

Ocular Morbidity among Children Attending Tertiary Healthcare Hospital in Assam (An Observational Study)

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Abstract: Aim: To determine the prevalence of childhood ocular morbidity and their demographic characteristics. Methods: This cross sectional observational study was conducted among 1023 patients below 16 years of age, attending the ophthalmology outpatient department of Assam Medical College & Hospital, between September, 2016 to February, 2017. Results: The most common ocular morbidity encountered was refractive error, conjunctival diseases and ocular injury, with the majority of patients in the age group of 11-16 years. Conclusion: Majority of ocular morbidities are preventable or treatable, hence health education with proper usage of eye care facilities is the need of the hour.

Keywords: Amblyopia; Childhood refractive errors; Ocular morbidity

1. Introduction

Childhood ocular disorder affects quality of life, specially future education, employment opportunities and overall the GDP (gross domestic product) of a country. Childhood blindness causes 70 million blind years globally. Childhood blindness is second only to cataract in terms of blind years.¹ Approximately 5 lakh children become blind every year, which is equivalent to nearly one child every minute.² Among 1.5 million blind child worldwide, 70 -90% reside in poorest countries of Africa and Asia.³ It is estimated that nearly 30% of the population of India usually lose their eyesight even before reaching the age of 20 years, with the majority below 5 years age.⁴ Majority of the childhood ocular diseases are preventable, hence epidemiological analysis of childhood ocular morbidity may be helpful in planning as well as evaluating existing preventive and curative services.

2. Methods

This cross sectional observational study was conducted among patients of ≤ 16 years of age attending the out patient department of Assam Medical College, from September, 2016 till February, 2017. All patients reporting for the first time were included in this study and visual acuity was examined using Snellen's chart in both English and Assamese. Automated refraction and subjective refraction was done in older children with refractive error (visual acuity less than 6/6). Wet refraction or retinoscopy was done in children less than 10 year of age. Anterior segment examination including lid, conjunctiva, cornea, pupil, iris, lens was done by torch and if possible slit lamp in older patients. Extraocular muscle movements were checked. Hirschberg corneal reflex test, cover test, alternate cover uncover tests were done to rule out tropia and phoria. Colour vision was assessed by Ishihara's pseudo isochromatic colour plate. Dilated fundus examination by direct ophthalmoscope and indirect ophthalmoscope was done to evaluate posterior segment pathology.

If any ocular disease was present since birth it was considered as congenital while others were termed as acquired. Amblyopia was defined any visual acuity of 6/9 or worse after eye examination including dilated fundus examination and cycloplegic refraction. Vitamin A deficiency was defined as a child who presented with the history of night blindness along with the presence of Bitot's spot/conjunctival xerosis/corneal xerosis on ocular examination.

3. Results

A total of 1023 patients were examined for our study, which included 517 (50.53%) males and 506 (49.46%) females. They were further divided into 3 age groups of 0 – 5 years, 6 –10 years & 11 -16 years. 331(32.35%) patients belonged to age group of 0-5 years, 284(27.76%) patients in the age group 6-10 years and 408(39.88%) patients in the age group of 11-16 years in our study. Refractive error was the most common ocular morbidity detected in 319(31.18%) patients. 237 of these patients were in the age group of 11-16 years. Myopia(51.70%) was the commonest refractive error observed.

Table 1: Age wise distribution of patients by ocular morbidity

Ocular morbidity	0 – 5 years	6 – 10 years	11- 16 years	Total
Diseases of lid (blepharitis, chalazion, granuloma)	22	44	31	97(9.48%)
Conjunctival diseases (conjunctivitis, vitamin A deficiency, xerosis)	165	63	75	303 (29.6%)
Corneal diseases (ulcer, xerosis, opacity)	9	5	8	22 (2.15%)

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Cataract	3	8	16	27 (2.63%)
Ocular injury	69	70	20	159 (15.54%)
Diseases of nasolacrimal passage (Dacryocystitis)	56	2	0	58 (5.66%)
Refractive errors	3	79	237	319 (31.18%)
Amblyopia	0	8	18	26 (2.54%)
*Others	4	5	3	12 (1.17%)
Total	331 (32.35%)	284 (27.76%)	408 (39.88%)	1023 (100%)

Table 2: Sex distribution of childhood ocular morbidity

Sex group	Total number	Percentage
Male	517	50.53%
Female	506	49.46%

Table 3: age & sex distribution of refractive error in study group

Age of children	Male	Female	Total
0-5 years	2	1	3
6-10 years	41	38	79
11- 16 years	108	129	237
Total	151	168	319

