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Original Research

Analysis of clinical profile of vernal keratoconjunctivitis patients: An observational study

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ABSTRACT:
Background: The current research had been carried out to study the demographic as well as clinical profile of subjects having vernal keratoconjunctivitis (VKC). **Materials and Methods**: Every VKC patient's chart was examined. There were total of 100 patients with VKC. VKC was confirmed to be the cause based on the patient's medical history and typical signs and symptoms. The presence of active VKC was determined based on the patient's complaints of ocular discomfort, upper tarsal conjunctival papillae, limbal hypertrophy, and bulbar conjunctival pigmentation. **Results**: Thirty individuals had corneal scarring as a result of their condition. Only 8% of individuals had corneal shield ulcers, although 17% had keratoconus. Twenty-six individuals, or 26%, had peripheral corneal neovascularization. Seven percent of patients presented with clinical signs of limbal stem cell deficit (LSCD), including corneal neovascularizationand corneal scarring. Cataract and glaucoma, both caused by corticosteroids, were observed in 7% and 5% of patients, respectively. **Conclusion**: There is a higher risk of consequences from both the disease and its therapies.
Keywords: Allergic eye disease, papillae, shield ulcer, vernal keratoconjunctivitis

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INTRODUCTION

Vernal keratoconjunctivitis (VKC) is a bilateral, usually seasonally recurrent, allergic inflammation of the conjunctiva, characterised by limbal gelatinous hypertrophy and/or upper tarsal giant conjunctival papillae. Although rare in temperate regions, it represents an important cause of hospital referral in many parts of Africa and Asia.[1] Clinical and immunohistochemical studies suggest that IgE-dependent (type I allergic) and IgE-independent (type IV allergic) mechanisms are involved in the immunopathogenesis of VKC, in which various inflammatory cells, including different T cell subpopulations play an active role via a cascade of chemical mediators. Endocrine, genetic, neurogenic, environmental and socioeconomic risk factors have been identified.[2,3] However, its aetiology and pathophysiology remain unclear. The clinical course of this disease is usually benign and self-limiting, but a minority of patients will face very debilitating and sight threatening complications.[4] Topical corticosteroids are often used during flare-ups in combination with mast cell stabilizers as maintenance treatment for VKC. However, this management is unsatisfactory in controlling severe cases and avoiding recurrences. Non-steroidal immune modulators such as ciclosporin A and tacrolimus are promising alternatives, but tolerance to these agents needs to be improved and production costs reduced.[5,6]Hence, this study was conducted to evaluate clinical profile of subjects having vernal keratoconjunctivitis.

MATERIAL AND METHODS

The medical records of all VKC subjects were reviewed. One hundred people were diagnosed with VKC. The patient's medical history and characteristic symptoms led doctors to the diagnosis of VKC. Ocular pain, upper tarsal conjunctival papillae, limbal hypertrophy, and bulbar conjunctival pigmentation

were used to diagnose active VKC. The history of ocular discomfort, scarring, and inactive upper tarsal conjunctival papillae all contributed to the diagnosis of the quiescent type. If the cobblestone papillae on the upper tarsal conjunctiva were over one millimetre in diameter and there was no limbal infiltration, we classified the patient as having the palpebral form of VKC. All the results were recorded in Microsoft excel sheet followed by statistical anlaysis.

RESULTS

As of the end of the study, one hundred VKC subjects have been evaluated. There were the most patients in May, at 85 (or 85% of the total). The average patient's age was 19.2 at presentation. Eighty (80%) were men and twenty (20%) were women. Sixty-three percent of those diagnosed with the condition initially had active symptoms. On average, patients had been experiencing symptoms for nineteen months prior to being sent to this center. Patients with a symptom onset age of twenty or later were classified as having adult onset VKC. Of the thirty-three patients who presented at age twenty and up, fifteen (10 men, 5 females) had an adult start of disease, while the remaining patients had largely a childhood disease that persisted into adulthood.

Table 1: Gender-wise distribution of subjects

Gender	Number of subjects	Percentage
Males	80	80%
Females	20	20%
Total	100	100%

Table 2: Complications of vernal keratoconjunctivitis

Complications	Number of subjects
Corneal scarring	30
Keratoconus	17
Corneal shield ulcers	08
Peripheral corneal neovascularization	26
Limbal stem cell deficiency	07
Cataract	07
Glaucoma	05

Thirty individuals had corneal scarring as a result of their condition. Only 8% of individuals had corneal shield ulcers, although 17% had keratoconus. Twenty-six individuals, or 26%, had peripheral corneal neovascularization. Seven percent of patients presented with clinical signs of limbal stem cell deficit (LSCD), including corneal neovascularization, conjunctivalization, and corneal scarring. Cataract and glaucoma, both caused by corticosteroids, were observed in 7% and 5% of patients, respectively.

