

Research Article

Clinical Profile of Pediatric Ocular Morbidity in a Tertiary Eye Care Centre in Western Region of Nepal

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Keywords

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Abstract

Purpose: To describe ocular problems seen and treatments provided to the children attending a tertiary level eye care facility in western Nepal.

Material and Methods: In the hospital based retrospective study, all children coming to the pediatric department of Lumbini Eye Institute during October and November, 2013 were reviewed. Out of 1295 new children, 1061 children in age of 0-15 years were included in the study. Data on age at presentation, sex and diagnosis were collected from clinical charts and analyzed. Patients were grouped into four age groups (0-1 years, 2-5 years, 6-10 years and 11-15 years) and grouped in terms of clinical diagnoses.

Results: Among 1061 children examined, male: female ratio of 1.43:1, the most common group was children aged 11-15 years (35.5%). Conjunctival diseases were the most common disorder 235 (22.1%) in children followed by refractive errors (19.8%) and disorders of lacrimal drainage system (15.7%). 70.6% children needed medical treatment, 21.5% required glasses, 5.5% required surgery and 1% required orthoptic treatment. 56 % were Nepalese children.

Conclusion: Conjunctival disorder and refractive errors were the most common occurring disorder. Males were more affected than females. Most children needed medical treatment followed by optical correction.

INTRODUCTION

Eye diseases in children are important causes of medical consultation and require prompt attention because of their impact on a child's development, education, future work and quality of life. Children have unique problems in terms of ocular morbidities, not only due to their inability to express their problems, but also because of the potential to develop amblyopia. Although most

ocular lesions are preventable but due to ignorance and carelessness, they cause impairment of vision or even blindness. Childhood blindness is second only to cataract in terms of "blind years" [1]. Hence strategies to manage paediatric ophthalmic disorders must be initiated as early as possible, with interventions at all the three levels of primary, secondary and tertiary eye care centres. Possible measures include optical, orthoptic, medical and surgical interventions [2].

The present study was conducted with the objective to

determine the pattern of ocular morbidity in children less than 16 years of age children presenting in the outpatient department (OPD) of Pediatric Ophthalmology Unit of a tertiary care hospital of Western Region of Nepal.

MATERIALS AND METHODS

Medical records of all new patients aged 15 years and younger, who presented to the outpatient department of pediatric Ophthalmology unit of Lumbini Eye Institute ophthalmology in October and November, 2013 were retrospectively reviewed. Informed consent was taken from Institutional board. Refraction was performed when required under cycloplegia by an Optometrist. Anterior segment examination was done with torch and slit lamp. Posterior segment examination was performed after dilating the pupil using direct and indirect ophthalmoscope by two pediatric Ophthalmologists.

The age at presentation, sex and clinical diagnosis were determined from records. The clinical diagnosis was grouped as

appropriate diseases. Patients were grouped by age into four age groups (0-1 years, 2-5 years, 6-10 years and 11-15 years). The data were recorded and analyzed using SPSS statistics program.

RESULTS

A total of 1061 new children attended at Pediatric Ophthalmology Department, Lumbini Eye Institute were included in the study. The mean age was 7.8 years with standard deviation ±4.8. Their ages ranged between one month and 15 years. Majority (59%) of the children were males with a male to female ratio of 1.43: 1. The 11-15 years age group had the largest proportion with 35.5% of children; followed by the 6-10 years age group (28.3%).

For the main presenting complaint, 257 (24.2%) children complained of watering followed by poor distance vision (21.9%), redness (18.9%) and (0.6%) complained of night blindness.

The commonest eye diseases were of the conjunctiva (conjunctivitis, subconjunctival hemorrhages etc) in 235(22.1%) children followed by refractive error (19.8%), lacrimal drainage system (15.7%), and cornea and sclera (12.4%). 1.6% of children involved posterior segment disease (retina and optic nerve disease).

Among the children, 55.9% could achieve a distance visual acuity of 6/60 or better after receiving the correct spectacles. 32 (3%) children already had spectacles at the time of presentation.

Among the children with conjunctival diseases, allergic conjunctivitis accounted for 56.2% followed by subconjunctival haemorrhage, 18.7%.

Among the corneal and sclera diseases, 36.4% were presented with keratitis followed by corneal scar, 29.6% and bitot's spot 15.5%.

Medication was advised on 749(70.6%) children followed by optical correction (21.5%), surgical (5.5%), and orthoptic exercise (1%).

