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Ophthalmology

RETROSPECTIVE STUDY OF VIRAL KERATOCONJUNCTIVITIS - OUR EXPERIENCE

Dr. Sonali Krishnamohan Rawal* Assistant Professor. *Corresponding Author

Dr Arundhati Pandey Associate Professor.

ABSTRACT

Aim: Study of patients of viral keratoconjunctivitis in relation to the varied clinical profile and management.

Material And Methods: Retrospective study of patients presenting with viral keratoconjunctivitis in the outpatient department between June 2018 – June 2019 .

Result - Total 120 cases were included in the study over one year period; with increase incidence between October to January. Age of patients varied from 4 to 58 years . The cases were evaluated based on presence of follicles ,superficial punctate keratitis (SPKs) , subepithelial infiltrates , laterality , dry eye , DOV , h/o associated fever , malaise , and preauricular lymphadenopathy ; and recurrence over one year period .

Conclusions: Atypical presentation of the viral infection wherein symptoms took longer to get cured , increased recurrence rate and more discomfort due to dryness and photophobia due to corneal opacities .

KEYWORDS : viral keratoconjunctivitis , dryness, photophobia , recurrence , chronicity.

Viral keratoconjunctivitis is mainly caused by Adenovirus . It was first identified in Chennai – " Madras Eye" . Earlier there have been outbreaks of Coxsackie virus in 2003, 2007, 2010 ; and Adenovirus outbreak in India in 2013 – 14 and the latest outbreak caused by Coronavirus Covid 19.

The most common cause of viral keratoconjunctivitis is adenoviruses. The adenovirus is a part of the Adenoviridae family that consists of a nonenveloped, double-stranded DNA virus. Though more than 50 serotypes of adenovirus have been isolated, 19 documented types cause eye infection; most common serotypes causing severe forms of viral keratoconjunctivitis being 8, 19 , and 37. Frequently associated infections caused by adenovirus include upper respiratory tract infections, ocular infections and diarrhea in children.

It is transmitted by direct contact with the virus , through droplet form and smears of infected body fluids that enter the human body through nose , throat , and conjunctivita; and reservoirs such as swimming pools. Though the incubation period is 2 to 12 days , but is highly contagious even before symptoms arise and remains till virus can still be demonstrated in body fluids , eg -in tears for 2 - 3 weeks. It is highly resistant to environmental influences and at room temperature remains infectious for weeks causing nosocomial infections. Washing hands and avoidance of eye contact are key to preventing transmission to others.

It is characterised by acute onset of watering , redness ,severe pain and foreign body sensation. Symptoms include inflammation in the conjunctiva(conjunctivitis) and in the cornea (keratitis), severe pain, edema, diminished eyesight, tearing, photophobia, haloes, foreign body sensation, discharge and development of membranes in some cases. Corneal involvement causes intense photophobia due to punctate epithelial lesions, followed by subepithelial lesions at the level of Bowmann's membrane due to hypersensitivity to viral antigen. Later deep stromal opacities occur . Usual form cured in a week . But sometimes corneal opacities develop causing diminution of vision(DOV) for weeks to months. Typically, the first one eye is infected , after which the infection spreads to the other eye within 2 - 3 days. Both eyes are affected in 60% of cases. Treatment is mainly symptomatic constituting lubricants and astringents. Steroid - antibiotic drops used in cases with subepithelial infiltrates ; but in long standing cases, Tacrolimus, 1% and 2% CyclosporineA eye drops used. Recent studies show resolution of symptoms with monotherapy with Povidone -iodine 2%.

MATERIALS AND METHODS

This is an observational retrospective study of patients presenting with viral keratoconjunctivitis in outpatient department of Ophthalmology , between June 2018 - June 2019 of a tertiary care hospital , Ashwini Rural Medical college , Kumbhari . A total of 120 patients from all age-groups were included in the study. Cases were followed up for 3 months. Diagnosis was based on history and typical signs and symptoms. The following factors were taken into account during patient evaluation namely - age , gender , presenting symptoms like redness, watering , eyeache , haloes , pain, photophobia, discharge, pricking ; laterality and duration of symptoms. We also enquired regarding presence of fever, cold, malaise, and preauricular lymphadenopathy. On slit lamp examination, follicles, papillae, conjunctival haemorrhages, discharge, membrane in fornix, presence of spks, subepithelial infiltrates and stromal opacities were looked for . History of travel , contact, recurrence of symptoms , were also asked to the patient.

