



CLINICAL PROFILE OF PATIENTS WITH VERNAL KERATOCONJUNCTIVITIS: A HOSPITAL BASED STUDY

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ABSTRACT **PURPOSE:** To study clinical profile of patients with vernal keratoconjunctivitis. **METHODS:** Vernal keratoconjunctivitis (VKC) is a severe form of allergic conjunctivitis that interferes with daily activities at school or work because of intense itching, watering, foreign body sensation, photophobia, and profuse mucoid discharge. Our study is a hospital based observational prospective study of 54 patients suffering from vernal keratoconjunctivitis (VKC). All the patients in our study underwent comprehensive ocular examination. The history of any associated allergy or atopic illness in the family was taken. Patients were managed according to their underlying etiology. **RESULTS:** in our study, we found that out of 54 patients, 38 (70.37%) patients were males, whereas 16 (29.63%) patients were females. The highest incidence of VKC occurred in 11-15 years of age group. In our study majority of patients exhibit palpebral form of the disease, i.e 70 eyes (64.81%) followed by mixed form in 24 eyes (22.22%) and limbal form in 14 eyes (12.96%). **CONCLUSION:** In our study we found that VKC is a disease of childhood and adolescence, more commonly affecting males. We also detected an increase in number of cases in periods of seasonal changes such as spring.

KEYWORDS : Vernal keratoconjunctivitis, allergic conjunctivitis, ocular itching, giant papillae, Horner Tranta's spots.

Introduction:

Vernal keratoconjunctivitis (VKC) is a chronic ocular allergic disease which is recurrent in nature. VKC mainly affects adolescent age group and males living in warm and hot dry climatic conditions.² VKC has a widely varying incidence with global distribution. Patients with VKC have exacerbated symptoms mainly in the spring season, possibly due to increase in pollen counts.³ The common symptoms are itching, redness, photophobia, burning, mucoid discharge, watering and foreign body sensation. Clinically VKC is characterized by papillary hypertrophy of the palpebral or limbal conjunctiva, bulbar conjunctival pigmentation, and Horner-Trantas dots. The clinical profile of the disease is necessary for proper management of the disease as well for preventive measures of the same.

Material and Method:

The present study "CLINICAL PROFILE OF PATIENTS WITH VERNAL KERATOCONJUNCTIVITIS: A HOSPITAL BASED STUDY" study is prospective, observational study of 54 patients suffering from Vernal keratoconjunctivitis (VKC) attending the eye OPD at R.D Gardi Medical College, Ujjain from February to April 2022. A total number of 54 patients were enrolled in the study.

Methodology:

An informed written consent of all patients who were enrolled in the study was taken. All patients underwent comprehensive ocular examination pertinent to the disease. The preliminary data of patients such as name, age, sex, socioeconomic status and education status were recorded.

We also recorded personal and family allergies, "atopic" illnesses, age of onset of the disease, duration of the disease and the presenting symptoms.

The chief complaints were recorded in detail especially watering, redness of eye, foreign body sensation, itching, photophobia, burning, eye involvement whether unilateral or bilateral was recorded.

Details of ophthalmic examination of both the eyes was done including record of visual acuity and intraocular pressure. Slit lamp examination was done for clinical signs, and any complications found, either due to the disease or treatment were also noted. Follow-up was done every 2 weeks for 6 months.

Results:

Table no. 1 : Gender distribution of patients in study group (n=54 patients)

GENDER	NUMBER OF PATIENTS	PERCENTAGE
MALE	38	70.37

FEMALE	16	29.63
TOTAL	54	100

In our Study, 38 (70.37%) patients were males whereas 16 (29.63%) patients were females.

Table no. 2 : Age distribution of patients in study group (n=54 patients)

AGE	NUMBER OF PATIENTS	PERCENTAGE
<5 YEARS	2	3.70
5-10 YEARS	18	33.33
11-15 YEARS	21	38.88
16-20 YEARS	8	14.81
>21 YEARS	5	9.26
TOTAL	54	100

In our Study, 39 (72.21%) patients were 5-15 years of age, 8 (14.81%) patients were 16-20 years of age, 5 (9.26%) patients were >21 years of age whereas only 2 (3.70%) patients were <5 years of age.

