ORIGINAL ARTICLE CODEN:AAJMBG

A study on ocular morbidities in children aged between 7 -18 years attending ophthalmology OPD

Ayesha Batool, Anand G. Gannur, Madhu A. Gannur*, Z.A. Golewale and Zoha Arnib

Department of Ophthalmology, Al Ameen Medical College and Hospital, Athani Road, Vijayapur-586108 Karnataka, India

Received: 16th July 2022; ***Accepted:*** 15th December 2022; ***Published:*** 01st April 2023

Abstract: *Background:* Ocular morbidities in children involve a spectrum of diseases that critically impact the development, education and quality of life hence require prompt attention. This study was conducted with an objective to assess the prevalence of ocular morbidity. *Method:* A hospital based cross- sectional study was carried out from November 2020 to April 2021 among children in age group between 7 to 18 years. Data was collected using a semi-structured questionnaire. Detailed eye examination was done under Slit lamp and visual acuity assessment was done using Snellen's chart. Children with vision less than 6/6p were subjected to refraction. Posterior segment evaluation was done under slit lamp with 90D and IDO. *Results:* A total of 120 children (7 to 18 years) were examined in this study. Majority of cases were between 14 to 18 years. 58.3% male and 41.6% female. Common presenting complaints were blurring of vision (28.3%) and headache (11.6%).The common ocular morbidity reported were refractive error (35.83%) followed by the allergic conjunctivitis (19.16%) and infections of the eye and adnexa (15.83%). Prevalence of refractive error was more in children aged between 14 to 18 years. Myopia was the most common refractive error. *Conclusion:* Most of the ocular morbidities are preventable or treatable. Ocular disorder can be easily identified with a regular eye screening. Moreover, health education for the prevention of ocular morbidity and early presentation to ophthalmology OPD for treatment is essential.

Keywords: Ocular Morbidity, Refractive Error, Myopia.

Introduction

Ocular morbidities in children involve a spectrum of diseases that critically impact the development, education and quality of life. Children are the most precious resource of families. Children represent the family future and their hopes. Blind child is a tragedy for their families. A child whose blindness could have been prevented or cured is an even greater disaster.40% of childhood blindness is avoidable [1].

Childhood blindness is the second largest cause of blind-person years, following cataract. Globally, approximately 70 million blind person years are caused by childhood blindness. A child eye is not merely a smaller version of an adult eye, the cause of childhood blindness are equally different from adult blindness [2]. India has an estimated 320,000 blind children, more than any other country in the world [3]. In children of age range 5-15 years, the visual impairment is 6.4%, with refractive errors as the major cause [4].

Aim and Objective: Ocular morbidities in children involve a spectrum of diseases that critically impact the development, education and quality of life hence require prompt attention. This study was conducted with an objective to assess the prevalence of ocular morbidity.

Material and Methods

A hospital based cross-sectional study was carried out from November 2020 to April 2021 among children in age group between 7 to 18 years attending ophthalmology OPD in Al Ameen Medical College and Hospital Bijapur. All children in age group between 7-18years attending ophthalmology OPD were included in the study.

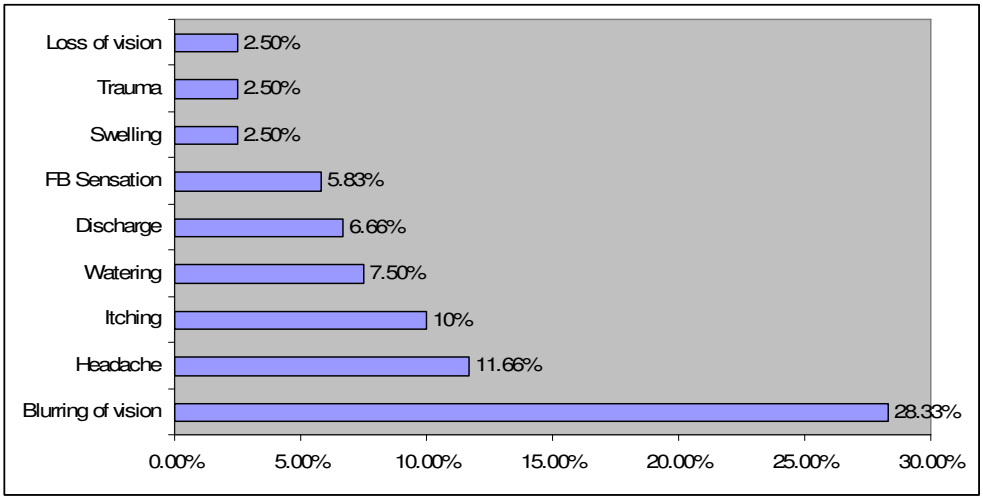
Verbal consent was taken from Guardian of study participants. Data was collected using a semi-structured questionnaires and questions were asked in their local vernacular language