DISCUSSION

In our study, 59% were male and 41% were female. These findings were quite similar to study done by Sethi S et al at Khyber Teaching Hospital, Peshawar where 60.6% were male and 39.1% were female [2]. The higher frequency of the consultation was seen in the older age group of 11-15 years (35.5%) that was similar to a study done by Onakpoya et al [1]. Chandana

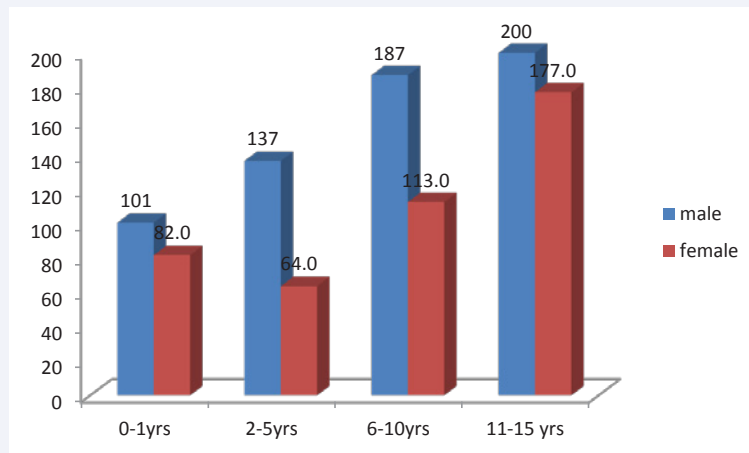


Figure 1 Distribution of children at different age group.

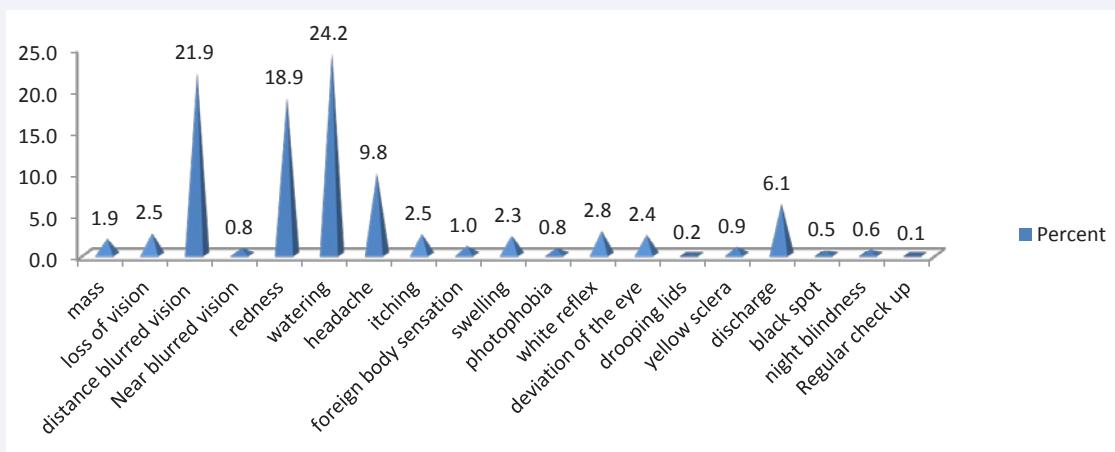


Figure 2 Main presenting complaints of the children.

Table 1: Distribution of eye diseases at different age group in children.

Diagnosis	Age group				Total
	0-1yrs	2-5yrs	6-10yrs	11-15 yrs	
No abnormality detected(NAD)	6	14	32	51	103(9.7%)
Conjunctiva	34	58	75	68	235(22.1%)
Cornea and sclera	10	30	44	48	132(12.4%)
Whole globe	7	3	6	6	22(2.1%)
Uvea	0	1	2	4	7(0.7%)
Vitreous and retina	0	3	7	5	15(1.4%)
optic nerve	0	0	1	1	2(0.2%)
Lens	9	10	16	10	45(4.2%)
Ocular muscle	2	7	14	10	33(3.1%)
Lids	7	17	15	41	80(7.3%)
Lacrimal drainage system	103	40	11	13	167(15.7%)
Refractive error	4	17	75	114	210(19.8%)
Unknown	1	1	2	6	10(0.9%)
Total	183	201	300	377	1061(100%)

Table 2: Distance visual acuity in children.

Vision in best eye	Presenting	After refractive correction
6/6-6/18	534(50.3%)	537(50.6%)
<6/18 - 6/60	59(5.6%)	56(5.3%)
<6/60 - 3-60	15(1.4%)	15(1.4%)
<3/60 -1/60	14(1.3%)	15(1.4%)
<1/60-PL	14(1.3%)	13(1.2%)
NPL	4(0.4%)	4(0.4%)
NA	421(39.7%)	421(39.7%)
Total	1061(100%)	1061(100%)

Note: NA(Not applicable) =Visual acuity of the children could not quantify on Snellen's equivalent
 NPL=No perception of light, PL=perception of light

Table 3: Distribution of conjunctival diseases among the children.