Table no. 3 : Disease pattern of patients in study group (n=108 eyes)

DISEASE PATTERN	NUMBER OF EYES	PERCENTAGE
Palpebral	70	64.81
Limbal	14	12.96
Mixed	24	22.22
TOTAL	108	100

In our study majority of eyes exhibit palpebral form of vernal keratoconjunctivitis i.e 70 (64.81%) followed by mixed form in 24 eyes (22.22%) and limbal form in 14 eyes (12.96%).

Table no. 4 : Incidence of symptoms in our study group (n=108 eyes)

SYMPTOMS	NUMBER OF EYES	PERCENTAGE
Ocular itching	98	90.74
Redness	77	71.29
Ropy discharge	68	62.96
Photophobia	61	56.48
Burning sensation	42	38.88
Watering	33	30.55

In our study the most common symptom showed is Ocular itching in 98 eyes (90.74%), 77 (71.29%) eyes presented with Redness, 68 (62.96%) eyes presented with complain of ropy discharge.

Table no. 5 : Distribution of Ocular signs in patients in study group (n=108 eyes)

OCULAR SIGNS	NUMBER OF EYES	PERCENTAGE
Papillae on upper palpebral conjunctiva	92	85.18
Conjunctival congestion	69	63.88
Limbal papillae	38	35.18
SPKs	36	33.33
Horner tranta's spot	31	28.70
Pseudogerontoxon	5	4.62

In our study 92 eyes (85.18%) had papillae on upper palpebral conjunctiva, 69 eyes (63.88%) had conjunctival congestion, 38 eyes (35.18%) had limbal papillae while 36 eyes (33.33%) had superficial punctuate keratitis

Table no. 6 : Incidence of Complications in our study group (n=108 eyes)

COMPLICATIONS	NUMBER OF EYES	PERCENTAGE
Peripheral corneal neovascularization	13	12.03
Corneal scarring	12	11.11
Shield ulcer	5	4.62
Glaucoma	4	3.70

In our study out of 108 eyes, 13 eyes (12.03%) had peripheral corneal neovascularization as complication, in 12 eyes (11.11%) corneal scarring was noted, shield ulcer was seen in 5 eyes (4.62%) and glaucoma was seen in 4 eyes (3.70%).

Discussion:

Vernal keratoconjunctivitis (VKC) is a chronic allergic condition seen most commonly in adolescents age group. VKC's specific cause is unknown, but it appears to have a multifactorial origin.^{3,4} VKC was regarded as a type 1, IgE-mediated disorder.^{4,5} Current clinical findings imply that it is a Th2-driven mechanism like asthma. Histamine is released by mast cells and basophils, which in turn triggers inflammatory lymphocytes and eosinophils, causing inflammation and tissue damage on the ocular surface.⁵ Metz DP et al (1997) in their study found that elevated levels of the inflammatory cytokines IL-3, IL-4, and IL-5 have been seen.⁶

In our Study, 38 (70.37%) patients were males whereas 16 (29.63%) patients were females. This results of our study shows that VKC is commonly seen in male population as compared to female population. Results of our study are comparable with the study of Saboo US et al (2003) who also found in their study 87% males and 13% females.⁷ In their study Singh A et al (2022) also found male to female ratio was 2.5:1.⁸

In our Study, 39 (72.21%) patients were 5-15 years of age, 8 (14.81%) patients were 16-20 years of age, 5 (9.26%) patients were >21 years of age whereas only 2 (3.70%) patients were <5 years of age. Akinsola FB et al (2008) reported in their study that VKC affect children and young adults mainly children of less than 10 years.⁹ In their study Nidhi et al (2021) found that majority of patients were between age group of 5-16 years.¹⁰ In all these studies including ours found that VKC is common in young adolescent group of population mainly 5-15 years of age.

