Original Article

Pattern of Common Paediatric Diseases at Spencer Eye Hospital

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Purpose: To determine the pattern of common paediatric ocular diseases presenting at outpatient department of Spencer Eye Hospital.

Material and Methods: It was a hospital based descriptive cross sectional type of study carried out at OPD of Spencer Eye Hospital from March 2012 – May 2012 and included 370 patients. A detailed history was taken regarding the ocular disease and examination was carried out in detail on slit lamp, direct and indirect fundoscopy was done where required. Refraction was done and examination under anesthesia was done if required. Diagnosis was established and recorded. Patients were managed accordingly. Data analysis was done on SPSS programme version 14.

Results: We studied 370 patients from March 2012 – May 2012. There were 220 (59.50%) male patients and 150 (40.5%) female patients. Most frequent presenting age group was 6 – 10 years (41.62%). Mean age of the patients was 8.24 ± 3.7 years. Bacterial conjunctivitis was most frequently found ocular disease (26.77%) followed by Trachoma (20%) while vernal catarrh was present in 9.73% patients. Refractive errors were present in 8.11% patients and ocular trauma in 6.76% patients. Congenital cataract presented in 5.68% of patients. Squint was found in 3.51% of patients. Presentation of corneal ulcer was in 2.70% patients. Congenital diseases were not much prevalent.

Conclusion: Paediatric ocular disorders are of utmost importance. Their early diagnosis is greatly helpful in reduction of preventable childhood blindness. Electronic media should educate about the importance of paediatric ocular disorders.

Pediatric ocular diseases are of prime importance. Most of these diseases are treatable up to a specific age and if left untreated may have a disastrous effect on functional abilities of child. More specialized curative services are required by the child population [1].It was reported that there are 135 million people with true low vision in the world and among them 7 million are children (quantitatively a person is said to have true low vision when he or she has visual acuity of 6/18 to light perception or visual field of less than 10 degrees from point of fixation but uses or is potentially able to use vision for planning and execution of a task)[2]. Approximately 1.3 million children in the world are blind, half of these cases are preventable and treatable[3].

About 60 – 80% children die within 2 years of onset of blindness either due to underlying cause of blindness (general ailment or hereditary or systemic disease) or due to lack of support for survival[4].Various studies have reported that pediatric ocular diseases and cause of visual loss in children varies from place to place and greatly depends on socioeconomic conditions of the area.[5]

In countries with low socioeconomic strata and inadequate healthcare systems, malnutrition and infections form major part of the etiology; while in industrialized countries common pediatric diseases are cataract, glaucoma, retinopathy of prematurity, genetically transmitted diseases and congenital abnormalities[5].

In addition childhood blindness has direct effect not only on the functional abilities of child and education but also indirectly effects family and community. This has drawn the attention of World health organization's Vision 2020 program which included "childhood blindness" as one of its major targets.

MATERIAL AND METHODS

It was a hospital based descriptive cross sectional study. The study was carried out at OPD of Spencer Eye Hospital Karachi from March 2012 – May 2012. It included 370 patients of age from 1 day to 14 years through non-probability consecutive sampling technique. Sample size was calculated by using Open Epi sample size calculators for demographic studies.

Population size taken was 10,000, while keeping confidence interval 95%, margin of error 5% and prevalence of conjunctivitis (P) 42%; the calculated sample size was 370.

Informed consent was taken and anonymity and confidentiality of the patient was maintained throughout the study.

A detailed history was taken regarding the ocular disease and examination was carried out in detail on slit lamp, direct and indirect fundoscopy was done where required. Refraction was done and examination under anesthesia was done if required. Diagnosis was established and recorded. Patients were managed accordingly. Data analysis was done on SPSS programme version 14. Descriptive statistics were used to calculate mean and standard deviation for age. Frequencies were calculated for ocular diseases along with the percentages.

RESULTS

We studied 370 patients from March 2012 – May 2012. There were 220 (59.50%) male patients and 150 (40.50%) female patients.

