

A CLINICAL STUDY ON AETIOPATHOGENESIS, COURSE AND PRESENTATION OF VERNAL KERATOCONJUNCTIVITIS SEEKING TERTIARY EYE CARE IN CHENNAI

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ABSTRACT

BACKGROUND

Conjunctival diseases of the eye are varied with significant environmental influence. Though they are widely prevalent with lot of morbidity associated with it, still it is not taken that very seriously as Corneal or Retinal conditions. Yet these conjunctival diseases lead to lot of loss of productive Man Hours at work and also absenteeism at school. We decided to take up one such condition called Vernal Conjunctivitis also known by names like spring catarrh, seasonal allergic conjunctivitis etc. Its chronic course with seasonal exacerbations was studied in detail and analysed in this study.

The aim of the study is to analyse aetiopathogenesis and clinical profile of vernal keratoconjunctivitis (VKC) amongst patients attending our Eye Department at a Tertiary Care Medical College Hospital in Chennai from patient records of past 6 months.

MATERIALS AND METHODS

A retrospective study analysing patient records at our Department of Ophthalmology, Government Omandurar Medical College Hospital, Chennai, Tamil Nadu, India. Analysing 100 patients with VKC identified by detailed history, characteristic symptomatology, and clinical profile, through a study period from March 2017 to August 2017. The detailed questionnaire took details on patients' occupation, socioeconomic status, nutrition levels, onset, course, response to therapy, other allergies if any etc. Detailed slitlamp examination, visual acuity, IOP and tear film assessment were done. Regular follow-up carried out every 4 weeks for 6 months.

RESULTS

Out of 100 patients, 73 (73%) were male and 27 (27%) were female. The maximum incidence of VKC was seen in the age group of 11–15 years. Maximum cases (62%) had palpebral form secondly mixed form (23%) and bulbar form (15%). Corneal complications occurred in 16 patients. The minor complications seen in 11 patients consisted of superficial punctate keratopathy (SPK). The major complications mainly superior pannus was seen in 5 patients. Though many of our VKC patients gave a history of allergy/atopy such as allergic rhinitis, asthma, hay fever etc., in the present study, actually coexisting allergic conditions could be identified in only 30% patients.

CONCLUSION

VKC is a relatively common subtype of allergic conjunctivitis with max occurrence in males of 11–15 years age group. Of its subtypes most common is palpebral form followed by mixed and bulbar forms. Some cases showed history of atopy and other allergic conditions.

KEYWORDS

Ocular allergy, Atopy, Bulbar, Palpebral, Papillae, Vernal Keratoconjunctivitis.

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BACKGROUND

Vernal Keratoconjunctivitis (VKC) is a notorious ocular allergic condition, seen in children and young adults

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hallmarks being severe itching and photophobia and chronicity marked by ocular discomfort and lacrimation^{1,2} It is a chronic ocular allergy that affects mostly children and adolescents living in tropics and with seasonal influence giving it the name Spring catarrh³ Prevalence of VKC mostly seen in boys more than girls in the first decade of life around the age of 7 years. The male: female ratio observed is 2.3:1³ The onset of the being around the age of 5 years and usually resolves around puberty, very rarely staying after the age of 25 years.⁴ Main irritants being exogenous as well as endogenous causes have been noticed to be associated with the aetiopathogenesis of VKC. Basically, an immune mechanism is associated with its development as evidenced

by various studies⁵ Being aware of clinical profile of the condition in the local population will be very helpful in designing preventive measures and also in a chronic course be essential in proper management of the disease. The present study was conducted to describe clinical profile of VKC from a tertiary care center in Chennai, Tamilnadu, India.

