■ *Brief Communication*

School eye survey in rural population in UP, India

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Abstract

Objective: To find out the prevalence of refractive errors and pattern of ocular morbidity amongst the school children of a rural village.

Materials and methods: A cross sectional study was carried out in children of age group 3 – 12 years in a rural village of Hathras, Uttar Pradesh, India. All the children were examined including visual acuity measurement using Snellen's E chart, retinoscopy and refraction under cycloplegia. Examination of the anterior segment, media, and fundii was also done. Myopia was defined as spherical/cylindrical equivalent refractive error of at least -0.50 D and hypermetropia as +0.50 D or more (Dandona et al 2002).

Results: In the survey 220 eyes of 110 children were examined, majority of them were in 5-10 year age group. The prevalence of uncorrected visual acuity of 6/6 was 85.40%. Refractive error was the cause in 6.81% of eyes with vision impairment, out of which myopia and hypermetropia were present in 26.67% of eyes. Blepharo-conjunctivitis was present in 15.45% of children and Bitot's spots were present in 0.90% of them. Colour blindness was found in one child.

Conclusion: The prevalence of refractive error in rural school is 6.81 %. Blepharitis is the commonest cause of ocular morbidity.

Introduction

The importance of early detection and treatment of ocular diseases and visual impairment in young children lies in the fact that 30% of India's population become blind before the age of 20 years and many of them are under five when they become blind. An effective blindness prevention programme is said to be complete after including child screening. School going children therefore form an important large target group which is easy to approach and also adaptable to the Health Education imparted (Desai et al 1989). The proportion of children who are blind or visually impaired due to refractive errors can be used to assess the level of development of eye care services in a country. Our school eye health survey was imple-mented with the aim of prevention of blindness by early detection and treatment of visual defects and eye health problems in school going children with components of health education. This paper describes the salient features of our programme and the results of our cross sectional study to determine the ocular morbidity pattern in school going children of village Chitabar.

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Materials and methods

Students of the schools in the village Chitabar, UP, India were selected for the survey who were of the age group 3-12 years. Distance visual acuity testing, colour vision, ocular motility evaluation, cycloplegic refraction, if needed, and a basic torch light eye examination were performed by a team from Institute of Ophthalmology, Jawaharlal Nehru Medical College constituting of five ophthalmologists, a refractionist and two ophthalmic technicians. Visual acuity was measured at 6 m by ophthalmic technician using Snellen's chart with Hindi optotypes and 'E' – type chart and was recorded as the smallest line read with one or no errors. First, the right eye was tested and then the left eye. Colour vision was recorded by Ishihara chart. Examination of the anterior segment (eyelid, conjunctiva, cornea, iris, and pupil) was performed by the ophthalmologists. Pupils were dilated with a drop of 1% cyclopentolate only of those patients who had visual acuity of < 6/6

in either eye. After 30 minutes, if a pupillary light reflex was still present, a third drop was administered. Cycloplegia was considered complete if the pupils were dilated and papillary light reflex was absent. After cycloplegia, vision was tested by a refractionist using a streak retinoscope and fundus examination was done. Those patients who had an error in refraction were called to the hospital for post mydriatic testing. Drugs were dispensed to the needy patients at the end of the examination.

Results

A total of 110 children were examined out of which 60 (54 %) were male and 50 (46 %) female. The survey included children of age 3-12 years. The mean age was 8.09 ± 3.2 years. Maximum children were in the age group of 5-10 years.

Uncorrected visual acuity of 6/6 was present in 188 eyes (85.40 %). Among the children with vision impairment, 6.81 % of eyes had refractive errors. Among the refractive errors myopia and hypermetropia were common, responsible for 26.67% of total refractive errors. One child had anisometropic amblyopia. Myopic astigmatism constituted 33.33 % and compound astigmatism 13.33%.

Blepharoconjunctivitis and blepharitis were present in 34 (15.45 %) and Bitot's spots in 2 (0.90 %) eyes. Among others one eye had an iron foreign body, one had congenital dacryocystitis and two eyes had allergic conjunctivitis. Colour blindness was found in one child.

Discussion

This survey was conducted in an extremely backward rural area of india giving insight into the condition of children there. In contrast to the urban area, maximum population in village Chitabar was uneducated and living with minimal facilities and resources. Children go to school not for education but for the mid day meal and therefore even few 2nd standard students could not read the snellens chart (local language optotype). Parents were neither aware not concerned about their children's disease or condition. Most people go to quacks for diseases related to eye or otherwise. Among 110 children 8 were unable to interpret either the snellen's chart or colour vision. Among the refractive errors, myopia was most common followed by hypermetropia and astigmatism. Even after significant refractive error nobody in the village was using glasses. Poor vision in childhood affects performance in school and has a negative influence on the development and maturity. Further, most children do not realize that they are suffering from the ocular disability as they adjust to poor eye sight in different ways. They compensate for their poor vision by sitting closer to the blackboard, or by holding their books close to their eyes. They may also squeeze their eyes. They may also tend not to undertake any work that needs visual concentration, thus affecting their performance (Murthy et al 2002). Because of unavailability of facilities no ophthalmological checkup had ever been done. Due to prevailing unhygienic conditions, there was high incidence of blepharo-conjunctivitis and blepharitis in children. In fact blepharitis constituted the most common cause of ocular morbidity. A school eye screening cum intervention programme with periodic evaluation seems to be appropriate for developing countries as most of the eye diseases found are preventable or treatable (Nepal et al 2003). The young children with substandard vision rarely show obvious symptoms unless the defect is gross. This problem could be resolved by a reliable visual test of every child very early in the school carrier. The large scale use of illiterate E should enable reliable vision tests to be done at 6 year (Khan et al 2005).

This survey showed just the tip of floating iceberg as many children didn't turn up for the check up as harvesting season was going on.

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