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Clinical spectrum of vernal keratoconjunctivitis-A hospital based study

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Abstract

Introduction: Vernal keratoconjunctivitis (VKC) is an ocular allergic disease, observed in children and young adults presenting with complaints of severe itching and photophobia accompanied by ocular discomfort and lacrimation. Since VKC has geographical variations and is usually seen in relatively hot and humid regions, this study was conducted with the aim of studying the clinical spectrum of this disease in Kashmir, a relatively cooler place in India.

Materials and Methods: This prospective, hospital based, observational study was conducted over a period of 6 months from April-September 2021, in which patients of both genders and any age diagnosed with VKC, based on history and clinical findings, were included. Patients underwent complete ophthalmic examination, including visual acuity, slit lamp examination and fundus examination and were followed up after every 3-4 weeks.

Results: The study included a total of 110 patients, out of which 81 were male while 29 were female and maximum patients were clustered in the age group of 11-15 years. The main symptoms were itching (95) and redness (81) followed by photophobia (45), ropy discharge (39) and watering (38). The common clinical signs that were observed included conjunctival congestion (90.91%) followed by limbitis (64.54%) and Horner Trantas Dots (30.91%). Also, Shield's ulcer, and keratoconus, complications of VKC were seen in 7 (6.37%) and 6 (5.45%) patients respectively. 70% of the study patients had bulbar type of VKC, while 16% had mixed and 13% had palpebral type of pattern.

Conclusion: VKC is a common bilateral allergic disorder, mainly seen in boys of 11-15 years of age with itching as the main symptom. Clinical spectrum of the disease is almost the same as in other parts of India, however bulbar pattern was seen in majority of the patients in our study.

Keywords: vernal keratoconjunctivitis (VKC), allergy, palpebral, limbal

Introduction

Vernal keratoconjunctivitis (VKC) is an ocular allergic disease, observed in children and young adults presenting with complaints of severe itching and photophobia accompanied by ocular discomfort and lacrimation [1, 2] Greater prevalence of VKC is seen in the regions with hot, humid climate, and higher load of airborne allergens. It is a common ocular surface disorder in the Mediterranean region, central Africa, India, and South America [3-7] VKC primarily affects boys more than girls in the first decade of life around the age of 7 years. The male:female ratio observed is 2.3:1 [8].

The onset of the disease is usually after the age of 5 years and resolves around puberty, only rarely persisting beyond the age of 25 years [9].

It is characterized by itching, redness, discomfort, stringy discharge, photophobia, burning and stinging, giant papillae on the upper tarsal conjunctiva, superficial keratopathy, and corneal shield ulcers, keratoconus leading on to permanent corneal damage [10].

VKC is of more concern due to its vision threatening complications like, keratoconus, corneal scarring, refractive errors, shield ulcers and treatment related complications like steroid induced glaucoma [10, 11]. Since VKC has geographical variations and is usually seen in relatively hot and humid regions, this study was conducted with the aim of studying the clinical spectrum of this disease in Kashmir, a relatively cooler place in India.

Materials and Methods

This was a prospective, hospital based, observational study conducted in the department of Ophthalmology, Government Medical College, Srinagar over a period of 6 months from April-September 2021. Patients of both genders and any age diagnosed with VKC, based on history and clinical findings, were included in the study. Patients with ocular trauma, contact lens induced conjunctivitis or other ocular infections were excluded from the study. Detailed history was taken which included age of onset, duration of symptoms, common symptoms, history of atopy and family history of VKC. Patients underwent complete ophthalmic examination, including visual acuity, slit lamp examination and fundus examination and were followed up after every 3-4 weeks. Data were analyzed using SPSS software, version 17 (Chicago II, USA).

Results

This study included a total of 110 patients who were diagnosed with VKC. While majority of the patients (81) were male, only 29 were female. The age distribution of the patients is given in Table 1, which showed that maximum patients (50) were clustered in the age group of 11-15 years. The majority of the patients presented with itching (95) and redness (81) followed by photophobia (45), ropy discharge (39) and watering (38) as explained in Table 2. Table 3 explains about the clinical signs that were observed in the patients. Conjunctival congestion (90.91%) was the

commonest clinical sign, followed by limbitis (64.54%) and Horner Trantas Dots (30.91%). Also, Shield's Ulcer, and keratoconus, complications of VKC were seen in 7 (6.37%) and 6 (5.45%) patients respectively. 70% of the study patients had bulbar type of VKC, while 16% had mixed and 13% had palpebral type of pattern, as shown in Table 4.