Bacterial conjunctivitis was most frequently found ocular disease (26.77%) followed by trachoma (20%) while vernal catarrh was present in 9.73% patients. Refractive errors were present in 8.11% patients and ocular trauma in 6.76% patients. Congenital cataract presented in 5.67% patients. Squint was found in 3.51% patients. Presentation of corneal ulcer was in 2.7% patients. Congenital diseases were not much prevalent for e.g. coloboma iris (1.08%) congenital glaucoma (0.81%), congenital ptosis (0.8%), dermoid cyst (0.54%), cogenital entropion (0.27%) and collodion baby (0.27%). It was observed that conjunctivitis (m = 80, f = 93), stye (m = 6, f = 9) and chalazion (m = 3, f = 5) are more prevalent among female children and vernal catarrh (m = 28, f = 8), refractive errors (m = 28, f = 2) and ocular trauma (m = 19, f = 6) are more prevalent among male children.

Descriptive Statistics for Age

Age in Years	
N	370
Minimum	.01
Maximum	14
Mean	8.24
Standard Deviation	3.71

Age Distribution

Age Group	No. of Patients n (%)
1 Day - 1 Month	8 (2.16)
1 Month Above - 1 Year	29 (7.84)
1 Year Above - 5 Years	61 (16.49)
5 Years Above - 10 Years	154 (41.62)
10 Years Above - 14 Years	118 (31.89)

DISCUSSION

A male preponderance was seen 59.50% while female patients were 40.50%, this finding was very similar to a study conducted at eye department Khyber Teaching Hospital where male patients were 68.9% and female patients were 31.1%.[6] This could be due to the fact that preference is given to male children in poor society.

Most frequently reported disease in our study was infectious conjunctivitis 26.77% and trachoma 20%. A study conducted by Qureshi H M and et al reported[7] prevalence of trachoma among children less than 10 years of age up to 48.98%. This is higher than our study perhaps due to the fact that this study was conducted in rural areas of upper Sindh where poverty and poor sanitation are responsible for high prevalence of this disease. Stye and Chalazion were seen in 4.05% and 2.16% children respectively. Spencer Eye hospital is located in an old town of Lyari where

Frequencies N (%) of Common Pediatric Diseases

Pediatric Ocular Disease	Frequency n (%)		
	Male	Female	Total N (%)
Bacterial Conjunctivitis	51	48	99 (26.77)
Trachoma	29	45	74 (20)
Vernal Catarrh	28	8	36 (9.73)
Refractive Errors	28	2	30 (8.11)
Ocular Trauma	19	6	25 (6.76)
Congenital Cataract	16	5	21 (5.68)
Stye	6	9	15 (4.05)
Nasolacrimal Duct Obstruction	9	6	15 (4.05)
Squint	7	6	13 (3.51)
Vitamin A Deficiency	7	4	11 (2.97)
Corneal Diseases	6	4	10 (2.70)
Chalazion	3	5	8 (2.16)
Coloboma Iris	4	0	
Congenital Glaucoma	3	0	3 (0.81)
Congenital Ptosis	1	1	2 (0.54)
Dermoid Cyst	2	0	2 (0.54)
Congenital Entropion	1	0	1 (0.27)
Collodion Baby	0	1	1 (0.27)

the hygienic conditions are not satisfactory and socioeconomic conditions are also poor but not as worse as rural areas of Sindh. These factors may play a significant role in high prevalence of infectious eye diseases in this area.

Poor sanitation, ignorance and poor hand washing practices due to deficiency of water are additive factors. Prevalence of vernal catarrh was 9.72% and a male preponderance was seen. Sethi S et al reported 35.6% prevalence of vernal catarrh with a male preponderance[6]. Their results were noticeably different from ours perhaps due to geographical and dry climatic conditions of that region.

Refractive errors were found in 8.11% patients. Uncorrected refractive errors have a direct effect on learning capabilities of the children and their education[9]. According to another study it was reported that refractive errors are third largest cause of curable blindness in Pakistan[10].

In a study conducted by Sethi S[6], prevalence of refractive errors was 12.8% which is quite closer to the finding of our study. In another study conducted in NWFP it was found that refractive errors were responsible for 8% uniocular blindness and amblyopia[11].

Children who presented with ocular trauma were 6.76%. Most of these cases presented with corneal cuts and prolapse of uveal tissue. Lack of transportation was one of the major causes of delayed presentation of these cases and poor prognosis.

Sethi and et al reported in their study that trauma accounted for half of peadiatric corneal disorders in their study[6]. Another study reported that ocular

trauma forms 8 – 14% of total injuries suffered by children[12].

