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Research Article

PATTERN OF PEDIATRIC OCULAR DISEASE IN A TERTIARY EYE CARE CENTRE OF BIHAR: A HOSPITAL BASED STUDY

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ABSTRACT

Purpose: Ocular diseases vary from children to children in different age group. They also vary in prevalence & incidence according to various region. In our study the main aim is to determine various childhood ocular disease in tertiary eye care centre of Bihar. It is a hospital based study.
Methodology: We conducted a Retrospective one year observational study in all patients less than 16 yrs of age group attending in regional institute of ophthalmology Patna Bihar from 1st January 2017 to 31th December 2017. Data on age at presentation, age at onset of disease, sex & diagnosis were collected & analyzed using SPSS version19.
Result: We evaluated a medical record of 1726 children. The mean age at presentation was 10 yrs with 25% in preschool age group (0-5 years), 35% in school age group (6-10 years) & 40% in (11-15 years) age group. The male to female ratio was 1.75: 1, Refractive error (24%) was the most presenting disorder followed by common seasonal eyelid & adenexal infection (17%), allergic conjunctivitis (16%), Trauma (15%), congenital causes (14%), strabismus (5%), vitamin A deficiency (4%), corneal opacity (2%) & others (3%).
Conclusion: Refractive error was the most common cause for hospital visit which causes severe visual impairment lading to absenteeism and poor school performance. This study also shows the extra need for implementing school screening in Bihar. Vitamin A deficiency & malnutrition still remain one of the important preventable cause for ocular morbidity in this region.

INTRODUCTION

Ocular diseases in children vary from those in adults and also from children to children. The prevalence and spectrum of ocular disease varies not only from country to country but also from region to region in the same country; this may be due to environmental, climatic, racial, socio-economic and literacy factors.[1, 2] Untreated ophthalmic disorders can interfere with most life experiences. Children should receive prompt and proper eye care in order to avoid visual impairment and ocular morbidity which can harmfully affect learning ability, personality and adjustment in school. Data on the pattern of presentation of childhood eye diseases is important for planning eye care for children. Children in rural communities face different environmental situations compared with children living in urban communities. The results provide a basis for planning the development of ophthalmic care for children in this region.

In our study the main aim is to determine various childhood ocular disease in regional institute of ophthalmology, Indira Gandhi Institute of Medical Sciences (RIO, IGIMS) Patna Bihar which is a one year retrospective observational: hospital based study.

MATERIAL & METHODS

All new patients aged 16 years & younger who presented at RIO, IGIMS Patna Bihar between first January 2017 up to 31th December 2017 were retrospectively reviewed. our hospital is located in capital city Patna, the hospital serves as the only major tertiary eye care centre in its catchment area comprising all districts of Bihar and adjoining states covering both urban as well as rural population. The catchment area comprises a male female ratio of 918 females per 1000 males, small farm agriculture is the main occupation and has a literacy rate of 69.83% of total population. The hospital provides primary, secondary and tertiary eye care services. The source of referral for the hospital from these areas by the rural and urban community leaders, eye health worker, ophthalmic assistant, governmental and nongovernmental hospital from different district or local eye health camp organized by our hospital.

All patients included in this study were seen in hospital by a pediatric ophthalmologist, specialised clinic as well as trained senior ophthalmic assistant. Data on age at presentation, sex, clinical diagnosis & age at onset of symptoms were determined from medical record. Pediatric age group patients were classified as preschool (0-5yrs), school (6-10yrs) & older

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children (11-15 yrs). Data were stored & analysed using SPSS 19: Statistical Package of the social sciences: IBM: Version 19

RESULTS

We evaluated a medical record of 1726 children who were seen in eye out patient department (OPD) during the one year study period. The mean age at presentation was 10 yrs with 25% (432) in preschool age group (0-5 years), 35% (604) in school age group (6-10 years) & 40% (690) in (11-15 years) age group (Table-1). The male to female ratio was 1.75:1, Refractive error (24%) was the most presenting disorder followed by common seasonal eyelid & adenexal infection (17%), allergic conjunctivitis (16%), Trauma (15%), congenital causes (14%), strabismus (5%), vitamin A deficiency (4%), corneal opacity (2%) & others (3%).

Refractive error (24%) was the most common disorder (Table-2). Out of 414 cases of refractive error 236 were present in boys & 178 were present in girls. The gender difference was found to be significant. (p=0.033) Infection was seen in 293 cases (17%), the main cause of which were conjunctivitis (40%), keratitis (30%), lid & adexa infection in (21%) & dacryocystitis in (8%).

Trauma was seen in 259 cases (15%), out of these, 160 cases (62%) were boys 99 cases were girls (38%).There was no significant difference in occurrence of trauma in different age groups. Table 3 shows the pattern of ocular trauma seen as 83% being closed globe injuries. 4% of cases of vitamin A deficiency. Out of 70 cases of vitamin A deficiency, Conjunctival xerosis was found to be the most common presenting feature comprising 37% which is equal to 26 cases.

