

**Research Article**

**Assessment of clinical profile of vernal keratoconjunctivitis patient  
presenting at Al-shifa Hospital, Bahawalpur**

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**ABSTRACT**

**Objective:** To assess the clinical profile of vernal keratoconjunctivitis patient presenting at Al-shifa Hospital, Bahawalpur.

**Material and methods:** This cross sectional study was conducted at Department of Ophthalmology, Al-Shifa Hospital, Bahawalpur from January 2018 to June 2018 over the period of 6 months. Total 155 patients with VKC having age >2 years either male or female were selected. Symptoms of VKC, clinical type and severity of VKC was assessed.

**Results:** A total of 155 patients of VKC attended out-patient-department of Ophthalmology were selected. The great majority of VKC patients were males (83.22%), with a Male: Female ratio of 4.96:1. The mean age at presentation was 10.31 years  $\pm$ 4.05. Out of all reported symptoms, itching (100%) was commonest. Other symptoms were redness (61.93%), watering (50.32%), photophobia (44.51%), thick discharge (41.93%), and foreign body sensation (11.6%).

**Conclusion:** Results of present showed that most of the patients belonged to 6-10 years of age. Itching was the most common symptom. Mixed VKC was the most common type of VKC. Most of the patients found with mild VKC.

**Keywords:** vernal keratoconjunctivitis, Al-shifa Hospital, Bahawalpur.

**INTRODUCTION**

Ocular allergies are the most common conditions affecting the external ocular adnexa throughout the world<sup>1</sup>. These allergies are type 1 hypersensitivity reactions which are mediated by Ig-E antibody in response to various environmental allergens such as pollens, mites, molds, dust, grass, weeds and animals dander<sup>2,3</sup>.

Vernal Keratoconjunctivitis is a bilateral, recurrent disorder in which ig-E and cell mediated immune mechanism play important role.<sup>2</sup> it

primarily affects bodys and usually presents in the first decade of life (mean age 7 years); 95% of cases remit by the late teens and the reminder develops atopic keratoconjunctivits<sup>2</sup> it usually occurs at the onset of jot weather and subsides during winter.<sup>2</sup> in temperate regions about three quarters of patients have associated atopy and two third have a family history of atopy.<sup>2</sup> symptoms are intense itching associated with lacrimation,

photophobia, a foreign body sensation, burning and thick mucoid discharge.<sup>2</sup>

Mast cells play a major role in pathogenesis of vernal keratoconjunctivitis.<sup>2</sup> When a specific allergen binds to the sensitized mast cell in conjunctiva it causes degranulation of mast cells and inflammatory mediators are released i.e. histamine, prostaglandins, leukotrienes, PAF of all, histamine is responsible for symptoms of vernal keratoconjunctivitis predominantly.<sup>3</sup> Most common agents for symptomatic relief of vernal keratoconjunctivitis are mast cell stabilizers, antihistamine, steroids and ciclosporins.<sup>4</sup>

Commonly used topical agents in vernal keratoconjunctivitis include mast cell stabilizers, antihistamines, corticosteroids and immunosuppressive drugs.<sup>5</sup> Newer, more selective therapeutic strategies such as antichemokine receptor antibodies, leukotriene receptor antagonists and specific macrobiomolecules are under evaluation.<sup>5</sup> Ketotifen fumarate is an antihistamine and mast cell stabilizer.<sup>2</sup> Cromolyn sodium is only a mast cell stabilizer.<sup>2</sup>

#### **MATERIAL AND METHODS:**

This cross sectional study was conducted at Department of Ophthalmology, Al-Shifa Hospital, Bahawalpur from January 2018 to June 2018 over the period of 6 months. Total 155 patients with VKC having age >2 years either male or female were selected. The study was carried out after obtaining permission from ethical committee of institution and verbal informed consent was taken from patients. Diagnosis of VKC was based on the patient's history and the presence of typical clinical signs and symptoms. All patients with history of itching, photophobia and mucous discharge were included in the study.

Patients with history of atopy, contact lens induced conjunctivitis, other ocular diseases and trauma were excluded from the study. The data was collected using a pre-formed proforma which included age, gender, history with special attention to characteristic symptoms, duration of symptoms, family or personal history of allergy.

Patients underwent a detailed clinical examination including visual acuity, slit lamp examination, fundus examination, details of treatment and complications if any. Papillae of size > 1mm on upper tarsal conjunctiva with no limbal infiltration marked the palpebral form of VKC. Papillae of < 1 mm on the upper tarsal conjunctiva with limbal infiltration marked the limbal form of VKC. Mixed VKC had features of both limbal and palpebral form. The severity of disease was graded according to Bonini.<sup>6</sup>

#### **RESULTS**

A total of 155 patients of VKC attended outpatient-department of Ophthalmology were selected.

The great majority of VKC patients were males (83.22%), with a Male: Female ratio of 4.96:1. The mean age at presentation was 10.31 years  $\pm$ 4.05. The youngest patient in this study was 2 years and oldest was 21 years. Majority of patients i.e. 115 (74%) were in the age group of 6 – 15 years, 4 (2.5%) patients were above 20 years of age (Table 1).

Out of all reported symptoms, itching (100%) was commonest. Other symptoms were redness (61.93%), watering (50.32%), photophobia (44.51%), thick discharge (41.93%), and foreign body sensation (11.6%). (Table 2).