MATERIALS AND METHODS

This is a retrospective study conducted in a tertiary care center in Chennai, Tamilnadu, India. It was conducted as a retrospective study by analysing data collected from a total of 100 patients with VKC who were clinically diagnosed based on their history, characteristic symptomatology and evidenced by their clinical profile over a period of 6 months from March 2017 to August, 2017. The profile of each patient was assimilated into a detailed questionnaire detailing age, sex, locality, change of locality, age at onset of the disease, seasonal trends, coexisting allergic or "atopic" illnesses, and family history of VKC or associated allergic or atopic conditions. Thorough examination with slitlamp was done. Patients were advised review every week for the first month, biweekly for second month and monthly thereafter. The first table gives the age and sex distribution of VKC in our study; the maximum occurrence of VKC occurred in the age group of 11–15 years (Table 1). Data of the distribution of comparative symptomatology of the disease in our group (Table 2). Analysing the type of disease seen in our group is given (Table 3). We have also compared the prevalence of various sign of this disease (Table 4). Specific importance is given to the presence of corneal involvement in our series (Table 5). Shows that 31 of 100 patients had other coexistent allergic conditions such as atopy, allergic rhinitis, skin allergy etc., (Table 6)



Image 1. Early VKC Presentation

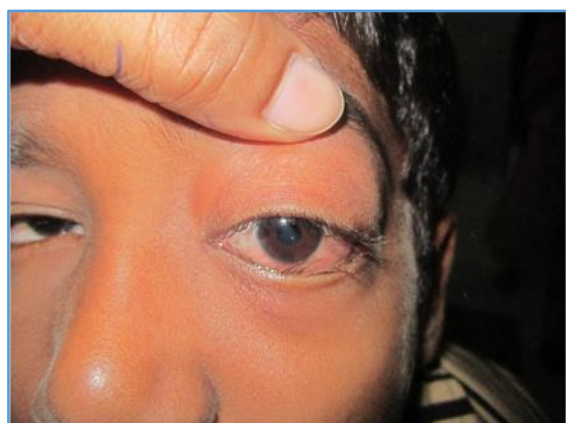


Image 2. VKC with Itching, Redness, Ropy Discharge



Image 3. Severe VKC with Secondary Infection



Image 4. Corneal Pannus and Opacity Complication

RESULTS

Of 100 patients, 64 (64%) were male and 36 (36%) were female. The first table gives the age and sex distribution of VKC in our study; the maximum occurrence of VKC occurred in the age group of 11–15 years is Table 1. As shown in Table 2, analysing symptomatology 74 (74%) cases presented with itching whereas redness was noticed in 26 (26%) cases and history of photophobia in 39 cases (39%), ropy discharge in 12 cases (12%), and watering and burning sensation in 19 cases (19%). Disease pattern as described in Table 3 depicts palpebral form in 59 cases (59%), bulbar form in 16 cases (16%), and mixed form in 25 cases (25%) Table 4 describes the coexisting ocular signs in cases examined, 72 cases (72%) had papillae on upper palpebral conjunctiva, 22 cases (22%) had conjunctival congestion, 32 cases (32%) had SPKs and limbal papillae, and 24 cases (24%) had Horner Tranta's spots. Corneal complications as shown in Table 5 occurred in 16 (16%) patients; 17 patients had minor complications (SPKs) and 3 had major complications (pseudogerontoxon). Patients with VKC often give a history of allergy or of atopic diseases such as allergic rhinitis, asthma, or hay fever, but in the present study, coexisting allergic conditions could be detected in only 31 (31%) patients as shown in Table 6.

Sl. No.	Age Distribution	Cases
1	05-10	21
2	11-15	59
3	16-20	11
4	21-25	09
Sl. No.	Sex Distribution	Cases
1	Male	64
2	Female	36