Itching (89%) was the most often reported symptom, followed by redness (71%) and watery eyes (49%). Palpebral papillae (81% of cases) and limbal thickening (78% of cases) were the most common symptoms. Fifty-three out of a hundred individuals (53%), or people with perilimbal conjunctival pigmentation. Forty-nine patients (49%) had a chronic perennial type of VKC that lasted longer than 48 months. Seven patients (7%) had the isolated form of VKC that affected the limbus, while 19 patients (19%) had the isolated form of the disease that affected the palpebrae. In most cases, both the limbal and palpebral regions were affected by the condition (83%).

DISCUSSION

Rare and persistent ocular allergy vernal keratoconjunctivitis (VKC) can lead to serious vision problems. It is an IgE- and T cell-mediated disease that causes chronic inflammation characterized by the activation of eosinophils, lymphocytes, and structural cells, and it primarily affects children and young adults. The best way to treat VKC is with a combination of conservative care and medication. Patients and their families need to be informed of the disease's protracted course, its chronic progression, and the potential consequences it may cause. The severity of corneal involvement, as well as the frequency and intensity of symptoms, should guide treatment. Mild to moderate VKC can be effectively treated with mast cell stabilizers and antihistamines. Topical steroids are used as a last resort to treat severe symptoms of conjunctivitis and ocular irritation. Topical ocular formulations of cyclosporine A and tacrolimus are two immunomodulators that have been studied for the treatment of VKC. Long-term treatment with topical cyclosporine A for VKC has been shown to be successful, with signs and symptoms greatly improved without notable adverse effects.[7]

Environmental allergens, climate, and genetic susceptibility are all implicated in the etiology. Evidence from cytologic, biohumoral, immunohistologic, and molecular biological analyses all point to Th2 lymphocytes as the underlying pathogenic mechanism in VKC. Eosinophils, mast cells, and their mediators all play significant roles in the clinical symptoms. Th1-type cytokines, chemokines, growth factors, and enzymes are over-expressed with the more common Th2-derived varieties.12 Serum levels of interleukin-17 (IL-17) and antinuclear antibodies are both elevated in people with VKC, and there is a strong link between VKC and a family history of autoimmune illnesses.[8,9] Consequences of persistent inflammation include tissue remodeling reactions, papillae development of varying sizes and shapes, stem cell insufficiency, and varying degrees of superficial corneal opacification.[10,11]Hence, his study was conducted to assess the clinical profile of subjects having vernal keratoconjunctivitis.

As of the end of the study, one hundred VKC subjects have been evaluated. There were the most patients in May, at 85 (or 85% of the total). The average patient's age was 19.2 at presentation. Eighty (80%) were

men and twenty (20%) were women. Sixty-three percent of those diagnosed with the condition initially had active symptoms. On average, patients had been experiencing symptoms for nineteen months prior to being sent to this center. Patients with a symptom onset age of twenty or later were classified as having adult onset VKC. Of the thirty-three patients who presented at age twenty and up, fifteen (10 men, 5 females) had an adult start of disease, while the remaining patients had largely a childhood disease that persisted into adulthood.Itching (89%) was the most often reported symptom, followed by redness (71%) and watery eyes (49%). Palpebral papillae (81% of cases) and limbal thickening (78% of cases) were the most common symptoms. Fifty-three out of a hundred individuals (53%), or people with perilimbal conjunctival pigmentation. Ujwala S et al[12]evaluated the demographic and clinical profile of patients with vernal keratoconjunctivitis (VKC) at a tertiary eye care center in India. Retrospective chart analysis of 468 patients of VKC seen from January 2006 to December 2006. Mean age at presentation was 12 years. Majority of the patients had mixed pattern disease (72%). Chronic perennial disease was seen in 36% patients. Personal or family history of allergies was noted in 5% patients. Severe disease based on clinical grading was present in 37% patients. Moderate to severe vision loss was seen in 12% of total population. Persistent disease beyond 20 years of age was found in 12% patients. VKC-related complications such as corneal scarring (11%), shield ulcer (3%), keratoconus (6%), and limbal stem cell deficiency (1.2%) were seen. Treatment-related complications like corticosteroid-induced cataract and glaucoma were seen in 6% and 4% of patients, respectively. In another study, Kansakar I et al evaluated the profile of VKC. Total of 220 patients were enrolled in this study. Male to female ratio with VKC was found to be 4:1. Clinical presentation showed seasonal variation; 78.2% during the spring and summer season. Bilateral involvement was seen in 100% cases, out of which 44.5% were limbal type. The best spectacle corrected visual status of better than 6/9 was in 96.4%, while 2.3% had vision less than 6/12. In 9.5% corneal involvement was seen as superficial keratopathy, while others, such as Shield ulcer, pannus, corneal scar, and keratoconus consisted of 8.3%.[13]

CONCLUSION

India's tropical climate has a clinical pattern of VKC that is similar to that seen in other tropical areas. There is a higher risk of consequences from both the disease and its therapies, and atopy is not typically connected with chronic permanent disease.

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