



Clinical Profile and Systemic Associations in Patients of Vernal Keratoconjunctivitis

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Abstract

Background: Vernal Keratoconjunctivitis (VKC) is a chronic, recurrent, mostly bilateral, seasonal, allergic inflammation of the ocular surface, involving tarsal and/or bulbar conjunctiva occurring in children and young adults who may have associated eczema, rhinitis, asthma or family history of allergy.

Purpose: To study the clinical profile and systemic associations in patients of VKC presenting in a District Hospital set up of Northern India.

Material and Methods: All consecutive patients diagnosed as VKC presenting to eye OPD from 1 June 2018 to 31 May 2019 who consented to be a part of the study were included. Detail clinical history and ocular and systemic examination was done and recorded. The treatment prescribed and response was also observed.

Results: The total number of patients studied were 324. There were 217 males and 107 females. The main symptoms were itching seen in 85.21% patients, redness in 62% and watering in 61.1% patients. The major signs were papillary hypertrophy seen in 78.4% patients, limbal gelatinization in 63.3% patients and conjunctival congestion in 56.6% cases. Seasonal occurrence was found to be more common seen in 58.1% than perennial seen in 41.9% patients. There were 11 patients who had associated rhinitis, 8 had associated eczema, 6 had asthma and 5 had a family history of allergy.

Conclusions: VKC is a allergic disease of the eye, more common in adolescent boys. It may have varied presenting symptoms but papillary hypertrophy is the commonest clinical sign present.

Keywords: Vernal Keratoconjunctivitis, itching, papillae.

Introduction

Vernal keratoconjunctivitis (VKC), also known as spring catarrh is an ocular allergic disease more commonly seen in paediatric age group. It is more common in boys especially in warm and dry climate in sub-tropics and tropics. As the name

suggests it has a seasonal variation with onset in spring and summer. The clinical picture of VKC may vary from milder symptoms like ocular pruritus and tearing to troublesome manifestations like burning, foreign body sensation and photophobia.¹ Chronic inflammation may lead to

permanent visual impairment.² Various clinical signs of VKC are lid edema, chemosis, tarsal papillae, Horner Trantas-Dots, brownish discoloration of eyeballs, darkened eyelids limbal infiltrates. In severe disease corneal involvement may occur with punctate keratitis, macro-erosions and ulceration.³

This study was conducted to study the demographic, clinical profile and systemic associations in patients of VKC presenting in a District Hospital set up of Northern India

Material and Methods

All consecutive cases attending eye OPD at our institute diagnosed as VKC who consented to be a part of the study were included in the study. All cases of allergic conjunctivitis or co-morbid conditions of eye were excluded. Prospective study was conducted in a district hospital of a hilly state between 1st June 2018 to 31st May 2019

The detailed history and ocular and systemic examination of the patients was recorded on a proforma which included their personal details, visual status, presenting complaints, signs, period of occurrence, history of systemic associations (which included history of rhinitis, atopy, asthma or family history of any allergies). Their ocular examination included their visual acuity by

Snellen Chart, visual axis, pupillary reactions, slit lamp examination and biomicroscopy. Keratometry was done in selected cases and intraocular pressure was recorded when needed.

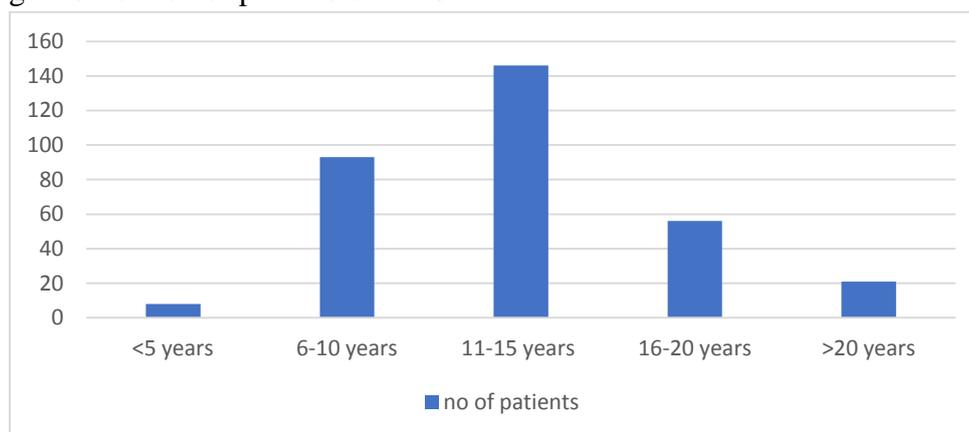
The treatment was noted and response to treatment assessed at 2 weeks and 1 month post therapy. The patients were advised cold compresses and to wear dark glasses whenever they go outside. Treatment given was in the form of topical corticosteroids and topical mast cell stabilizer with antihistaminic activity. The patients were followed up after two weeks after which the topical steroids were tapered if a favorable response was seen and the mast cell stabiliser with antihistaminic activity was continued for a long term.