Table 1. Age and Sex Distribution of Patients

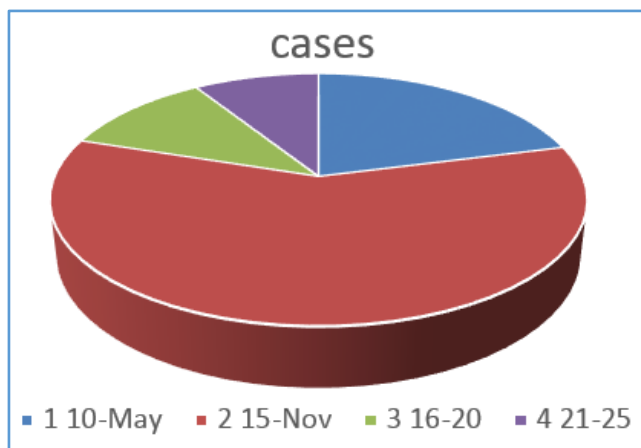


Figure 1. Age Distribution

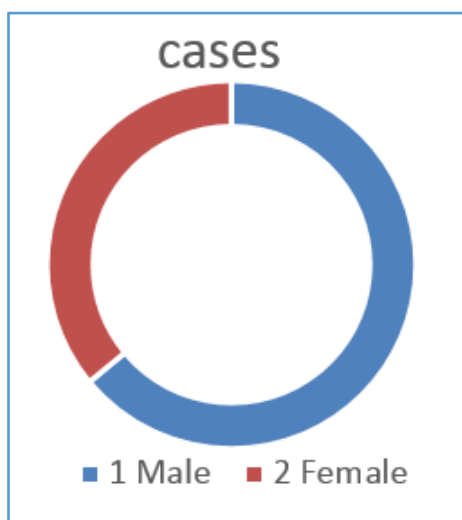


Figure 2. Sex Distribution

Sl. No.	Symptoms (one or more)	Cases
1.	itching	74
2.	redness	26
3.	photophobia	39
4.	Ropy discharge	12
5.	watering	19
6.	Burning sensation	42

Table 2. Ocular Symptoms Distribution

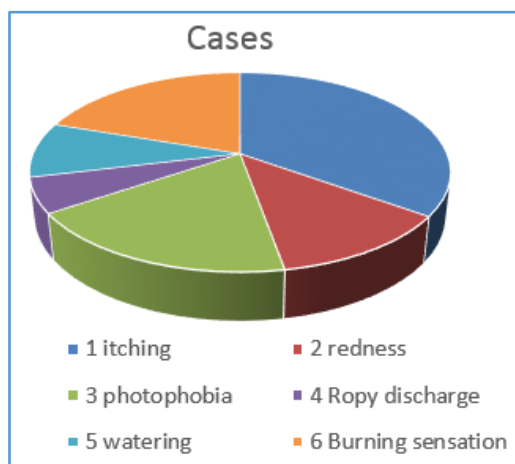


Figure 3. Ocular Symptoms Distribution

Disease Pattern	Number of Cases (%)
Palpebral	59(59)
Bulbar	16 (16)
Mixed	25 (25)

Table 3. Disease Pattern

Ocular sign (one or more)	Number of Cases (%)
Papillae on upper palpebral conjunctiva	72 (72)
Conjunctival congestion	22 (22)
Limbal papillae	20 (20)
SPKs	32 (32)
Horner Tranta's spots	24(24)
Pseudogerontoxon	2 (2)

Table 4. Ocular Signs Distribution

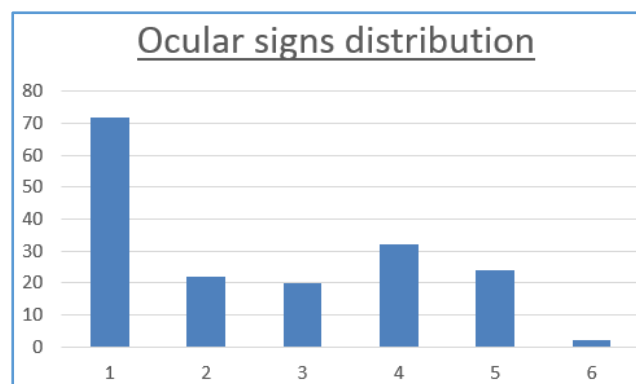


Figure 4. Ocular Signs Distribution

1. Palpebral Papillae
2. congestion
3. Limbal papillae
4. SPKs
5. Horner tranta's spots
6. Pseudogerontoxon

Corneal pathology	Number of Cases (%)
Superficial punctate keratitis	20 (13.33)
Pseudogerontoxon	2 (1.33)