Children are more prone to ocular injuries due to their inability to avoid hazards[13]. Afghani T reported in his study on Causes of Childhood Blindness that 6% of childhood blindness was due to postnatal causes and major underlying pathology in his study was ocular trauma[14].

Presentation of congenital cataract was 5.68%.More than 50% of these cases were due to congenital rubella and about 30% were familial with a positive family history. No cause could be established in few cases. Sethi S et al reported in their study that lens disorders are responsible for 8.9% of the paediatric ocular disorders quite similar to our study and among them bilateral congenital cataract is the most common cause[6]. Another study by Sethi and Khan reported 4.91% prevalence of bilateral congenital cataract[15]. Rahi and Sripathi have reported that 20-30% of childhood blindness is due to cataract. Majority cases of bilateral congenital cataract in developing countries are due to congenital Rubella[16].

Patients with nasolacrimal duct obstruction were 4.05%. Sethi et al reported 5.07% of these cases in their study which is quite similar to our study. 80 – 90% of these patients responded well to syringing and probing.

Presentation of children with squint was 3.51%. Majority of them had esotropia. A study conducted in Nepal reported 1.6% prevalence of squint[16] and a Tanzanian study reports 0.5% prevalence of squint[17]. Presence of a well developed squint clinic may be helpful in early diagnosis and management of strabismus as esotropia may have an amblyopic potential.

Vitamin A deficiency has a major contribution towards preventable corneal blindness and there is a great variation in its prevalence in same region as well as region to region. In our study ocular involvement due to vitamin A deficiency was 2.97%.These children were severely malnourished. Afghani T reported this prevalence up to 12%[15]. Another study conducted at Lasbela Baloshistan reported the same 3.29%[20] while the prevalence reported from India was 26%[16].

Presentation of children with corneal disorders was 2.70%. Greater presentation was of bacterial corneal ulcers. Many of them presented as post measles corneal ulcers. Sethi and et al Reported 4.9% the prevalence of corneal diseases[16]. They reported the same prevalence in another study conducted at Khyber teaching hospital Peshawar[6]. These findings are almost 50% greater than that of our study. In another survey by Afghani T corneal diseases formed 12% of all the pediatric diseases[14]. Most of these causes are responsible for preventable blindness.

Our study reported 0.81% cases of congenital glaucoma which is quite similar to the study conducted at Khyber Teaching Hospital where it was reported 0.99%[6]. While another study conducted, these cases present so late that many children have become blind. Poverty, Ignorance, Illiteracy and lack of transport facilities are responsible for such cases of preventable blindness.

Prevalence of congenital ptosis was 0.54%. The study showed 0.12% prevalence of congenital ptosis. Severe cases of ptosis require early treatment as chances of development of amblyopia are greater in severely drooped eyelid.

Congenital diseases were not much prevalent for e.g. congenital glaucoma (0.81%), congenital ptosis (0.54%), dermoid cyst (0.54%), cogenital entropion (0.27%) and collodion baby (0.27%). It was observed that conjunctivitis, stye and chalazion are more prevalent among female children and vernal catarrh, refractive errors and ocular trauma are more prevalent among male children.

A very interesting entity was of collodion baby 0.27% who presented to us on 2nd day of his life.

The term collodion baby is used for newborns in which all the body surface is covered by thick skin sheets, so called "collodion membrane".

In almost all of the collodion membrane cases an autosomal recessive ichthyosi form disease is implicated[20]. The eyelids and the lips may be everted and tethered (ectropion and eclabion). In such cases loss of proper management can result with keratitis due to xerophthalmia and eventually blindness[21-24)].

CONCLUSION

Paediatric ocular disorders are of utmost importance. Their early diagnosis and prompt treatment is greatly helpful in reduction of preventable causes of childhood blindness. Ignorance, illiteracy, poverty and lack of transport facilities are mainly responsible for these situations. Such outcomes directly affect the functional abilities of the child and his education and indirectly his family and community.

It should be the responsibility of electronic media to educate people about the importance of various pediatric diseases.

