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SOCIO-DEMOGRAPHIC AND CLINICAL PROFILE OF PATIENTS OF VERNAL KERATOCONJUNCTIVITIS IN A TERTIARY EYE CARE CENTER OF NORTHERN-WESTERN RAJASTHAN

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Conflicts of Interest: Nil

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Abstract:

Purpose: To study the demographic and clinical profile of patients with vernal keratoconjunctivitis (VKC) at a tertiary eye care center in Northern-Western Rajasthan.

Materials and Methods: It was a hospital based observation study conducted from January 2017 to December 2017 in 300 patients of VKC. Data regarding sociodemographic and clinical profile were collected by using predesigned semi structured questionnaire.

Results: Out of 300 patients, VKC was more common in male patients with M:F ratio of 7.3:1. Mostly presented between 6-20 years of age. Maximum number of cases i.e., 45.6% were presented in summer months of April-June. Mixed type was most common type seen in 70.3% cases followed by isolated limbal (27.7%) whereas isolated palpebral form was seen only in 2% of cases. Most common symptoms were itching, redness and watering (100%) seen in all cases. Conjunctival hyperaemia was commonest sign.

Conclusion: Vernal keratoconjunctivitis is a recurrent bilateral disorder, affecting primarily boys and onset is generally from about age of 6 years onwards and resolves around puberty. The clinical course of this disease is usually benign and self-limiting, with vision in most children remains normal but sight threatening complications may manifest if cornea gets involved.

Keywords: Vernal Keratoconjunctivitis, clinical profile, sociodemography

1. Introduction

Vernal keratoconjunctivitis (Spring Catarrah) is a bilateral, recurrent inflammatory disorder of conjunctiva and cornea.[1] It is most commonly disease of young individuals. The age incidence is more commonly between 6 to 20. There is stronger predilection for men being affected two or three times more frequently than women.

The disease is self-limiting in children[1]. Although believed to be a benign and self-limiting condition, it has potential to produce serious visual consequences. It usually occurs with onset of hot weather with high incidence between April and August. Some patients have year round disease.

The vernal keratoconjunctivitis is an allergic disorder in which IgE and Th2 lymphocyte play an important role in mechanism. Mast cells and eosinophils and their mediators play a major role in clinical manifestations of vernal keratoconjunctivitis.

Symptoms are Redness, Itching, lacrimation, ropy discharge and photophobia[2,3]

There are three typical forms : 1) Palpebral or Tarsal; 2) Limbal and 3) Mixed Palpebral vernal keratoconjunctivitis-

There is diffuse papillary hypertrophy most marked on superior tarsus. The papillae enlarge and have flat topped polygonal appearance resembling cobblestones[2]. The thick discharge may cover and outline the giant cobblestones to form a pseudomembrane, the Maxwell-Lyons sign. Limbal vernal keratoconjunctivitis- It is characterized by mucoid nodules and Horner-Trantas dots at the limbus. There may be a wall of gelatinous thickening at the limbus.

Mixed vernal keratoconjunctivitis-

Both palpebral and limbal signs are observed to varying degrees

Keratopathy-

It may present as superficial keratitis or epithelial macroerosions[4]. Plaques containing fibrin and mucous can accumulate into macro-erosions forming Shield ulcer[5,6]. A waxing and waning grey-white lipid depositing in the peripheral, superficial stroma can occur and is known as pseudogerontoxon[3]. Limbal infiltrates may cause transitory modification of corneal astigmatism, whereas keratoconus is most frequent corneal ectasia associated with vernal keratoconjunctivitis.

The clinical profile of this disease seems to have geographical variations[7,8]. However, there are no major series explaining the demographic and clinical pattern of VKC from Northern Western part of the Rajasthan, hence, present study was conducted to study the pattern of VKC in a tertiary eye care center in Northern Western Rajasthan.

2. Materials and Methods

2.1 Study design, settings and participants:

It was a hospital based observational study conducted over a period of one year in a tertiary eye care hospital in Northern Western part of Rajasthan. A total of 300 patients of either sex and any age who had history of itching, redness, photophobia, lacrimation and mucous discharge and suffering from vernal keratoconjunctivitis were selected for this study. Patients with history of contact lens induced conjunctivitis, other ocular diseases and trauma were excluded from the study.

2.2 Data collection

Diagnosis was based on history, symptoms and clinical findings. After confirming the diagnosis, the study subjects were explained about the purpose of the study and informed written consent was taken from them. Sociodemographic, clinical features like complaint of itching, redness, foreign body sensation, history of any associated allergy, mucoid discharge etc. Study subjects underwent proper clinical evaluation including slit lamp evaluation to look for associated signs including palpebral papillae, ropy discharge, horner-tranta spots, any corneal findings, best corrected visual acuity, fundus examination, signs of any recurrence. History was taken of all diagnosed cases of VKC including age of onset of disease, place of residence, any seasonal variations, associated allergic illnesses.

2.3 Statistical analysis

Data were analyzed and statistically evaluated using SPSS software, version 17 (Chicago II, USA). Quantitative data was expressed in mean, standard deviation while qualitative data were expressed in percentage.

