E-ISSN:2454-9894 P-ISSN: 2454-9886
International Archives of
BioMedical and Clinical Research
(An Official Publication of "Ibn Sina Academy of Medieval Medicine & Sciences")
WWW.IABCR.ORG

Section Ophthalmology

Original Article

Retrospective Evaluation of Patients with Xerophthalmia Visited in Hospital

Ashok Kumar Jindal

Principal Specialist, Department of Ophthalmology, Swatantra Sainani late Dr. Mangal Singh District Hospital, Dholpur, Rajasthan, India.

ABSTRACT

Background: *The condition of xeropthalmia refers to the spectrum of ocular manifestations generally because of the vitamin A deficiency. Signs and symptoms include those involving impaired sensitivity of retina to light generally termed as night blindness. In order of their appearance and severity the epithelial disruption of cornea and conjunctiva for example conjunctival xerosis, bitot spots, corneal xerosis and keratomalacia.*

Methods: *A detailed and elaborated study was conducted in the department ophthalmology, Swatantra Sainani late Dr. Mangal Singh District Hospital, Dholpur, Rajasthan, India. A total of 54 patients were studied and involved in the study over a period of 6 months. All patients were divided into three categories of mild, moderate and severe xeropthalmia. Patients from 13 years to 55 years of age were selected for the study analysis. An informed consent was obtained from each patient or from the guardian. All patients were asked to get a vitamin A test done.*

Results: *A total of 54 patients so selected for the study analysis, 34 were female (63%) and 20 were male (37%). (Graph1). According to the clinical values and severity 23 patients were diagnosed with mild xeropthalmia with slight difficulty in night vision and clinical values of 0.25-0.30 mg/L, 19 patients were diagnosed with moderate xeropthalmia with values of 0.20-0.24 mg/L and 12 patients were diagnosed with severe xeropthalmia with values of below 0.20mg/L of vitamin A in blood at any given time.*

Conclusion: *Xeropthalmia can occur in any age group and especially in pre school-age children, adolescents and pregnant women. However, children are at higher risk of vitamin A deficiency and xeropthalmia, owing to their greater vitamin A requirements for growth.*

Keywords: : *Conjunctival, Ophthalmology, Xeropthalmia.*

DOI:10.21276/iabcr.2018.4.4.04

Received: 25.01.18
Accepted: 23.02.18

***Corresponding Author**

Dr. Ashok Kumar Jindal
Principal Specialist,
Department of Ophthalmology,
Swatantra Sainani late Dr. Mangal Singh District Hospital, Dholpur, Rajasthan, India.

INTRODUCTION

The condition of xeropthalmia refers to the spectrum of ocular manifestations generally because of the vitamin A deficiency. Signs and symptoms include those involving impaired sensitivity of retina to light generally termed as night blindness. In order of their appearance and severity the epithelial disruption of cornea and conjunctiva for example conjunctival xerosis, bitot spots, corneal xerosis and keratomalacia.[1,2] These ocular symptoms are majorly related to vitamin A deficiency. These tend to vary with age and severity of deficiency. Night blindness can also be understood as a condition in which a person cannot easily see in dim light and is the earliest clinical symptom of vitamin A deficiency and turns out to be both a sensitive and a specific indicator for low serum retinol levels.[3,4] Within the eye, vitamin A combines with opsin to produce rhodopsin, the photosensitive visual pigment of rods.[5] Further vitamin A deficiency leads to the reduction in the rhodopsin levels and alters the rod cell functions thus leading to classical night blindness. In mild to moderate night blindness a considerable photopic stress from sudden exposure to light occurs, thus leading in increased turnover of rhodopsin.[6] Looking at it historically, the most characteristic sign of ocular problems

Access this article online	
Website: www.iabcr.org	Quick Response code
DOI: 10.21276/iabcr.2018.4.4.04	

How to cite this article: Jindal AK. Retrospective Evaluation of Patients with Xerophthalmia Visited in Hospital. Int Arch BioMed Clin Res. 2018;4(4):16-18.