that was understood by children and their parents and the answers were recorded in English. Detailed anterior segment examination was done under Slit lamp and visual acuity assessment was done using snellen's chart. Children with vision less than 6/6p were subjected to cycloplegic refraction with cyclopentolate 1%, 1 drop of 1%cyclopentolate was put 3 times at an interval of 10 minutes and retinoscopy and auto refraction was performed at 45 minutes. Posterior segment evaluation was done under slit lamp with 90D and Indirect ophthalmoscopy. Post mydriatic test was done after 3 days.

Results

A hospital based cross-sectional study was done in children aged between 7 to 18 years. In our study 58.3% were males and 41.6% females. Common presenting complaints were blurring of vision (28.3%) and headache (11.6%), other reported symptoms were itching (10%), watering (7.5%), discharge (6.6%), Foreign body sensation(5.84%), Pain (5.83%), asthenopia (5%), redness (4.16%), swelling (2.5%), trauma (2.5%), loss of vision (2.5%) (Figure 1).

Fig-1: Presenting Complaints



The common ocular morbidity reported were refractive error (35.83%) followed by the allergic conjunctivitis (19.16%), infections of the eye and adnexa (15.83%), trauma / ocular foreign body (10%), chalazion (2.5%), squint (2.5%), amblyopia (2.50%), eyecheck-up (7.50%), and other rare disorders like retinal detachment, Retinitis pigmentosa, congenital cataract was found to be (4.16%) (Table-1).

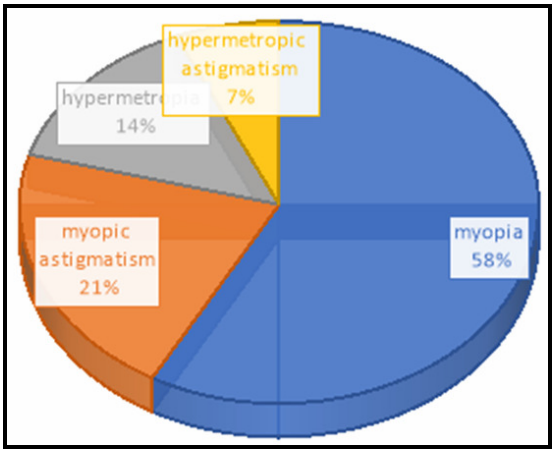
Refractive error was the most common ocular morbidity and among refractive error myopia (58%)and myopic astigmatism (21%)was most common error seen in children followed by hypermetropia (14%) andhypermetropic astigmatism(7%) (Figure2). And amount of error increases with age, maximum no of children were in age group between 14-18 years.

Table-1: Frequencies of the Ocular morbidity

Ocular morbidity	Number of cases	%age
Refractive error	43	35.83
Allergic conjunctivitis	23	19.16%
Infections of eye and adnexa*	19	15.83%
Trauma/ ocular foreign body	12	10%
Chalazion	3	2.50%
Strabismus	3	2.50%
Amblyopia	3	2.50%
Eye check up	9	7.50%
Others**	5	4.16%
Total	120	100.00%

*- Infections Of eye and adnexa include conjunctivitis, hordeolum Internum, hordeolumexternum, blepharitis, keratitis.**Others- Retinal detachment, retinitis pigmentosa, congenital cataract.

Fig-2: Refractive Error



Discussion

In Our study, males were 58.3%and females were 41.6%.Similar number in gender were also noted in ocular morbidity study conducted by Sahoo JR et al[5]where 57% were males and 43% females and a study done by Sethi S et al[6] at Khyber Teaching hospital, Peshawar where 60.6% were males and 39.4% were females. Study by Tuladhar S et al[7]showed 57.8% male and 42.2% females. In our study, the prevalence of refractive errors was 35.83%. This result was comparable with Sahoo JR et al[5]who found that refractive error is most common disorder with 34% prevalence. Das et al[8]and Desai et al[9]in jodhpur also reported a similar prevalence of 25.11% and 20.8% respectively.