Conjunctival diseases	Age group				Total
	0-1yrs	2-5yrs	6-10yrs	11-15 yrs	
Granuloma	0	0	2	0	2(0.9%)
Allergic	21	33	39	39	132(56.2%)
Infective(bacterial)	2	2	2	10	16(6.8%)
Foreign Bodies	6	1	5	3	15(6.4%)
Concretions	0	1	2	0	3(1.3%)
Naevus	0	3	3	4	10(4.3%)
Sub Conj He	5	14	20	5	44(18.7%)
Conj. Laceration	0	2	0	0	2(0.9%)
Pinguecula	0	2	1	6	9(3.8%)
Thermal burn	0	0	1	0	1(0.4%)
Pterigium	0	0	0	1	1(0.4%)
Total	34	58	75	68	235(100%)

Chakraborti et al found a higher frequency of the consultation in the age of 6-10 years (38.87%) [3].

Diseases of conjunctiva were the most common disorder (22.1%) with conjunctivitis being the most common disease. This may be due to low socio economic and poor literacy rate of the catchment area. Among them allergic conjunctivitis accounted for 56.2% and infective conjunctivitis 6.8%. Various studies reported allergic conjunctivitis as the most common surface disorder. Dusty polluted environment, rural living may

contribute to development of chronic allergic conjunctivitis. Proper management can bring relief to the conditions.

In this study, refractive errors were present in 210 (19.8%) children with myopia, hypermetropia and astigmatism. Refractive errors were found to be more in older age group (11-15yrs). Onakpoya et al reported 14.3%, Sethi et al found 12.7% [1,2]. Various studies have quoted the refractive error prevalence to be between 12 to 31%. The incidence of refractive error may have been underestimated as it was a hospital based study.

Table 4: Distribution of corneal and scleral diseases among the children.

Cornea and sclera	Frequency	%
scar(trauma)	1	0.8
keratitis	48	36.4
bitot's spot	21	15.9
conjunctival xerosis	1	0.8
keratomalacia	1	0.8
epithelial defect	3	2.3
scar(vit A deficiency)	33	25.0
foreign bodies	7	5.3
scleral neavus	2	1.5
episcleritis	4	3.0
microcornea	4	3.0
staphyloma	1	0.8
corneal perforation	1	0.8
scar (infection)	5	3.8
Total	132	100.0

Table 5: Methods of treatment at different age group.

Treatment/advice	Age group				Total
	0-1yrs	2-5yrs	6-10yrs	11-15 yrs	
None	2	1	6	10	19(1.8%)
Medication	165	163	195	226	749(70.6%)
Surgery and medication	11	16	16	15	58(5.5%)
Optical correction	5	20	80	121	226(21.3%)
Convergence exercise	0	0	1	2	3(0.3%)
Patching	0	1	1	2	4(0.4%)
Optical+patching	0	0	1	1	2(0.2%)
	183	201	300	377	1061(100%)

Globally, uncorrected refractive errors are the main cause of visual impairment in children aged 5-15 years [4].

It was reported that the blind schools in Pakistan and India where corneal diseases accounted for 12% and 26.4% respectively of all children with severe visual impairment/blindness [5,6]. In our study, corneal and sclera diseases accounted for only 12.4%. The most common cause of corneal scar was found to be vitamin A deficiency. The government of Nepal has incorporated the vitamin A capsule distribution to all children aged 6 months to 5 years in Nepal twice a year. It has contributed for reduction in vitamin A deficiency cases seen in hospital in recent years [4].

In our study, ocular motility was affected in 3.1%. Sethi et al reported 8.06% [2]. Tanzania showed the prevalence of squint was 0.5% and South of Kavadi of Pakistan showed prevalence of squint as 0.6% [7]. A study at Katmandu reported the prevalence of squint was 1.6% [8]. Determinants of strabismus diagnosis are important because of the amblyogenic nature of certain concurrent squint [9]. Esotropia is also more likely to be amblyogenic than exotropia [10,11]. The high occurrence

of squint in our study (3.1%) may be due to the presence of a well established strabismology set up with a qualified paediatric ophthalmologist with special interest in strabismology available.

Signs of Vitamin A deficiency were seen in 23 children (2.2%) in the form of Bitot's spot (21 children), conjunctival xerosis (1 child) and keratomalacia (1 child) that was similar to a study done by Sethi et al reported 2.09% vitamin A deficiency [2]. Lower prevalence of xerophthalmia may be due to the widespread coverage of vitamin A prophylaxis programme in Nepal and India.

CONCLUSION

The most common eye problem was conjunctival disorder. Refractive errors presented the second most common causes of paediatric ophthalmic disorder. There should be routine refraction of the children and provision of the spectacles at low cost.

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