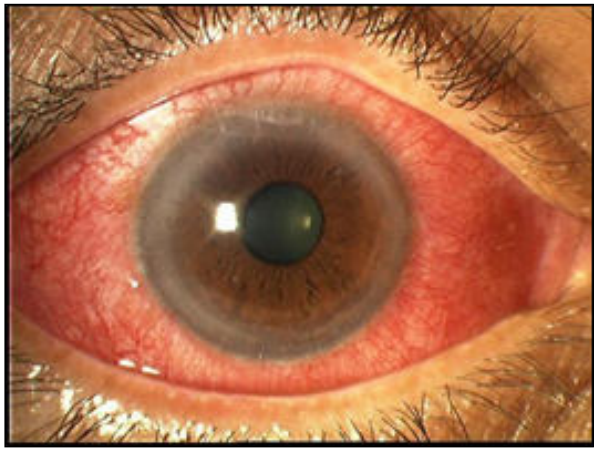

Figure 1: Acute Viral Conjunctivitis

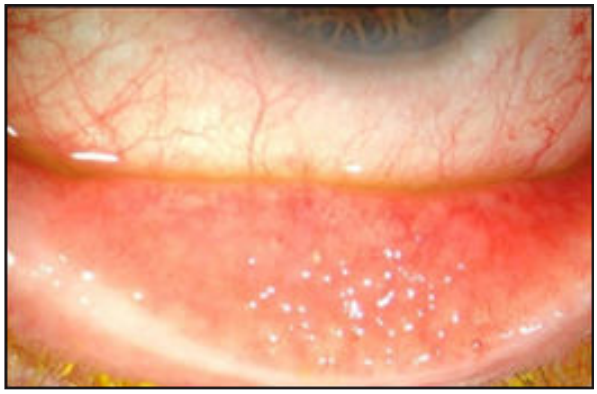

Figure 2 : Follicles In Viral Keratoconjunctivitis

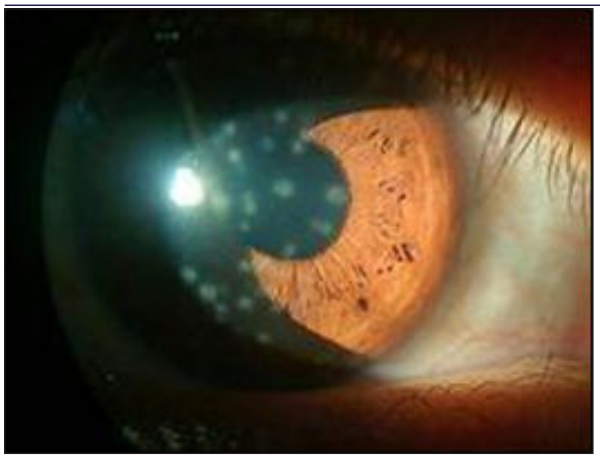

Figure 3: Superficial Punctate Keratitis

RESULTS

Total of 120 cases presented to us between June2018 - June 2019. Out of 120 cases, 65 (54.16 %) males and 55 (45.83%) females were affected .

As regards laterality , unilateral cases were 46 (38.33%) , bilaterality was seen in 74 (61.66%) cases and cases of unequal intensity were seen in 22 (18.33%) cases. Increased incidence of cases was seen between October to January with maximum number of cases seen in November.

Monthly Distribution Of Cases:

Month	2018(n=77)	2019(n=43)
Jan		12(10%)
Feb		8(6.66%)
March		5(4.16%)
April		7(5.83%)
May		5(4.16%)
June	8(6.66%)	6(5%)
July	5(4.16%)	
August	6(5%)	
September	8(6.66%)	
October	12(10%)	
November	21(17.5%)	
December	17(14.16%)	

Common Ophthalmic Symptoms And General Signs:

Symptoms	n	%
Redness	98	81.66%
Discharge	25	20.83%
Photophobia	70	58.33%
Pricking	54	45.00%
Watering	100	83.33%
Pain	82	68.33%
Haloes	38	31.66%
DOV	33	27.05%
Fever	40	33.33%
Cold	16	13.33%
Malaise	27	22.5%
Lymph node inv	38	31.66%

History of recurrence seen in 18 patients (15 %) , travel in 11 patients (9.16), and contact in 26 patients (21.66%) .

Local signs:

	n	%
Discharge	27	22.5%
Follicles	49	40.83%
Papillae	26	21.66%
Membranes	12	10%
SPKs	16	13.33%
Punctate(stromal)lesions	46	38.33%
Immune ring	3	2.5%
Nummular lesions	5	4.16%

CONCLUSIONS :

Out of a total 120 cases it was slightly more in males than females. Clustering of cases between October to January with a minimal peaking in November . The mean duration of illness was found to be 2 to 3 weeks with increased frequency of recurrences and chronicity of symptoms in 38% of patients upto 3 months and 13% of patients upto 6 to 8 months to 1 year. Most common symptoms were redness , eyeache ,photophobia , haloes and watering of eyes. 46.38% patients developed subepithelial , deep stromal opacities causing irregular astigmatism , photophobia and ocular surface symptoms. Symptoms took longer to get cured , with increased recurrence rate and more discomfort due to dryness and photophobia.