Allergic conjunctivitis was found to be 19.16%. similar results were seen in study conducted by Onakpoya OH et al[10] with prevalence of 17.8%. Whereas low prevalence is seen in study conducted by Singh et al[11]with prevalence of 1.92% and in study by Luetal [12] in China 0.65%,NtimAmponsah and Ofosu Amaah[13] reported low prevalence of 2 out of 997 children screened. Difference in prevalence of allergic conjunctivitis could be due to different region of study.

Infection of eye and adnexa was found in 15.83% of children. Similar results were found in study by Biswas J et al. [14] with prevalence of 15.13%. This could be due to lack of personal hygiene. Prevalence of trauma and ocular foreign body was 10%. Sahoo JR et al. [5] found that ocular trauma and foreign body was responsible for 9.9% of morbidity and 13.74% in study conducted by Biswas J et al.[14]. Chalazion prevalence was found to be 2.5%. Study by Sahoo JR et al [5]showed 4.5% prevalence and Lower prevalence was found in study by Singh et al [11] 0.27%, 0.25% prevalence reported by Desai et al[9] in their Jodhpur based study.

Strabismus was found to be 2.5%. Similar prevalence was seen by Lu et al[12] (2.49%), Yekta et al[15] (2.02%),Baltimore vision screening project.[16] (3.1%), Shrestha et al.[17] (3.5%), Gupta et al [18] (2.5%), Pratap and Lal. [19] (2.87%).Higher prevalence was Chaturvedi and Aggarwal [20] (7.7%). Whereas lower prevalence was seen in studies conducted by Desai et al[9] (0.21%), Kariapatti eye survey [21] (0.43%), Kalikivayi et al.[22] (0.7%), Ntim Amponsah and Ofosu Amaah[13] (0.2%), Wedneret al.[23] (0.5%), and Nepal et al.[24] (1.63%), Singh et al[11](0.27%). Prevalence of Amblyopia in our study was 2.5%. Similarly Prevalence in Study conducted by Preslan[16] Was (3.9%), Sapkota et al.[25] (1.8%), Kalikivayi et al.[22] (1.1%), Lu et al.[12] (1.02%), Singh et al.[11] (0.41%), Wedneret al.[23] (0.2%), Ntim Amponsah and Ofosu Amaah [13] (0.2%).

Conclusion

The children of today are the adults of tomorrow and future of our society. Children are the most important resource for future economic growth of the country. In our study most common cause of ocular morbidity was refractive error, since most of the ocular morbidities are preventable or treatable, Screening programmes should be conducted in schools for early diagnosis and management to prevent further progression and to prevent visual disability. Moreover, health education for the prevention of ocular morbidity and early presentation to ophthalmology OPD for treatment is essential.

Limitations:

- Small sample size.
- Shorter duration of study.
- *Future directions:* Screening programs should be conducted for early diagnosis and treatment.

Financial Support and sponsorship: Nil **Conflicts of interest:** There are no conflicts of interest.