Table 1: Age and sex distribution of study patients

Age Group (Years)	Number (%)
<5	2 (1.82)
5-10	25 (22.72)
11-15	50 (45.45)
16-20	23 (20.91)
>20	10 (9.10)
Gender	
Male	81 (73.63)
Female	29 (26.36)

Table 2: Symptom wise distribution of study patients

Symptom	Number (%)
Redness	81 (73.63)
Itching	95 (86.36)
Photophobia	45 (40.90)
Watering	38 (34.54)
Ropy discharge	39 (35.45)
FB sensation	31 (28.18)

Table 3: Clinical signs seen in study patients

Signs	Number (%)
Palpebral Conjunctival papillae	25 (22.72)
Cobblestone papillae	9 (8.18)
Conjunctival congestion	100 (90.91)
Limbitis	71 (64.54)
Horner Trantas Dots	34 (30.91)
Pseudogerontoxon	23 (20.91)
Shield's Ulcer	7 (6.37)
Keratoconus	6 (5.45)

Table 4: Disease Pattern in study patients

Clinical type	Number (%)
Palpebral	15 (13.63)
Bulbar	77 (70)
Mixed	18 (16.36)

Discussion

VKC is a bilateral, allergic disorder, mainly affecting boys. Male: female ratio in our study was found to be 2.8:1. While most of the studies, including a study by Dr. Surekha Bangal, *et. al* [12] concluded male predominance, few studies like Chenge et al [13] and Ukponmwam et al [6] found otherwise. In our study the main age group to be affected by VKC was of 11-15 years, followed by that of 5-10 years and 16-20 years. Only 2 patients were seen to be below 5 years of age and 10 patients above 20 years of age. Hence it is more common in children and young adults and the prevalence decreases above 20 years of age. It was a similar observation in a hospital based study in Pakistan by Shafiq and Shaikh [14] which reported a low prevalence of only 6% of patients with VKC to be above the age of 20 years. The immunopathogenesis of VKC is multifactorial. Classically, it has been thought of as a type I IgE-mediated hypersensitivity reaction; however, it has been suggested that there is cell-mediated Th2 involvement. The major symptom is ocular itching. Minor symptoms include photophobia, burning, tearing, mild ptosis, and a thick, ropy, yellow, mucoid discharge. Clinically, there are three forms of conjunctivitis: palpebral, limbal, and mixed. In our study patients, the major symptom was itching, in 95 patients, followed by redness (81) and photophobia (45). Some patients also complained about thick ropy discharge (39), watering (38) and foreign body sensation (31). The major signs that were seen in our patients were conjunctival congestion (100), Limbitis (71), Horner Trantas dots (34), conjunctival papillae (25), Psedogerntoxon (23), and Cobblestone papillae in 9 patients. A complication of VKC, Shield's Ulcer was seen in 7 patients. Majority of our patients (77) had bulbar type of VKC, while18 had mixed and 15 had palpebral type of VKC. In a similar study by Nagpal H et al [15], Maximum cases (62%) had palpebral form followed by mixed form (23.33%) and bulbar form (14.67%). Similarly in a study by Dr. Surekha Bangal et al[12], Palpebral pattern of disease was the commonest (54%). Itching was the commonest symptom (96%), followed by redness, pain (88%) and ropy discharge (70%). Papillary hypertrophy (64%), limbal hypertrophy (31%) and Horner Trantas dots (29%) were common signs observed. Again in a study from the same region, it was found that 77 % (163) had bulbar disease, 7 % (15) had palpebral, and 16 % (34) had mixed disease [16], which was in concordance with our study.

This study shows that VKC essentially has the same clinical spectrum in India as in other tropical countries, however in our region which happens to be a relatively cooler place, bulbar type of VKC was found to be predominant, though it needs a larger sample size to come to a conclusion. Also it was a hospital based study, which might not be representative of the community as a whole.

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