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REFERENCES

1. **Qayyum Z, Khan AM.** Causes of low vision among children and adult patients presenting at low vision clinic of Mayo hospital, Lahore Ophthalmology Pakistan. 2008; 1: 34-370
2. **Chaudhry M.** Low Vision Aids Ist edition India Japee Brothers; World Health Organization. Prevention of childhood blindness. Geneva WHO. 1992; 2006: 63.
3. **Gilbert CE, Foster A, Negral AD, Thylefors B.** Childhood Blindness A new form of recording visual loss in children Bull World Health Organ ization. 1993; 71: 485-9.
4. **Rahi J S, Sripathi S, Gilbert C E, Foster A.** Childhood Blindness due to vitamin A deficiency in India: regional variations Arch. Dis Child. 1995; 72: 330-3.
5. **Gilbert CE, Canvas R, Foster A.** Causes of blindness and sever visual impairment in children in Chile. Dev Med Cild Neurol. 1994; 36: 326-33.
6. **Sethi S, Sethi JM, Saeed N, Kundi KN.** Pattern of common eye diseases in children attending outpatient eye department Khyber Teaching Hospital. Pak J Ophthalmol. 2008; 24: 166-70.
7. **Qureshi MH, Siddiqui JS, Pechuho AM, Shaikh D, Shaikh AQ.** Prevalence of trachoma in upper Sindh. Pak J Ophthalmol. 2010; 26: 118-21.
8. **Garcia – ferrer FJ, Ivan R, Vaughn DG.** General Ophthalmology, Mc Graw Hill Lange Company 2008; 17: 103-14.
9. **Negral AD, Maul EP.** Pokheral, Zhap Refractive error study in children: Sampling and measurement methods for a multicountry survey. Am J Ophthalmol. 2000; 129: 421-6.
10. **Durrani J.,** Blindness Statistics for Pakistan Pak J Ophthalmol. 1994; 10: 39-42.
11. **Khan MA, Gullab A, Khan MD.** Prevalence of blindness and low vision in North West Frontier Province of Pakistan. Pak J Ophthalmol. 1999; 15: 1-2.
12. **Scribano PV, Midelfart, Nance M, Reilly P.** Peadiatric non powderFire arm injuries. Outcomes in urban peaditrric setting. Peadiatrics 1997; 100: 5.
13. **Negral AD, Thlefors B.** The global impact of eye injuries. Ophthalmic Epidemiology. 1998; 5: 143-69.
14. **Afghani T.** Causes of Childhood Blindness and severe Visual impairment. Pak J Ophthalmol. 2000; 16: 4-26.
15. **Sethi S, Khan MD.** Survey of Blind Schools in North West Frontier province. Pak J Ophthalmol. 2001; 17: 90-6.
16. **Rahi JS, Sripathi S, Gilbert CE.** The importance of perinatal factors in childhood blindness in India. Developmental Medicine and Child Neurology. 1997; 39: 449-55.
17. **Nepal BP, Koirala S, Adhi KS.** Ocular morbidity in school children in Khatmandu. BR J Ophthalmol. 2003; 87: 531-4.
18. **Wener Susamme HW, David AR.** Rebecca B et al. Prevalence of eye diseases in primary school children in rural areas of Tanzania BR J Ophthalmol. 2000; 84: 1291-97.
19. **Khalil A, Lakho M, Jadoon Z.** Pattern of Ocular Problem in school going children of district Lasbela, Balochistan. Pak J Ophthalmol. 2012; 28: 200-5.
20. **Tüzün Y, İşçimen A, Pehlivan O.** Collodion Baby J Turk Acad Dermatol. 2008; 2: 82201.
21. **Judge MR.** Collodion baby and Harlequin ichthyosis. Harper J, Oranje A, Prose N. Textbook 0f Pediatric Dermatology. Second edition. Malden, Blackwell Publishing. 2006; 118-25.
22. **Shwayder T, Akland T.** Neonatal skin barrier: structure, function and disorders. Dermatol Therapy. 2005; 18: 87-103.
23. **Judge MR, McLean WHI, Munro CS.** Disorders of keratinization. Burns T, Breathnach S, Cox N, Griffiths C. Rook's Text book of Dermatology. 7th ed. Malden, Blackwell Publishing. 2004; 34: 1-34.
24. **Fleckman P, Digovanna JJ.** The Ichthyoses. Klaus W, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ. Fitzpatrick's Dermatology In General Medicine. 7th edition. New York, McGraw – Hill Medical. 2008; 401-24.