In our study majority of eyes exhibit palpebral form of vernal keratoconjunctivitis i.e 70 (64.81%) followed by mixed form in 24 eyes (22.22%) and limbal form in 14 eyes (12.96%). Nagpal H et al (2017) also found in their study that out of 150 cases 93 cases belong to palpebral form of VKC and 35 cases belong to mixed form of VKC.¹¹ Sofi RA et al (2016) also found in their study that 77% (163) patients belong to palpebral VKC and 7% (15) patients had palpebral, and 16% (34) patients had mixed form of VKC.¹⁴

In our study the most common symptom showed is Ocular itching in 98 eyes (90.74%), 77 (71.29%) eyes presented with Redness, 68 (62.96%) eyes presented with complain of ropy discharge. Marey HM et al (2017) also found that most frequently reported symptoms was ocular itching followed by other symptoms.¹² VKC can cause a variety of symptoms, such as photophobia, foreign body sensation, tearing and thick ropy discharge.^{2,13}

In our study 92 eyes (85.18%) had papillae on upper palpebral conjunctiva, 69 eyes (63.88%) had conjunctival congestion, 38 eyes (35.18%) had limbal papillae while 36 eyes (33.33%) had superficial punctuate keratitis, Horner tranta's spot in 31 eyes (28.70%) and 5 eyes (4.62%) had pseudogerontoxon. Nagpal H et al (2017) found various ocular signs in their study, 110 cases (73.33%) had papillae on upper palpebral conjunctiva, 52 cases (34.67%) had conjunctival congestion, 20 cases (13.33%) had SPKs and limbal papillae, and 22 cases (14.67%) had Horner tranta's spots.¹¹

In our study out of 108 eyes, 13 eyes (12.03%) had peripheral corneal neovascularization as complication, in 12 eyes (11.11%) corneal scarring was noted, shield ulcer was seen in 5 eyes (4.62%) and glaucoma (due to long term steroid use) was seen in 4 eyes (3.70%). In their study Nidhi et al (2021) found that commonest complication was peripheral corneal neovascularization, which was present in 7 patients (7.6%) and Corneal scarring was seen in 6 (6.5%) patients.¹⁰ Arif AS et al (2017) in their study found that Corneal scarring was observed in 59 (20.3%) eyes, shield ulcer was detected in 9 (3.1%) eyes while 7 (2.4%) eyes had corneal neovascularization as complication.¹⁵ Addis H et al (2018) also found in their study that in the upper third of cornea shield ulcer was formed in 6% of patients and other complication such as corneal scarring and glaucoma was also noted.¹⁶ In their study Brindisi G et al (2021) found complications such as corneal neovascularization and shield ulcer that are generally located in the upper cornea.¹⁷

Topical mast cell stabilisers, antihistamines, or mast cell stabilizer/antihistamine combinations are the first line of treatment (olopatadine or lodoxamide). These medications can be used safely for long term had to be started one month before the onset of disease for moderate-to-severe cases. To reduce iatrogenic glaucoma, steroids are only used in cases of severe inflammation and corneal shield ulcers. Cyclosporine can be used to treat cases that do not respond to steroids. In mild circumstances, nonsteroidal anti-inflammatory eye drops are used as a secure substitute. Avoidance of allergens or triggering factors, using cold compresses, and relocating to a milder region are all examples of environmental therapy practises.¹⁰

CONCLUSION:-

VKC is a common form of allergic conjunctivitis, and this disease tends to occur more in males of 11–15-year age group. The diagnosis of VKC largely clinical, based on symptoms and signs. With the increased use of immunomodulators, this arsenal of treatments is growing. To better comprehend the complex nature of VKC and to develop more effective therapies, continued research is necessary.

