



Original Research Article

Demography, clinical profile and compliance of patients of vernal keratoconjunctivitis in a tertiary eye care centre in Southern Karnataka

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ABSTRACT

Objective: To describe demographic and clinical profile of patients with vernal Keratoconjunctivitis (VKC) and to assess the compliance of treatment of vernal keratoconjunctivitis over a period of 1 year from May 2017 to April 2018.

Results: Among 100 patients, VKC was more common among male (67.00%) than female (33.00%) patients with maximum cases seen between 6-10 years of age. Majority of cases reported in summer in the month of March to May (Total: 49.00%). Mixed form was commonest among all 66(66.00%) cases followed by limbal 18(18.00%) and palpebral form 16 (16.00%). Commonest symptom was redness (100%) followed by itching (98%) cases. Palpebral papillae were commonest sign. Mild grade of VKC is commonest. Family history of allergy was noted in 7% of cases.

Conclusion: VKC is a bilateral recurrent disorder affects most commonly young males between ages of 6 to 10 years in which both IgE and cell mediated immunity play important roles. Association of family history of allergic disorders was less. VKC is more common in rural area. VKC is one of the leading causes of outpatient ophthalmic morbidity. VKC patients presents usually in a stage of mild to moderate grade. For persistent severe disease needs frequent follow-up.

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1. Introduction

Ocular surface is constantly exposed to allergens. In ocular surface all tissues are affected by allergy. Allergic conjunctivitis represents a spectrum of disorders, comprising atopic keratoconjunctivitis (AKC), seasonal allergic conjunctivitis (SAC), perennial allergic conjunctivitis (PAC) and vernal keratoconjunctivitis. VKC and atopic keratoconjunctivitis are most severe forms and can involve cornea leading to visual loss.¹

VKC/Spring catarrh is a bilateral chronic, recurrent, seasonally exacerbated inflammatory allergic condition of the ocular surface involving tarsal and bulbar conjunctiva, in which both IgE and cell mediated immune mechanisms play an important role. Eosinophils, Ig E antibody, non-Ig E mechanisms, mixed mechanisms etc play a role in

inflammation of VKC.² VKC is a commonest eye condition in the Mediterranean region, Central Africa, India and Asia pacific region usually occurs in warm climatic conditions. It mainly affects children between the age of 6 and 18 years. It is a self-limiting disorder with spontaneous resolution after puberty or early adult life.² VKC affects boys more than girls with the male to female ratio varying from 4:1 to 2:1. Commonest symptoms include are itching, redness, watering, ropy discharge foreign body sensation and photophobia. Commonest signs are palpebral (upper tarsal) papillae, conjunctival giant papillae (cobble stone appearance), limbal thickening, Horner-Trantas's dots and perilimbalconjunctival pigmentation. Depending on the predominant involvement of tarsal or limbal conjunctiva, VKC is divided into palpebral, limbal or mixed type. Limbal form is common in non-White patients.¹⁻⁴

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The diagnosis is generally based on complaints of ocular itching in the presence of upper tarsal conjunctival papillae and/or limbal hypertrophy with bulbar conjunctival pigmentation.⁵ But difficult cases can be diagnosed by conjunctival scrapping and demonstration of infiltrating eosinophils.² History of allergic disorders in family like asthma, allergic rhinitis, eczema and urticaria was reported in upto 49% of patients suffering from VKC.

Treatment for VKC includes topical mast cell stabilizers, antihistaminic and leukotriene antagonists which help only in mild to moderate cases. In severe cases or in cases with acute exacerbations topical steroids are used. In the treatment of VKC steroids are the most potent topically applied medication. Corticosteroids function by inducing a generalized anti-inflammatory and immunosuppressant effect and decreasing phagocyte response.⁴ However corticosteroids are known to cause serious side effects, like increase in intraocular pressure, posterior sub capsular cataract, increased risk of infection and delayed wound healing. Hence corticosteroids should be used in caution.²⁻⁴ Cyclosporine and Tacrolimus are used for chronic and severe cases of VKC.²

VKC seems to have some geographical variations also. Therefore, this observation study was done to know the demographic, clinical profile and compliance of disease in our geographical area.

2. Materials and Methods

This was a hospital based Prospective observational study conducted in a tertiary eye care hospital. Patients with signs and symptoms of VKC, who are attending Ophthalmology outpatient of Mandya Institute of Medical Sciences, Mandya during the study period from May 2017 to April 2018 was included.