Table 5. Corneal Involvement

History of allergic disorders	Number of Cases (%)
Present	45 (30)
Not present	105 (70)

Table 6. Vernal Keratoconjunctivitis Association with Allergic Disease

DISCUSSION

VKC is an allergy-associated recurrent inflammatory disease mostly seen in prepubescent males. Usually its presentation will be of palpebral and/or bulbar conjunctiva papillae, corneal keratopathy, and mild-to-severe itching. VKC is usually considered to be a paediatric disease and has been found to limit itself usually by the age of puberty. We have observed that 11 cases (11%) in our study group were more than 20 years of age. A hospital-based study done in Pakistan by Shafiq and Shaikh⁶ document a lower prevalence of only 6% of patients with VKC to be above the age of 20

years. Leonardi et al⁷ in their series have reported only 4% of patients to be more than 20 years of age. However, an Indian study by Saboo et al⁸ have given 12% of patients to be above 20 years of age. Male: female ratio in our study was 2.75:1. Most of the studies have reported male: female ratio between 4:1 and 2:1^{9,10} However, a study by Ukponmwan¹¹ from Nigeria reported higher ratio of females affected as compared to male (1:1.3). Our study has found a male: female ratio which is in consonance with above studies. There is a higher predilection for warm, dry climates, as inflammation trends to decrease in the cooler months of the year. VKC is self-relenting and typically lasts 5-11 years with remission at puberty. The immunopathogenesis is multifactorial and has more environmental causes. Classically, it has been thought of as a type I IgE-mediated hypersensitivity reaction; though it is accepted that there is cell-mediated involvement also. Vernal conjunctivitis has a varied spectrum of presentation from itching, ropy discharge, redness watering to severe forms of Corneal opacities leading to loss of vision. Palpebral form, Limbal form and Mixed variety are the three types of this disease described. Most common is palpebral form which is associated with thickened epithelial flat lesions like the Cobblestones on footpath in the palpebral conjunctiva. Limbal and the Mixed varieties come next in prevalence and have the characteristic ropy discharge. Vernal conjunctivitis with itching and subsequent rubbing of eyes leads rarely to corneal curvature problems like Keratoconus, corneal vascularisation called pannus and in extreme cases to loss of vision. 30% of series were found to be atopic based on the history of hay fever, asthma, and eczema etc. Studies by Lambiase et al.¹² and Bonini et al.¹³ reported associated systemic allergies in 41.6% patients in different series. Pharmacologic therapy is the mainstay of treatment and in that Topical treatments are more effective than systemic. The mainstay of drugs in treating this condition is Antihistamines like Olopatidine and Bepotastine. Mast cell stabilizers like Sodium chromoglycate are also useful in controlling the allergy cycle. Beyond this when patients have very severe allergy then short-term weak steroids like Fluorometholone and Loteprednol are used under frequent followup. Non-steroidal anti-inflammatory drugs like Ketorolac, Bromfenac and Nepafenac can be used in maintenance dose. Unfortunately, in certain cases who are fast steroid responders then IOP spikes have to be immediately addressed. If not judiciously used Steroids can lead to more harm than good. Patients have to be clearly explained not to self-medicate or refill prescriptions by themselves especially when they have exacerbations due to allergy triggers. Final resort in refractory cases is the use of topical cyclosporine. General Hygiene, cold compresses, and even shifting to a location with cooler temperate climate will help in fighting this malady of Vernal Catarrh.

CONCLUSION

VKC is a highly prevalent form of allergic conjunctivitis and this disease is widely seen in males of 11–15 years' age group. Few of the patients showed a history of atopy and

other allergic conditions. Our analysis throws some clarity on the features of this disease which is seen from the mildest Ocular itching stage to the worst Corneal Pannus and Blindness stage. Early Recognition with sustained followup with minimal judicious use of steroids will be the sheet anchor of managing these patients.

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