (1):12-17
[5]. Aslam SA, Sheth HG, Vaughan AJ. Emergency management of corneal injuries. Injury 2007;38:594-597.
[6]. Parul Singh, Manoj Tyagi, Yogesh Kumar, K.K Gupta, P.D Sharma. Ocular chemical injuries and their management.Oman J Ophthalmol.2013;6(2):83-86
[7]. Grand B, Bourcier F, Agdabede I, Laroche I. Activity and epidemiology in an ophthalmological emergency centre. J FrOphthalmol 2002;25:701-711.
[8]. Carvalho RS, José NK. Ophthalmology emergency room at the University of São Paulo General Hospital: a tertiary hospital providing primary and secondary level care. Clinics 2007; 62 ; 301-308.
[9]. Onakpoya OH , Adeoye AO, Adegbehingbe BO, Akinsola FB. Assessment of Human and Material Resources Available for Primary Eye-care Delivery in Rural communities of South-western Nigeria. West Indian Med J 2009:58(5);472-475
[10]. Dawodu OA, Osahon AI, Atamah A, Okeigbemen V. Ophthalmic Emergencies in Benin City, Nigeria. Nigerian Journal of Ophthalmology 2009;17(1):15-18
[11]. May DR, Kuhn FP,Morris RE, Witherspoon CD, Danis RP, Mathhhews GP, Mann L, Graefes Arch Clin Exp Ophthalmol. 2000; 238(2): 153
[12]. Onakpoya O H, Adeoye A O. Eye emergencies in a Nigerian sub-urban tertiary hospital: pattern and etiology. East African Journal of Ophthalmology.2008;14(2)23-28
[13]. Akinsola F.B, Akinbami O.A, Aribaba O.T, Onakoya A.O, Adefule-Ositelu A.O. Pattern of ocular emergencies seen at L.U.T.H over a period of 1year. Nig Q J Hosp Med. 2007;17(2):90-92
[14]. Omoti AE. Ocular trauma in Benin City, Nigeria. African J Trauma 2004;2(2-4):67-71
[15]. Okoye OI . Eye injury requiring hospitalization in Enugu Nigeria. A one-year survey Niger J Surg Res 2006;8:34-37
[16] Resnikoff S, Pascolim D. Etya'ale D et al. Global data on visual impairment in the year 2002. Bull World Health Organ 2004; 84: 844-851
[17]. Ajayi I .A, Omotoye O.J, Ajite K.O, Fadamiro C. O, Ajayi E. A. Self medication practices among patients seen in a suburban tertiary eye care centre in Nigeria. AJMS 2014;(5):29-34
[18]. Carvalho RS, José NK. Ophthalmology emergency room at the University of São Paulo General Hospital: a tertiary hospital providing primary and secondary level care. Clinics 2007; 62 ; 301-308.
[19]. Janet A, Brian L. An Evidence-Based Approach To Traumatic Ocular Emergencies.E Medicine practice2010; 12(5)
[20]. Zelalem Addisu. Pattern of ocular trauma seen in Grarbet Hospital, Butajira central Ethiopia. Ethiop J Health Dev 2011;25(2):150-155
[21]. Omolase C.O, Omolade E.O, Ogunleye O,T, Omolase B.O, Ihemedu C.O, Adeosun A.O Pattern of Ocular Injuries in Owo Nigeria. Ophthalmic Vis Res 2011; 6(2):114-118
[22]. Okoye O, Chuka-Okosa CM, Magulike N.O. Ten year rural experience of surgical removal in a primary care centre in south-Eastern Nigeria . Rural and Remote Health 2013;13:2303.
[23]. Ajite KO, Fadamiro CO, Ajayi IA, Omotoye OJ. Utilization of Eye Care Services Among Staff of a Tertiary Hospital. Asia-Pacific Journal of Ophthalmology2013;2(1):28-31
[24]. Stein AT, Harzheim E, Costa M, Busnello E, Rodrigues LC. The relevance of continuity of care: a solution for the chaos in the emergency services. Fam Pract. 2002; 19(2):207-210
[25]. Bhopal RS, Parkin DW, Gullie RF, Han KH. Patterns of Ophthalmological accident and emergencies presenting to hospitals. J Epidemiol Community Health1993;47:382- 387.
[26]. Kaimbo WK, Spileers W, Missotten L. Ocular emergencies in Kinshasha (Democratic Republic of Congo). Bull Soc Belge Ophthalmol 2002;284:49-53.
[27]. Jan S, khan S, Khan M N, Iqbal A, Mohammad S. Ocular emergencies. J Coll Physicians SurgPak 2004;14:333-336
[28]. Girard B, Bourcier F, Agdabede I, Laroche L. activity and epidemiology in an ophthalmic emergency centre. J Fr Ophthalmol 2002;25:701-711.
[29]. Tsai CC, Kau HC, Kao SC, Liu JH. A review of ocular emergencies in a Taiwanese medical center. Zhonghua Yi Xue Za Zhi 1998;61:414-420.