REFERENCES

1. kosirukvongs P, Visitsunthorn N, Vichyanond P, Bunnag C. Allergic conjunctivitis. Asian Pac J Allergy Immunol 2001;19:237-44.
2. Leonardi A. Vernal keratoconjunctivitis: pathogenesis and treatment. Prog Retin Eye Res. 2002;21(3):319-339.
3. Hall A, Shilio B. Vernal keratoconjunctivitis. Community Eye Health. 2005 Mar;18(53):76-8. PMID: 17491748; PMCID: PMC1705659.
4. Bonini S, Bonini S, Lambiase A, Marchi S, Pasqualetti P, Zuccaro O, et al. Vernal keratoconjunctivitis revisited: A case series of 195 patients with long-term followup. Ophthalmology. 2000;107:1157-1163.
5. Mantelli F, Santos M S, Pettiti T, Sgrulletta R, Cortes M, Lambiase A, et al. Systematic review and meta-analysis of randomized clinical trials on topical treatments for vernal keratoconjunctivitis. Br J Ophthalmol. 2007;91:1656-1661.
6. Metz DP, Hingorani M, Calder VL, Buckley RJ, Lightman SL. T-cell cytokines in chronic allergic eye disease. J Allergy Clin Immunol. 1997;100(6 Pt 1):817-824.
7. Saboo US, Jain M, Reddy JC, Sangwan VS. Demographic and clinical profile of vernal keratoconjunctivitis at a tertiary eye care center in India. Indian J Ophthalmol. 2013 Sep;61(9):486-9. doi: 10.4103/0301-4738.119431. PMID: 24104706; PMCID: PMC3831763.
8. Singh A, Rana J, Kataria S, Bhan C, Priya P. Demographic and clinical characteristics of childhood and adult onset Vernal Keratoconjunctivitis in a tertiary care center during Covid pandemic: A prospective study. Rom J Ophthalmol. 2022 Oct-Dec;66(4):344-351. doi: 10.22336/rjo.2022.61. PMID: 36589333; PMCID: PMC9773114.
9. Akinsola FB, Sonuga AT, Aribaba OT, Onakoya AO, Adefulo-Osilelu AO. Vernal keratoconjunctivitis at Guinness Eye Centre, Luth (a five year study). Nig Q J Hosp Med. 2008 Jan-Mar;18(1):1-4. doi: 10.4314/nqjhm.v18i1.44945. PMID: 19062462.
10. Nidhi, Chaturvedi N, Bhattacharya M. Clinical and demographic profile of vernal keratoconjunctivitis at a tertiary eye care hospital in national capital region of India. IP Int J Ocul Oncol Oculoplasty 2021;7(4):368-371.
11. Nagpal H, Rani N, Kaur M. A retrospective study about clinical profile of vernal keratoconjunctivitis patients at a tertiary care hospital in Patiala, Punjab, India. Kerala J Ophthalmol 2017;29:189-91.
12. Marey HM, Mandour SS, El Morsy OA, Farahat HG, Shokry SM. Impact of Vernal Keratoconjunctivitis on School Children in Egypt. Semin Ophthalmol. 2017;32(5):543-549. doi: 10.3109/08820538.2015.1123737. Epub 2016 Apr 29. PMID: 27128625.
13. Sowka J, Gurwood A, Kabat A. Vernal keratoconjunctivitis. The handbook of ocular disease management. March 2007:11A-14A. Metz DP, Hingorani M, Calder VL, Buckley RJ, Lightman SL. T-cell cytokines in chronic allergic eye disease. J Allergy Clin Immunol. 1997;100(6 Pt 1):817-824.
14. Sofi RA, Mufti A. Vernal Keratoconjunctivitis in Kashmir: A temperate zone. Int Ophthalmol. 2016 Dec;36(6):875-879. doi: 10.1007/s10792-016-0213-8. Epub 2016 Mar 10. PMID: 26961753.
15. Arif AS, Aaqil B, Siddiqui A, Nazneen Z, Farooq U. Corneal Complications And Visual

- Impairment In Vernal Keratoconjunctivitis Patients. J Ayub Med Coll Abbottabad. 2017 Jan-Mar;29(1):58-60. PMID: 28712175.
16. Addis H, Jeng BH. Vernal keratoconjunctivitis. Clin Ophthalmol. 2018 Jan 11;12:119-123. doi: 10.2147/OPTH.S129552. PMID: 29391772; PMCID: PMC5769567.
17. Brindisi G, Cinicola B, Anania C, De Castro G, Nebbioso M, Miraglia Del Giudice M, Licari A, Caffarelli C, De Filippo M, Cardinale F, Duse M, Zicari AM. Vernal keratoconjunctivitis: state of art and update on treatment. Acta Biomed. 2021 Nov 29;92(S7):e2021517.