Viral keratoconjunctivitis can be a major issue as it affects healthcare workers and patients alike with ophthalmology clinics being most vulnerable . The cost of treatment can be approximated by the lost productivity of the patients , cost of visit to the doctor , the cost of antibiotic drops that are prescribed , but do not cure or curtail infection , time off taken by the caregiver from work and time lost from work/school by the patient. This causes a considerable economic and societal impact.

So ,due to the contagious nature ,there should be a particular emphasis on communication between interprofessional medical teams to enhance prompt and thorough delivery of care to the patients. It is important to educate patients about the nature of the disease , its treatment and prevention of its spread . Also it is crucial to prevent transmission in Ophthalmic clinics and in communities by the following measures :

- Early recognition of the cases.
- If there is suspicion of infection , isolate the patient of interest in an exam room as soon as possible to avoid being in the waiting room in contact with other patients and fomites common to all.
- Hand hygiene or gloving between encounters with suspect patients.
- Limit the number of entrances to the clinical area and isolation of the cases in a separate room , where drops are either single use or discarded at day's end. Avoid applanation tonometry in the affected cases. But if applanation urgently required in a patient, use disposable tonometer tips and single use eye drops.
- Frequent change of multi use eye drops should be done.
- Disinfect all areas of contact of the patient like the slit lamp (handles , chin rest , forehead rest), chair armrests , doorknobs, and counter surfaces with a germicide after the patient. The recommended contact time with a pre-moistened wipe containing quaternary ammonium and isopropyl alcohol is 2 minutes , then allowing to air-dry.
- Frequent handwashing with soap and water should be done before and after examining each patient . Since Adenoviruses are non enveloped and hydrophilic; alcohol based sanitisers are not effective; soap and water handwashing are the better choice for removal.
- Due to economic burden , work furlough for infected employees should be considered.

so understanding and managing viral keratoconjunctivitis remains important because of high prevalence and infectivity associated with significant morbidity and economic burden on the society.

REFERENCES :

1. Irene C Kuo . Adenovirus Keratoconjunctivitis : Diagnosis , Management , and Prevention. Current Ophthalmology Reports (2019) 7 : 118 – 127.
2. Duo Li , Jie – Nan Zhou , Hong Li , Cun - Ying He , Quing - Shan Dai , Xiang - Lan Li , Jian - Fang He , Ming - Bao Li , LI -Li Jiang , Yao - Yao Chen and Wen Xu . An outbreak of epidemic keratoconjunctivitis caused by human adenovirus type 8 in primary school . BMC Infectious Diseases (2019) 19 : 624 .
3. Das Anthony V , Basu , Sayan . Epidemic Keratoconjunctivitis in India Trend Analysis and Implications for Viral Outbreaks . Indian Journal of Ophthalmology : May 2020 - Volume 68 - Issue 5 - p 732 - 736 .Dongyu Guo, Jianhua Xia , Yang Wang, Xuhong Zhang, Ye Shen and Jian-Ping Tong . Relapsing viral keratoconjunctivitis in Covid- 19 : a case report. Virology Journal (2020) 17 : 97
4. A. Thakur , T. Chaudhary , A. Kulshreshtha and A. Gupta . Corneal sub-epithelial Infiltrates. QJM: An International Journal of Medicine, 2020 , 575
5. Koki Aoki , Michio Kato, Hideo Ohtsuka, Keizo Ishii , Naoki Nakazono , and Harumi Sawada. Clinical and aetiological study of adenoviral conjunctivitistypes 4 and 19 infections. British Journal of Ophthalmology , 66, 776-780.
6. Solano D , Fu L , Czyz CN. Viral Conjunctivitis. [Updated 2021 Sep 22]. In Statpearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-.
7. Kashinatha M . Shenoy . Incidence of Adenoviral keratoconjunctivitis In Kerala, India. Physician's Academy April 2012 vol 6 no 4.
8. Elwaan Shaaban(2020) Modified Treatment for Epidemic Keratoconjunctivitis. J Ophthalmic Clinic Res 7:070.
9. Danesh - Meyer HV , McGhee CNJ . Implications of Covid-19 for Ophthalmologists. Am J Ophthalmol. 2021 Mar;223:108-118. [PMC free article] [Pubmed]
10. Marinos E , Cabrera-Aguas M , Watson SL. Viral conjunctivitis: a retrospective study in an Australian hospital . Cont Lens Anterior Eye. 2019 Dec;42(6):679-684.[Pubmed]
11. Jhanji V, Chan TC, Li EY, Agarwal K , Vajpayee RB. Adenoviral conjunctivitis. Surv Ophthalmol. 2015