The data was entered in excel spread sheet and analyzed using epi info 7.2.2. All discrete variables were expressed as frequency and continuous variables as means.

Results

A total number of 324 patients of VKC were included in the study. The youngest patient was 9months and the oldest 28 years The mean age of the patients was 6.04 ± 4.56 years. Maximum patients 44.4% patients were in age group of 11-15 years. There were only 6.5% patients >20 years The age distribution was summarised in Figure 1

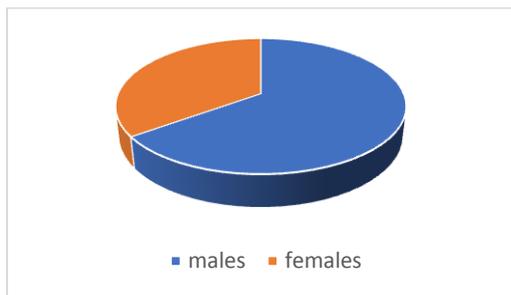
Figure 1 Showing age distribution of patients of VKC



Males outnumbered females in a 2.02:1 as shown in Figure 2 There were 217 males (66.9%) as

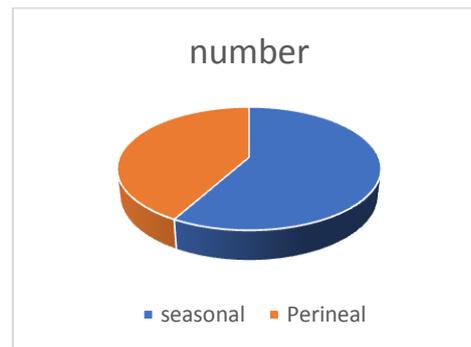
shown in Table 2 which showed a clear male preponderance.

Figure 2 Showing sex distribution of VKC patients



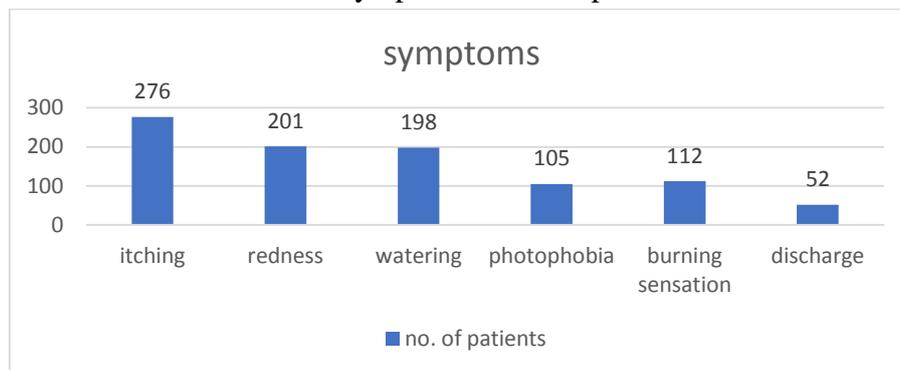
The maximum number of patients were seen in the month of May (30.2%) followed by June (24.3%). Majority of the patients had a seasonal occurrence of the disease seen in 188(58.1%) while perennial disease was seen in 41.9% cases as shown in Figure 3

Figure 3 Showing different pattern of occurrence of VKC



The commonest presenting symptom was intense itching present in 85.2 % patients followed by redness in 62 % patients as seen in Figure 4.

Figure 4 showing the distribution of various symptoms in VKC patients



The commonest ocular sign was papillary hypertrophy in 78.4 % patients followed by conjunctival congestion in 55.6 % cases. The results were as shown in Table 1

Table 1 showing the distribution of ocular signs in patients of VKC

Sr No	Sign	Number of patients	% Age Of patients
1	Papillary Hypertrophy	254	78.4%
2	Conjunctival Congestion	180	55.6%
3	Perilimbal Gealtinisation	205	63.3%
4	SPK	98	30.2%

The Visual Acuity at presentation was as shown in Table 2. There were 2.2 % cases who showed severe visual impairment.