Source of Support: Nil, **Conflict of Interest:** None

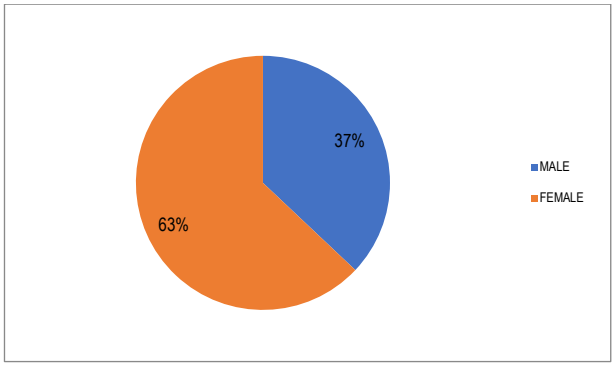
related to vitamin A deficiency has shown bitot spots and opaque to whitish deposits on the scleral conjunctiva.[7] With prolonged vitamin A deficiency, a risk of high morbidity and mortality from common infections is very common. In some cases permanent loss of vision can also occur.[8] The aim of the present study was to retrospectively evaluate the patients of xeropthalmia reporting to the hospital.

METHODS

A detailed and elaborated study was conducted in the department ophthalmology, Swatantra Sainani late Dr. Mangal Singh District Hospital, Dholpur, Rajasthan, India. A total of 54 patients were studied and involved in the study over a period of 6 months. All patients were divided into three categories of mild, moderate and severe xeropthalmia. Patients from 13 years to 55 years of age were selected for the study analysis. An informed consent was obtained from each patient or from the guardian. All patients were asked to get a vitamin A test done. Any value below 0.3 mg/L were considered positive for hypo-vitaminosis A. normal range for all gender and age groups was 0.3-1.20 mg/L. A detailed medical history was obtained for each patient, including past medical conditions, current medical conditions and dietary preferences. A series of tests were conducted for evaluating the severity of the condition and the condition was classified as; Night blindness (XN), Conjunctival xerosis (X1A), Bitot spots (X1B), Corneal xerosis (X2), keratomalacia less than one third surface (X3A), keratomalacia more than one third surface (X3B), corneal scar (XS) and xerophthalmic fundus (XF). All the readings were obtained manually and later on evaluated and recorded electronically. All the data was arranged in a tabulated form and analysed statistically using SPSS software.

RESULTS

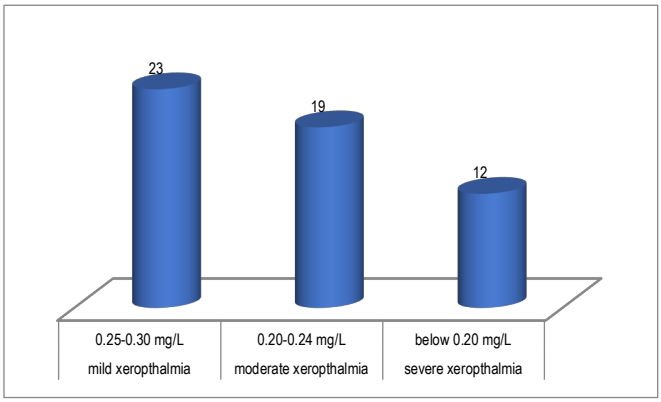
A total of 54 patients so selected for the study analysis, 34 were female (63%) and 20 were male (37%). (Graph1). According to the clinical values and severity 23 patients were diagnosed with mild xeropthalmia with slight difficulty in night vision and clinical values of 0.25-0.30 mg/L, 19 patients were diagnosed with moderate xeropthalmia with values of 0.20-0.24 mg/L and 12 patients were diagnosed with severe xeropthalmia with values of below 0.20mg/L of vitamin A in blood at any given time. (Graph2). Depending on the clinical findings and age group all 54 patients were classified under various headings. Such as, Night blindness (XN), Conjunctival xerosis (X1A), Bitot spots (X1B), Corneal xerosis (X2), keratomalacia less than one third surface (X3A), keratomalacia more than one third surface (X3B), corneal scar (XS) and xerophthalmic fundus (XF). (Table1)