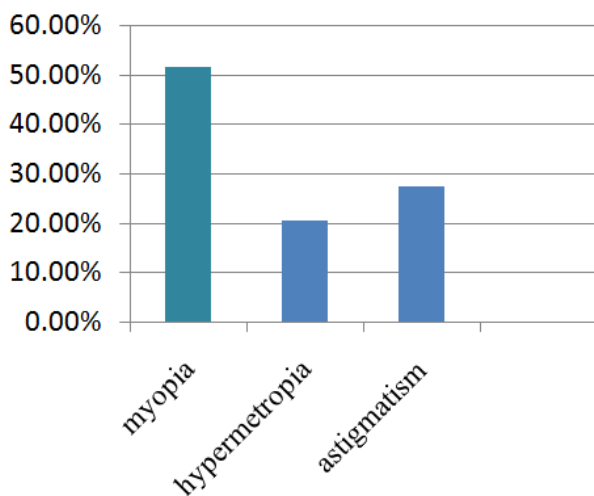


Figure 1: Type of refractive error

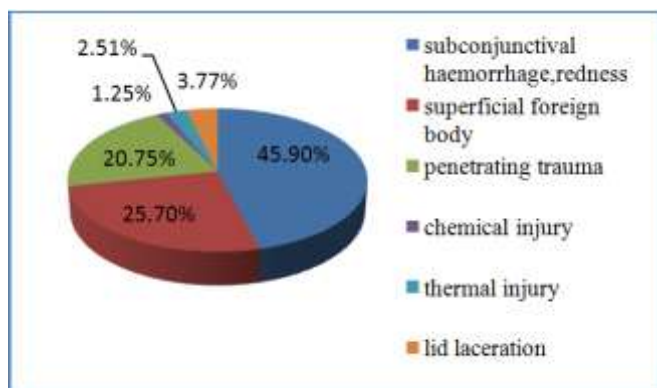


Figure 2: Type of ocular injury

4. Discussion

In our study refractive error was most common among 11-16 years of age group 237(74.29%) out of total 319 patients (Table 3). This signifies that older children could articulate their vision problem better with teacher or parents. Mehta Set al.⁶ found that refractive error(38.72%) was most common ocular morbidity in their study based on central India. Similarly Biswas Jet al.⁷ studied that refractive error was the most common morbidity (23.67%). However lower prevalence of refractive errors have been reported in other studies.^{8, 9} The most common refractive error observed was Myopia (51.70%) followed by astigmatism (27.50%) and hypermetropia (20.60%). Refractive error is one of the important reasons for poor school performance.

Diseases of the conjunctiva was the second most common morbidity encountered in 29.61% patients (Table 1). It included conjunctivitis in 280(27.37%) patients, xerosis in 23(2.24%) patients due to vitamin A deficiency. Chakraborty et al.¹⁰ had observed a higher incidence of conjunctivitis(29.57%) in his study. Higher prevalence of conjunctivitis has also been observed among school children in other studies.^{7, 11}

Ocular trauma was the third most common ocular morbidity observed in 15.54% patients (Table 1). The proportion of ocular injuries are higher in developing countries and mainly consists of preventable monocular vision impairment and blindness. Boys were found to be more susceptible than girls. In our study ocular contusion was observed in 45.90% patients. Corneal foreign body, penetrating ocular injury, lid laceration, thermal injury and chemical injury were also observed (Figure 2). Available literature has shown a 5-16% incidence of ocular trauma in children which was similar to our study results.^{6, 7, 12} Unsupervised play, fingernail trauma, fall from chair etc were the important cause of ocular injuries observed by us.

Diseases of the eyelid (chalazion, granuloma, stye) constituted 9.48%. The incidence of corneal diseases (opacity, ulcer, xerosis) was 2.15%. Dacryocystitis was observed in 5.66% patients. Cataract was found in 2.63% cases. 2.54% cases presented with amblyopia. Refractive errors, cataract and amblyopia were commonly found in the age group of 11- 16 years.

2 patients presented with congenital glaucoma and 2 patients presented with retinoblastoma. 8 patients presented with posterior segment anomalies, microphthalmos and coloboma

5. Conclusion

Ocular morbidities in children vary from one region to another. Environmental factors, nutritional factors and existing health care facilities also play an important role in the pattern and outcome of ocular morbidities. From our present study we concluded that refractive errors, conjunctival diseases resulting from conjunctivitis, vitamin A deficiency and ocular trauma are common causes of childhood ocular morbidity under 16 years age group. Most of these diseases are treatable or preventable. So organizing

school health screening programs to detect refractive errors at an early stage and providing health education to the parents, teachers will further reduce the incidence of ocular morbidity in our geographical region.

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