2.1. Inclusion criteria

Patients presented with symptoms of itching, tearing/ discharge, photophobia, foreign body sensation and signs like Papillae, Hyperemia, Horner Tranta spots, Punctate epithelial Keratitis were included.

2.2. Exclusion criteria

Patients with history of contact lens wear during study period, ocular disorders such as glaucoma, infective keratitis were excluded. Patients not willing to give consent and not willing for follow up were also excluded.

2.3. Methods

Patients screened for inclusion and exclusion criteria are included in the study after obtaining their informed consent from the patients or from their parents. Complete ophthalmic examination includes testing of vision by Snellen's

chart, slit lamp examination, intraocular pressure using Goldmann's applanation tonometer, fundus examination using slit lamp with 78 D lens. Symptoms and signs of VKC were noted in specially designed proforma which includes socio-demographic details, occurrence of symptoms (seasonal or perennial), family history of allergy and aggravating and relieving factors and past history. The type and severity of VKC was graded, which is given by Nikhil S Gokhale et al.⁴ Graded into mild, moderate intermittent, Moderate chronic, and severe blinding disease. Treatment was initiated depending on the grade of VKC as advocated by Nikhil S Gokhale et al.⁴ Follow up was done every week for first 2 weeks and then after 1 month (3rd follow up). After third follow up other visits are considered as subsequent visit. In each follow up visit patient was evaluated for improvement in symptoms, signs and compliance to treatment.

2.4. Study analysis

Data were entered in MS Excel and analysed in SPSS v20. Continuous variables were summarized as mean or median with standard deviation (SD) or inter-quartile range (IQR). Categorical variables were expressed as percentages with 95% confidence interval (95% CI). T test was used to test the statistical significance of difference between the groups in continuous variables. Chi square test was used to test the statistical significance of difference in distribution of categorical variables.

3. Results

A total of 100 patients were enrolled in the study over a period of one year.

Out of 100 patients 67 were males and 33 were females with 2:1 Male: female ratio. 42% of patients was between age group of 6 to 10 years, 27% between 11 to 15 years and 23% between 0 to 5 years. Mean age of presentation was 9.4 years. Youngest age of presentation was 2 years and oldest was 30 years. Peak incidence was between 6 to 10 years.

60% of our patients were from rural area and 40% are from urban area.

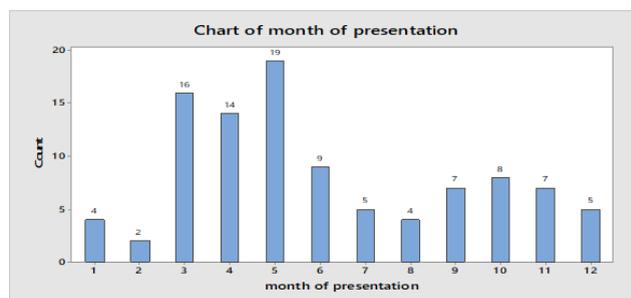


Fig. 1: Bar diagram representing month wise distribution of patients with VKC

Table 1: Age and sex distribution of patients with VKC

S.No	Age in years	Male	Female	Total
1	0 – 5	18	5	23
2	6 -10	24	18	42
3	11 – 15	21	6	27
4	16 – 20	3	2	5
5	21 – 25	0	1	1
6	26 -30	1	1	2
7	31- 35	0	0	0
Total with % Percentage		67(67%)	33(33%)	100

Table 2: Area wise distribution of VKC patients

Residence	Males	Females
Urban	25	15
Rural	42	18

49(49%) patients presented during months of March, April and May. Highest number of patients presented during May month 19(19%).

100% of patients presented with redness and change in colour of eye followed by itching, foreign body sensation, watering, sticky eyes, pain, poor vision and swollen eyelid. 60% had history of perennial disease and 35% had seasonal onset of disease. Patients with family history of allergy/atopy were seen in 07 patients (04 - males & 03 – females)

On examination 100 % had papillae, 54% had Horner-Tranta's dots, 37% had focal or limbal inflammation, cobble stone appearance was noted in 27%, pannus in 17%, fine SPEE 21%, annular limbal inflammation in 20%. 75 % had normal visual acuity, VKC associated decrease vision was seen in 25 %.

Mixed form (66%) was most common type of VKC followed by limbal (18%) and palpebral (16%) form.

48% of patients had Mild grade of VKC, 25% had mild intermittent grade. Most patients presented to us when disease is in Mild and Moderate grade. 10% of patients had severe grade of VKC

In first follow-up all patient had taken. In second follow-up 06(6%) had stopped treatment completely, 31(31%) had poor compliance. In third follow-up 14(14%) patients had stopped treatment completely. At the end of third visit only 61(61%) of patients fully completed the treatment.

