Xerophthalmia in Rural South Indian Children

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According to the World Health Organization (WHO), xerophthalmia has been recognized as one of the four major public health problems(1). Although xerophthalmia is prevalent world wide, it still remains a problem of the developing countries. Children from nearly 60 countries were identified by the WHO to be suffering from vitamin A deficiency(2). In Asia alone, over 250,000 children are found to go blind every year on account of vitamin A deficiency. In India, every year nearly 52,000 children become blind due to vitamin A deficiency(3). Studies in the recent past have shown that not only does vitamin A deficiency cause blindness but also it has a profound impact on general morbidity, mortality and growth(2,3).

Xerophthalmia is commonly a problem of pre-school children for whom prophylactic intervention is being carried out. However, studies have shown a higher prevalence of xerophthalmia among school aged children(4-6). These children may go undetected unless specifically sought. At present these children are not covered under the vitamin A prophylaxis programme.

In the present study, we estimated the prevalence of xerophthalmia and its association with social factors.

Material and Methods

This study was carried out in K.V. Kuppam which is a droughtprone and economically backward block in the North Arcot Ambedkar District of Tamil Nadu. People living in this region are predominantly engaged in agriculture. The diet of these people is cereal based and the major crops grown in this region are groundnut, rice, sugarcane, maize, millets, banana and local vegetables. The RUHSA Department of the Christian Medical College and Hospital is carrying out a Health and Development Programme in this block since 1977.

The study is based on the clinical findings of 4843 Balwadi (pre-school) and school children of 10 panchayats. These 10 panchayats were randomly selected from four ecological zones, namely roadside, riverside, mountainside region and others which did not belong to the above three categories.

The survey was carried out by one trained ophthalmic technician and one nutrition field worker who was trained to screen the ocular signs of vitamin A deficiency. Ocular examination was done with the help of a bright illuminant torch. Data on social factors like age, sex and caste were obtained at the time of examination.

The WHO classification of 1982 was adopted to assess vitamin A deficiency among children. The WHO report has stated that conjunctival xerosis (X IA) is not recommended for community diagnosis(1). Because of these recommendations, conjunctival xerosis only when accompanied by Bitot's spots (X IB) has been

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included in the positive clinical signs of xerophthalmia in the data presented.

Results

Of the 4843 children, 2523 (52.1%) were boys and 2320 (47.9%) girls. Their age ranged between 1 and 18 years. The overall prevalence of xerophthalmia was 1.1%. In this study, only Bitot's spot (X IB) accompanied by conjunctival xerosis were observed. No cases of active corneal involvement were seen.

The prevalence was high among children aged 9 years and above while it was low among children aged 6 years and below (*Table I*). The prevalence of xerophthalmia was higher among males (1.5%) than females (0.7%).

TABLE I—*Prevalence of Xeropthalmia*

Age (yr)	Bitot's spot (X IB)	
	Number	Per cent
<3	174	0.6
3–6	986	0.6
6–9	1338	1.1
9–12	1270	1.3
12–15	831	1.3
>15	244	1.2

Children living around the riverside had the highest prevalence of xerophthalmia with 1.9% children having Bitot's spots. This was followed by roadside zone with 1.2% children, and least among children who belong to mountainous region (0.6%).

Children who belonged to the Scheduled Caste had the highest prevalence of xerophthalmia (1.9%). They were followed by Forward Caste children (1.8%) while the Backward Caste children had the lowest prevalence (0.6%).

Discussion

The prevalence of xerophthalmia in the present study was 1.1%. This is the lowest recorded prevalence in India. Rahmathullahji *et al.*(3) in their study conducted in Trichy had reported a prevalence of 11% xerophthalmia among pre-school children. A study from Sirur in Maharashtra had found a prevalence of 56% and this was the highest in the country. However, in that study mild xerophthalmia (X IA) was very high (38%)(4).

Though xerophthalmia is thought to occur more among pre-school children, a few studies have reported a higher prevalence among school age children. Desai *et al.*(5) found a prevalence of 9.9% of both mild and severe xerophthalmia among school aged children. Similarly, Sharma *et al.*(7) found 9.6% cases of both mild and severe xerophthalmia.

In this study, not a single case of active corneal involvement was observed. In almost all the previous studies there were cases of active corneal involvement(1,3-6).

Xerophthalmia in this study was more among males and among scheduled castes. This was the common observation in other studies as well(1,2,8). A striking observation was the presence of xerophthalmia even among adolescent children (1.2%).

In this study, 1.1% prevalence of Bitot's spots accompanied by conjunctival xerosis (X IB) is indicative of public health problem as per the WHO criteria(6). A high prevalence of xeropthalmia among school age children points out that there is a need to redefine the vitamin A intervention policy. School age children may also have to be covered by vitamin A prophylaxis programme.

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Allergic Bronchopulmonary Aspergillosis with Clubbing and Cavitation

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Allergic bronchopulmonary aspergillosis (ABPA) is a chronic indolent disease which ranges from mild asthma to fatal destructive lung disorder. We describe a case of childhood ABPA who presented with recurrent pneumonia along with cavitation and clubbing. The rarity of reports of ABPA in the pediatric population of India prompted the present description.

Case Report

An 11-year-old boy was referred to our Institute for evaluation of recurrent pneumonia. His clinical course during the past two years was characterized by intermittent fever, episodic wheezing dyspnea along with productive cough associated with frequent hemoptysis. There was history of passage of brownish plugs with sputum. The patient had loss of weight and appetite. The child was first born of a non-consanguinous marriage with uneventful antenatal and postnatal periods and had normal milestones. He had received full immunization. There was no family history of diabetes, immunodeficiency disorders or congenital anomalies except bronchial asthma in a maternal uncle.

Chest roentgenograms over the past 2 years revealed transient pulmonary infiltrates with a cavity in the posterior segment of the right upper lobe. Peripheral eosinophilia varying from 8-19% of the total white cell counts was also recorded. One year prior to referral, in spite of repeated sputum stains and cultures being negative for *Mycobacterium tuberculosis*, the patient was initiated on antitubercular therapy in the form of streptomycin, isoniazid and ethambutol without relief.

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