Table 2 Showing decreased visual acuity during episode of VKC

S. NO	Visual Acuity	No Of Pts	% Age Of Pts
1	6/6-6/18	284	87.7%
2	6/18-3/60	33	10.2%
3	<3/60	7	2.2%

The predominant form of the disease was mixed seen in 258 (79.6%) patients followed by palpebral in 46(14.2%). was seen in only 6.2 % cases.

Systemic associations were seen were as shown in Table 3 which showed rhinitis to be the commonest association followed by asthma in 6 patients.

Table 3 Showing association of systemic allergies

Serial No	Association	No. of patients	%Age of patients
1	Rhinitis	11	3.4%
2	Eczema	8	2.5%
3	Asthma	6	1.9%
4	Family History of Allergy	5	1.5%

Most of the patients responded to conservative management, topical mast cell stabilizers, topical corticosteroids and antihistaminics. Cyclosporine 2% eye drops were used in 11 patients and suprtarsal steroid injection was given to 4 patients. The patients had a slit lamp examination and applanation tonometry on each follow up to see for any treatment induced cataract and glaucoma to be detected at an early stage and the treatment substituted if it developed.

Discussion

VKC was first described by Arlt in 1846, Desmarres described the limbal findings later and Graefe the pavement like conjunctival granulations.⁴ VKC is a recurrent, bilateral allergic ocular inflammation more common in children with a aggravation during springs.

In our study mean age was 6.04 ± 4.56 years, while Alemayehu et al observed a mean age of 9.74 ± 4.0 years and Rajappa et al of 13.75 years.^{5,6} Younger mean age in our patients was due to less number of adults seen in our study because of relative cooler climatic conditions.

Disease was found to be more common amongst boys with a male: female ratio of 2.02:1. In almost all studies conducted the disease has been found to be more common amongst boys with the male: female ratio being 4.1 to 2.1 and our study agrees well with these studies.⁵⁻⁸

VKC is a chronic recurrent seasonal as well as perennial allergic conjunctivitis. In our study seasonal occurrence was seen in 58.1 % cases while Rajappa et al had seasonal VKC in 75.5 % cases.⁶

Maximum number of patients presented to our OPD in the hot dry summer months of May (30.2%), followed by June (24.3%), though

patients presented to the eye OPD throughout the year. Even the patients who had a perennial form of the disease had an activation during the hot dry summer months. This was as seen in other studies by Saboo et al, Nagpal et al and Kansakar et al.⁸⁻¹⁰ Rajappa et al in contrast observed maximum cases in January.⁶

Majority of the patients presented with itching followed by redness and watering. Intense itching with papillary hypertrophy have always been the impresa of VKC and we have seen in other studies too.⁵⁻⁹ Alemayehu et al observed itching in all of the VKC patients.⁵ Papillary hyperplasia was the commonest sign followed by conjunctival congestion and perilimbal gelatinization in our study. Sethi et al observed 78.70% to have palpebral papillae, limbal thickening was seen in 63.22% and 8.3% had perilimbal conjunctival pigmentation.⁷

Clinically we found mixed form of VKC to be the commonest as seen in 79.6 % followed by palpebral seen in 14.2% and then bulbar seen in 6.2 % of the cases. This was as seen in studies conducted in other parts of a country as seen by Saboo et al and Nagpal et al though Lambiese et al observed limbal subtype in 58.3% cases.^{8,9,11} VKC thus may have varied ocular presentation from a trivial itching complaint to a potentially blinding disease.¹²

It was seen that many patients had VKC had varied systemic allergies associated in corroboration which topic nature of the disease. In our study 2.5% had associated eczema, 3.4% had rhinitis, 1.9% has asthma and 1.5% had a family history of atopy. In the study conducted by Saboo et al association of allergy in 4.9% of patients, Nagpal et al found it in 30%, and Ukponmwan et al found it in 4.5% cases only.^{8,9,13} This association in our study corroborates with the findings of Tuft et al who showed that perennial VKC in tropical countries has lesser association with atopy.¹⁴

VKC is a self resolving condition, Bonini et al reported spontaneous recovery in 29.8 % patients.¹⁵ Avoiding triggers is required to control

the disease Medical therapy is the mainstay of treatment. Rarely is surgical intervention required. In conclusion we see that VKC is a recurrent allergic disorder seen in childhood especially in the hot and dry climate. Itching is the commonest presenting symptom and papillary hypertrophy the commonest ocular sign. Patient should be counselled about the recurrent nature of disease and treatment should be tailored according to severity of disease

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