4. Discussion

VKC is allergic eye disease affecting ocular surface. Majority of patients are between age group of 6 to 10 years (42%). Youngest age of presentation was 2 years and oldest was 30 years. When comparing with other studies by Ujwala Saboo et al.³ who reported mean age of presentation was 12 year. In our study onset was earlier also mean age of presentation was earlier.

VKC has predilection towards male gender, in our study similar observation was noted with male to female ratio of 2:1. Similar sex distribution was noted by Rajsekar et al from Chennai.⁶

We observed 60% of study participants from rural area and 40% from urban area, there are no studies which noted about distribution of VKC among rural and urban population.

49% of our patients presented during summer months between March to May. Similar findings were reported by Adhikari S et al⁷ and Ujwala Saboo.³ India being a tropical country and VKC is common in tropical climate, more incidences were noted in the months of summer.

Most common presenting symptom was itching & redness and common sign was papillae. In our study patients commonly presented with redness and change in colour of eye followed by itching, foreign body sensation, watering, sticky eyes and swollen eyelid. This was similar to other studies by Ujwala Saboo et al,³ Rajsekar⁶ and Tabbara K F.⁸

Family history of allergies /atopy was noted in 7% patients, which is similar to study by Ujwala Saboo et al³ study but significantly less compared to 30 % in Rajsekar study.⁶

In our study ocular signs of VKC observed were papillae(100%), 54% had Horner-Tanta's dots, 37% had focal or limbal inflammation, cobble stone appearance was noted in 27%, pannus in 17%, fine SPEE 21%, annular limbal inflammation in 20%, which is similar to other studies conducted by Ujwala Saboo et al,³ Rajsekar⁶ and Boniniet al.⁹

The most common clinical type of VKC observed was mixed form in 66%, limbal form in 18% and palpebral form in 16% which was similar to observation by Ujwala Saboo et al.³ But in other studies by Adhikari S et al⁷ and Keziath N Malu¹⁰ reported limbal form was commonest which was contrary to our findings. Rajsekar K⁶ reported palpebral

Table 3: Presenting symptoms of study participants of VKC

Symptoms	No. of patients	Percentage
Seasonal	35	35 %
Perennial	60	60 %
Itching	98	98%
Redness/change in eye colour	100	100%
Pain	09	09%
Watering	45	45%
Sticky eyes	22	22%
Poor vision	08	08 %
Foreign body sensation	55	55%
Swollen eyelid	05	05%

Table 4: Ocular signs in VKC patients

Signs	No of patients	Percentage
Papillae	100	100
Horner-Tranta's dots	54	54
Fine SPEE	21	21
Cobblestones	27	27
Focal or limbal inflammation	37	37
Annular limbal inflammation	20	20
Coarse SPEE/PEK	6	6
Conjunctival granulomas	1	1
Pannus	17	17
Macro erosions	1	1
Shield ulcer	00	00
LSCD with complication	00	00

Table 5: Clinical types of VKC among study participants of VKC

Type	No. of patients	Percentage
Mixed	66	66%
Palpebral	16	16%
Limbal	18	18%

Table 6: Grades of VKC among study participants

Grade	No. of patients	Percentage
Mild	48	48%
Moderate intermittent	25	25%
Moderate chronic	17	17%
Severe	10	10%
Blinding	00	00

Table 7: Compliance of VKC patients to treatment

	Treatment taken completely	Incomplete treatment	Treatment not taken
1st visit	86	14	00
2nd visit	63	31	06
3rd visit	61	25	14

(62%) form was commonest.

Most of the patients presented in mild and moderate intermittent grade of VKC, this is similar with other studies.^{3,6}

There are fewer studies done to check compliance of patients for treatment in VKC. In our study in first follow-up all patients had taken treatment and compliant. During subsequent follow up visits increase in dropout rate of patients to treatment increases.

5. Conclusion

VKC is a bilateral disease affects most commonly in ages of 6 to 10 years with male predominance. Association of family history of allergic disorders was less in our study. VKC is more common in rural area than urban areas. VKC patients presents usually in a stage of mild to moderate grade. Mixed form of VKC is the most common clinical type. For persistent severe disease needs frequent follow-up to prevent visual disability. VKC being chronic disease compliance of patients to treatment is initially was good but term compliance is poor. There are very few studies conducted for compliance of patients towards treatment for VKC, our study concludes compliance of patients was poor.

6. Source of Funding

None.

7. Conflict of Interest

None.

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