Another important reason for hospital visit was allergic conjunctivitis. Allergic conjunctivitis which is 16% that is 276 cases. Out of 276 patients with allergic conjunctivitis, 69 (25%) patients had severe allergic conjunctivitis with giant papillary reaction. Horner's-Tranata spots on the limbus & history of frequent attack. Allergic conjunctivitis was more commonly seen in males (75%) as compared to females.

There were 242 congenital conditions accounting for 14% of all the case. Most common congenital condition was congenital naso-lacrimal duct obstruction (43%) that is 104 cases, congenital cataract (36%) which include zonular-lamellar cataract, sutural cataract, blue dot cataract, polar cataract which is total 87 cases, coloboma (6%) that is 15 cases,12 cases retinoblastoma (5%), congenital nystagmus (4%) that is 10 cases, microphthalmos (3%) that is 7 cases & others (3%) which include ocular palsy, Duanes, Brown syndrome, double elevator palsy & inferior oblique overaction etc.

Table 1 Age distribution

Age of children	Number	Percentage
0-5 years	432	25%
6-12 years	604	35%
13-16 years	690	40%
Total	1726	

Table 2 Age wise distribution of refractive error (24%)

Age in yrs	Refractive Error Absent	Refractive Error Present	Total No. of patient
0-5	470	53	523
6-10	400	129	529
11- 15	442	232	674
Total	1312	414	1726

Out of 414 = 236 boys & 178 girls

Table 2 Pattern of ocular trauma (15%) (BETT Classification)

Type of injury		Frequency
		Total = 259
Closed Globe	Contusion & Lamellar lacerations	215 (83%)
Open Globe	Penetrating	44 (17%)

Out of 259 cases = 62% boys (160 cases) & 38% girls (99 cases)

DISCUSSION

Refractive error was the most common cause for hospital visit which causes severe visual impairment. Adio *et al* who found a prevalence of refractive error of 29% in a hospital based study in Nigeria [2,3] .

Gupta *et al* [2] from North India showed allergic conjunctivitis as the most common ocular problem faced in childhood. Absence of regular school screening refractive error is not detected. Uncorrected refractive error can be the cause of poor performance in school & important cause for amblyopia. "VISION 2020" Right to Sight [4] aims to eliminate avoidbable blindness has given high priority to correction of refractive error & has placed it within category of childhood blindness . Infection was second most common cause for hospital visit. Conjunctivitis followed by keratitis, blepharitis & dacryocystitis was most common cause of infection. Resnokoff S *et al* [5] & Bloomfield *et al* [6] in his study shows simple hand washing can reduce the risk of infection.

Allergic conjunctivitis was third most reason for hospital visit. Most cases of VKC, Epidemic- keratoconjunctivitis, membranous, atopic & mucopurent conjunctivitis was seen in this study. These cases are mostly due to dry-dusty-humid environment in the summer in terai region in east Nepal. Boys are affected most common in this study because due to greater level of outdoor activities. Similar study did by Smedt SD[7], Nkurikiye J *et al*[7] showed prevalence of Vernal keratoconjunctivitis in school children in Rwanda & its association with socio-economic status: a population-based survey.

Ocular trauma causes severe visual impairment. Most ocular injuries are preventable. Closed globe injury was found to be more common than open globe injury in this study. Saxena R *et al* [8] did similar study in 2002 showed pattern of pediatric ocular trauma in India in which open globe injury was more common than closed globe injury & boys are mostly affected than girls due to outdoor activities. Lee CH *et al* [9] in 2008 did similar study in Pediatric ocular trauma in Taiwan. Soliman MM *et al* [10] showed pattern of ocular trauma in Egypt.

Congenital cases account for 14% of hospital visit. Most common cause was congenital nasolacrimal duct obstruction. Most cases of congenital nasolacrimal duct block came before six month of age. So conservative management like sac massage with antibiotic eye drop shows higher success rate when done early. Similar study that is conservative management of CNLD obstruction done by Nucci P *et al* [11] in 1989.

Vitamin A deficiency cases account for 4% of hospital visit. Most common symptoms of Vitamin A deficiency is a frequent cause of childhood blindness seen in developing countries. Sachedeva *et al* found that the overall prevalence of xerophthalmia is of serious public health importance in Aligarh, India [12]. The most common manifestations of Vitamin A deficiency were night blindness, conjunctival

xerosis and Bitot's spots. Simple measures to prevent vitamin A deficiency include Vitamin A capsule (VAC) supplementation to children of 6 months to 6 years old, nutrition education to increase the production and consumption of vitamin A rich foods, and training of primary health-care workers on the clinical diagnosis and treatment of vitamin A deficiency, VAC distribution and nutrition education[13].

CONCLUSION

In conclusion, the most common causes of childhood ocular morbidity in this study were refractive error followed by infection, allergic conjunctivitis and injuries. These disorders require specialist eye care services for proper management given that they lead to absenteeism from school and are potentially blinding. Regular school screening programs should be started to combat the problem of refractive error and associated amblyopia. Appropriate health education needs to be given for the prevention of eye infection and injuries as well as early presentation of children to eye care centres for the treatment of eye disorders.

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