Graph 1: Gender distribution of the subjects

Table 1: The commonly associated signs associated with xeropthalmia

Symptom	Night Blindness	Conjuctival Xerosis	Bitot Spot	Corneal Xerosis	Keratomalacia <1/3 Surface	Keratomalacia> 1/3 Surface	Corneal Scar	Opthalmic Fundus
AGE								
13-19	22	10	17	12	9	8	10	16
20-30	14	31	9	22	21	14	23	20
31-40	7	4	2	10	11	13	9	7
41-55	3	5		3	4	8	9	5



Graph 2: Severity of xeropthalmia

DISCUSSION

This current study brings us to a need of control of vitamin A deficiency leading to xeropthalmia. This fact was well established according to a report of a joint WHO/UNICEF/USAID/Helen Keller international/IVACG.[9] It becomes a fact that progress made in establishment of measures of control vitamin A deficiency and xeropthalmia should be constituted as a public health problem and a detailed treatment plan should be devised for it. A field guide was devised for the micronutrients indicators xeropthalmia and night blindness for the assessment of vitamin A deficiency. The population so covered included children, pre-school in particularly in low socio-economic area.[10] Various previous attempts to detect any night blindness in children had failed, so an effort was made to know the damage received by the rod cells.[11] This study made an effort to screen the patients suffering from xeropthalmia though extensive history taking as, the indicators xeropthalmia lay in close proximity with vitamin A deficiency. Also, night blindness was as two times more effective as exclusive criteria for low serum levels of vitamin A when compared with conjunctival lesions.[12] It is seen that the liver stores as well as the serum levels are very low in patients with xerophthalmia; even malnourished children without ocular lesions had lower than normal serum levels and very low liver stores. There was no relationship between serum vitamin A and any of the serum proteins. It was observed that malnourished children with xerophthalmia had considerable lower serum vitamin A levels than malnourished children without ocular lesions. It is suggestive that good initial response of serum vitamin A to oral therapy with the vitamin, indicating good absorption despite gastrointestinal disturbance. Later, intramuscular therapy serum levels were lower initially but were ultimately comparable to those obtained with the oral route. The depression below normal

levels of total serum protein and albumin was significantly less in marasmus than in kwashiorkor.

CONCLUSION

Xeropthalmia can occur in any age group and especially in preschool-age children, adolescents and pregnant women. However, children are at higher risk of vitamin A deficiency and xeropthalmia, owing to their greater vitamin A requirements for growth.

REFERENCES

1. Vitamin A deficiency and xerophthalmia. Report of a joint WHO/USAID meeting. Geneva: World Health Organization; 1976
2. McLaren DS, Kraemer K, editors. Manual on vitamin A deficiency disorders (VADD), third edition.
3. Sommer A. Field guide to the detection and control of xerophthalmia, 2nd ed. Geneva: World Health Organization; 1982
4. Sommer A, Hussaini G, Muhilal, Tarwotjo I, Susanto D, Saroso JS. History of night blindness: a simple tool for xerophthalmia screening. Am J Clin Nutr. 1980;33:887–91.
5. DeLuca LM. Vitamin A. In: Deluca HF, editor. Handbook of lipid research, the fat soluble vitamins, vol. 2. New York: Plenum Press; 1978:1–67.
6. Stephenson S. On epithelial xerosis of the conjunctiva. Trans Opththalmol Soc UK. 1896;18:55–102.
7. Spence JC. A clinical study of nutritional xerophthalmia and night-blindness. Arch Dis Child. 1931;6:17–26.
8. Indicators for assessing vitamin A deficiency and their application in monitoring and evaluation intervention programmes.
9. Control of vitamin A deficiency and xerophthalmia. Report of a joint WHO/UNICEF/USAID/Helen Keller International/IVACG meeting.
10. Sommer A. Vitamin A deficiency and its consequences. A field guide to detection and control, 3rd ed. Geneva
11. Frederichsen C, Edmund C. Studies of hypovitaminosis A. III. Clinical experiments in the vitamin A balance in children after various diets.
12. Sommer A, Hussaini G, Muhilal, Tarwotjo I, Susanto D, Saroso JS. History of night blindness: a simple tool for xerophthalmia screening.