References

1. McGavin DM. The global initiative for the elimination of avoidable blindness–Vision 2020: The Right to Sight. *Community Eye Health.* 1999; 12(30):32.
2. World Health Organization. Preventing Blindness in Children. Report of a WHO/IAPB Scientific Meeting, Hyderabad, India, 1999. WHO/PBL/00.77. *Geneva: World Health Organization*; 2000.
3. Gilbert C, Rahi J, Quinn G. Visual impairment and blindness in children. In: Johnson G, Minassian D, Weale W, West S, eds. Epidemiology of eye disease. 2nd ed. London. *Arnold,* 2003.
4. Kishore J. National Health Programmes of India. 9th ed. New Delhi. *Century Publications.* 2011; pp 420-421.
5. Sahoo JR, Jena D, Karmee N, Tripathy RM, Sahu PP. Prevalence of ocular morbidities among paediatric patients attending Ophthalmology OPD in MKCG Medical College Hospital, Berhampur, Odisha, India. *Int J Adv Med.* 2018; 5(2):409-413.
6. Sethi S, Sethi MJ, Saeed N, Kundi NK. Pattern of common eye diseases in children attending outpatient eye department Khyber Teaching Hospital. *Pakistan Journal of Ophthalmology.* 2008; 24(4):166-171.
7. Tuladhar S, Gurung J, Poudel B, Subedi N. Pattern of ocular morbidity in pediatrics age group in a tertiary centre in western Nepal. *Journal of Gandaki Medical College-Nepal.* 2019; 12(2):86-89.
8. Das A, Dutta H, Bhaduri G, De Sarkar A, Sarkar K, Bannerjee M. A study on refractive errors among school children in Kolkata. *Journal of the Indian Medical Association.* 2007; 105(4):169-172.
9. Desai S, Desai R, Desai NC, Lohiya S, Bhargava G, Kumar K. School eye health appraisal. *Indian journal of ophthalmology.* 1989; 37(4):173.
10. Onakpoya OH, Adeoye AO. Childhood eye diseases in southwestern Nigeria: a tertiary hospital study. *Clinics.* 2009; 64(10):947-952.
11. Singh V, Malik KP, Malik VK, Jain K. Prevalence of ocular morbidity in school going children in West Uttar Pradesh. *Indian journal of ophthalmology.* 2017; 65(6):500.
12. Lu P, Chen X, Zhang W, Chen S, Shu L. Prevalence of ocular disease in Tibetan primary school children. *Canadian Journal of Ophthalmology.*2008;43(1):95-99
13. Ntim-Amponsah CT, Ofosu-Amaah S. Prevalence of refractive error and other eye diseases in schoolchildren in the Greater Accra region of Ghana. *J of Pediatric Ophthalmology & Strabismus.* 2007; 44(5).294-297.
14. Biswas J, Saha I, Das D, Bandyopadhyay S, Ray B, Biswas G. Ocular morbidity among children at a tertiary eye care hospital in Kolkata, West Bengal. *Indian journal of public health.* 2012; 56(4):293.
15. Yekta A, Fotouhi A, Hashemi H, Dehghani C, Ostadimoghaddam H, Heravian J, Derakhshan A, Yekta R, Rezvan F, Behnia M, Khabazkhoob M. The prevalence of anisometropia, amblyopia and strabismus in schoolchildren of Shiraz, Iran. *Strabismus.* 2010; 18(3):104-110.
16. Preslan MW, Novak A. Baltimore vision screening project. *Ophthalmology.* 1996; 103(1):105-109.
17. Shrestha RK, Joshi MR, Ghising R, Pradhan P, Shakya S, Rizyal A. Ocular morbidity among children studying in private schools of Kathmandu valley: A prospective cross sectional study. *Nepal Med Coll J.* 2006; 8(1):43-46.
18. Gupta M, Gupta BP, Chauhan A, Bhardwaj A. Ocular morbidity prevalence among school children in Shimla, Himachal, North India. *Indian journal of ophthalmology.* 2009; 57(2):133.
19. Pratap VB, Lal HB. Pattern of paediatric ocular problems in north India. *Indian Journal of Ophthalmology.* 1989; 37(4):171-172.
20. Chaturvedi S, Aggarwal OP. Pattern and distribution of ocular morbidity in primary school children of rural Delhi. *Asia Pacific Journal of Public Health.* 1999; 11(1):30-33.
21. Nirmalan PK, Vijayalakshmi P, Sheeladevi S, Kothari MB, Sundaresan K, Rahmathullah L. The Kariapattipediatric eye evaluation project: baseline ophthalmic data of children aged 15 years or younger in Southern India. *American journal of ophthalmology.* 2003; 136(4):703-709.
22. Kalikivayi V, Naduvilath TJ, Bansal AK, Dandona L. Visual impairment in school children in southern India. *Indian Journal of ophthalmology.* 1997; 45(2):129.
23. Wedner SH, Ross DA, Balira R, Kaji L, Foster A. Prevalence of eye diseases in primary school children in a rural area of Tanzania. *British Journal of Ophthalmology.* 2000; 84(11):1291-1297.
24. Nepal BP, Koirala S, Adhikary S, Sharma AK. Ocular morbidity in schoolchildren in Kathmandu. *British JofOphthalmology.* 2003;87(5):531-534.
25. Sapkota YD, Adhikari BN, Pokharel GP, Poudyal BK and Ellwein LB, 2008. The prevalence of visual impairment in school children of upper-middle socioeconomic status in Kathmandu. *Ophthalmic Epidemiology.* 2008; 15(1):17-23.

Cite this article as: Batool A, Gannur AG, Gannur MA, Golewale ZA and Arnib Z. A study on ocular morbidities in children aged between 7-18 years attending ophthalmology OPD. *Al Ameen J Med Sci* 2023; 16(2):174-177.

*All correspondences to: Dr. Madhu A. Gannur, Professor, Department of Ophthalmology, Al Ameen Medical College and Hospital, Athani Road,Vijayapur-586108, Karnataka, India. E-mail: madhu087@gmail.com