One hundred twenty-two (78.70%) patients had palpebral papillae. Limbal thickening was seen in 98 (63.22%) patients. Thirteen patients (8.3%) showed perilimbal conjunctiva pigmentation.

In our study, majority of patients i.e. 65 (41.94%) had mixed type of VKC. Isolated limbal form was seen in 33 (21.29%) patients and isolated palpebral form was seen in 57 (36.77%) patients (Table 3).

The grading of severity of VKC is described in Table 4. Majority 85 (54.83%) of patients had mild form of VKC. Corneal ulcer was seen in only one (0.06%) patient.

In this study, positive personal or family history of allergy was present in 9 (5.8%) patients.

**Table 1:** Age wise distribution of patients.

Age Range (in years)	Frequency	%
1-5	21	13.54
6-10	60	38.70
11-15	55	35.48
16-20	15	9.67
> 20	04	2.58
Total	155	100

**Table 2:** Distribution of patients by symptoms.

Variables	Frequency	%
Itching	155	100
Redness	96	61.93
Watering	78	50.32
Photophobia	69	44.51
Thick discharge	65	41.93
FB sensation	18	11.6

**Table 3:** Clinical types of VKC.

Types	No. of Cases / frequency	%
Mixed	65	41.94
Palpaberal	57	36.77
Limbal	33	21.29
Total	155	100

**Table 4:** Severity of vernal keratoconjunctivitis at presentation

Clinical Grade	No. of Cases	%
(Quiescent) absence of Symptoms	0	0
(Mild): Presence of Symptoms with no corneal involvement	85	54.83
(Moderate): Presence of Symptoms + Photophobia with no corneal involvement	64	41.29
(Severe): Presence of symptoms + photophobia, Mild to moderate superficial punctatekeratopathy / corneal involvement	05	3.22
(Very severe): Presence of symptoms + photophobia + diffuse superficial punctuate keratopathy/ corneal ulcer.	01	0.06

## DISCUSSION

Vernal keratoconjunctivitis (VKC) is bilateral, chronic, external ocular inflammatory disorder mainly affecting young boys. Male predominance was noted in our study which included 129 males and 26 females with Male: Female ratio of 4.96:1. Saboo US et al. also reported male preponderance (M: F ratio 6.4:1) in their study which is consistent with our finding.<sup>6</sup> On the contrary Ukponmwan found female predominance (M: F ratio of 1: 1.3) from Nigeria. Male predominance was also found by Leonardi A in his study.<sup>7</sup> Mean Age of patients was 10.31 years +4.05. Maximum patients i.e. 60 / 155 (38.70%) were in

age group of 6-10 years. This is in accordance with the study conducted by Kawuma M, which found the commonest presentation with VKC to be between 5 and 9 years of age.<sup>8</sup> In this study, only 2.58% patients were above the age of 20 years whereas Saboo US et al. found 12% patients above 20 years and Leonardi et al. found 4% of patients above 20 years.<sup>6-7</sup> Different environmental and geographical variations may be responsible for such varied demography.

VKC showed seasonal variations in our study. Majority of patients reported in the months of May and June which corresponds to the hot, dry weather. This is in agreement with a study conducted by Jivange VS et al., which reported

highest incidence in hot and dry season.<sup>9</sup> Study conducted by Malu KN in Nigeria also reported a perennial presentation of VKC with seasonal variations.<sup>10</sup>

In our study, 5.8% of patients had personal or family history of allergy which correlates with the study of Saboo US et al. where personal or family history of allergy was present in 4.91% of patients.<sup>6</sup> The Hayilu D et al. also found an association between family history of non-ocular allergic disease such as asthma, atopic rhinitis and VKC.<sup>11</sup>

In present study, the most common presenting feature of itching (100%) supports the dictum, 'no itching, no vernal catarrh'. Apart from this, redness was found in 96 (61.93%) patients, watering in 78 (50.32%) patients and thick discharge in 65 (41.93%) patients. Foreign body sensation was reported by 18 (11.61%) patients. Similar findings were found by Bisht R et al.<sup>12</sup> and Rajappa SA et al.<sup>13</sup> The predominant type of VKC was of the mixed form (41.94%) followed by palpebral (36.77%) and limbal (21.29%). Khan FA et al. and Saboo US et al. also reported mixed form as commonest presentation.<sup>6,14</sup> On the contrary, Rajappa et al. found predominance of palpebral form in their study, whereas Kawuma M reported limbal form (75%) in majority of patients.<sup>13,8</sup> This signifies that the prevalence of subtypes of VKC is different in various parts of the world. Perilimbalconjunctival pigmentation was present in 13 patients (8.3%) in our study. This sign was documented in 52/468 (11%) patients by Saboo US et al, whereas Rao et al. found perilimbalconjunctival pigmentation as consistent finding in VKC.<sup>6,15</sup> In this study, 122 (78.70%) patients had palpebral papillae and 98 (63.22%) patients had limbal thickening. Rao Parsad I.S.V.S.P et al. also found palpebral papillae in 89% of patients and limbal thickening in 61% of patients.<sup>16</sup>

#### CONCLUSION:

Results of present showed that most of the patients belonged to 6-10 years of age. Itching was the

most common symptom. Mixed VKC was the most common type of VKC. Most of the patients found with mild VKC.

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