2.4 Ethical issues

All participants were explained about the purpose of the study. Confidentiality was assured to them along with informed written consent from their parents or caregivers. The study was approved by the Institutional Ethical Committee.

3. Results

Out of 300 VKC patients, males were 264 (88%) and females were 36 (12%) (Table 1). Maximum cases were seen in 6-10 years of age which were 102 (34%) (Table 2). Majority of cases (n=137; 45.7%) reported in the months of April-June.

According to symptoms profile (Table 1), 300 (100%) cases presented with itching, redness and watering, photophobia in 155 cases (51.6%) and ropy discharge in 101 cases (33.6%). According to disease pattern it was found that mixed form was most common seen in 211 cases (70.3%), limbal form in 83 cases (27.7%), palpebral form in 6 cases (2%). Conjunctival hyperemia was present in 215 cases (71.7%), papillary hypertrophy at superior tarsus was present in 145 (48.3%), gelatinous ring or corneal limbal oedema in 294 (98%), mucoid nodules in 54 cases (18%), horner trantas dots were present in 78 (26%) and corneal involvement in form of superficial punctuate keratopathy was seen in only 12 (4%) patients.

Table 1: Sociodemographic profile of VKC study subjects

Sociodemographic profile	No. (%)
Gender	
Male	264 (88.0%)
Female	36 (12.0%)
Symptoms	
Itching	300 (100.0%)
Redness	300 (100.0%)
Watering	300 (100.0%)
Photophobia	155 (51.6%)
Ropy Discharge	101 (33.7%)
Seasonal variation	
Jan-March	72 (24.0%)
April-June	137 (45.6%)
July-September	73 (24.3%)
Oct-Dec	18 (6.0%)
Signs	
Conjunctival hyperemia	215 (71.7%)
Papillary hypertrophy	145 (48.3%)
Gelatinous ring or corneal limbal oedema	294 (98.0%)
Mucoid Nodules	54 (18.0%)
Horner Tranta Dots	78 (12.0%)
Superficial punctuate keratopathy	12 (4.0%)
Type of VKC	
Limbal	83 (27.7%)
Palpebral	6 (2.0%)
Mixed	211 (70.3%)
Corneal Involvement	12 (4.0%)

Table 2: Age distribution of vernal keratoconjunctivitis patients

Age group (years)	Male	%	Female	%	Total (300)
0-5	24	8%	0	0.0%	24
6-10	84	28%	18	6%	102
11-15	84	28%	6	2%	90
16-20	60	20%	6	2%	66
21-25	12	4%	6	2%	18

4. Discussion

Vernal keratoconjunctivitis is a recurrent bilateral disorder in which both IgE and cell mediated immunity play important roles. It primarily affects boys and onset is

generally from about age of 5 years onwards. Which is consistent with our study as most of the cases were seen in 6-10 years of age group. This is in accordance with the study conducted by Kawuma M et al[9], which found the commonest presentation with VKC to be between 5 and 9 years of age.[9] The study included 44 males and 6 females with M:F ratio of 7.3:1 (table 1). This ratio was near similar to study done by Ujwala S Saboo et al (2013)[10], ratio 6.4:1. M:F ratio in our study is slightly higher than those reported from other parts of the world, but confirms the global pattern of male preponderance of VKC. The high incidence of vernal keratoconjunctivitis in males may be due to frequent exposure to sunlight because of more outdoor activities in warm climatic conditions. The most striking point in its incidence is its seasonal character. 55% cases are reported to occur in summer (Neumann, 1959)[11]. Its incidence has also been stressed to be five times greater in summer than winter (Papamatheacis, 1962)[12] however it tends to persist all year around in hot countries (Togby, 1933)[13]. In our study maximum patients i.e. 46% of cases were seen in summer months of April-June. Although cases were seen throughout the year.

In this study most common complains given by patient were itching, redness and watering, in almost all cases (100%), followed by other symptoms like photophobia, thick mucoid discharge, few cases had corneal complications in the form of superior punctuate epithelial erosions, plaques and shield ulcer. Ujwala S Saboo et al(2013)[10] in their study found that 71.8% patients had a mixed presentation comprising of both limbal as well as palpebral involvement, followed by isolated palpebral involvement in 15.6% and limbal involvement in 12.6% of the patients. It was almost similar to our study with mixed form in 70.3%, isolated limbal form in 27.7% and isolated palpebral form in 2% of cases.

5. Conclusions

Vernal keratoconjunctivitis is a recurrent bilateral disorder in which both IgE and cell mediated immunity play important roles. It primarily affects boys and onset is generally from about age of 5 years onwards and resolves around puberty. It is mostly seen in tropical counties like our which has warm and dry climate. So, after knowing the geographical trend and clinical profile of VKC in our region, we can make the treatment plan and preventing measures can be taken for recurring cases.

6. Limitation

Much of the data is self- reported and subject to recall bias from the subjects. Another limitation was retrospective nature from a hospital-based eye center; hence the data may not represent the exact characteristic of patient treated in a community center.

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