

# International Journal of Medical Ophthalmology



E-ISSN: 2663-8274  
P-ISSN: 2663-8266  
[www.opthalmoljournal.com](http://www.opthalmoljournal.com)  
IJMO 2019; 1(1): 36-38  
Received: 16-05-2018  
Accepted: 04-07-2018

**Roohi Sharma**  
Demonstrator, Department of  
Pharmacology and  
Therapeutics, Government  
Medical College, Jammu,  
Jammu and Kashmir, India

**Ujala Sharma**  
Post Graduate, Department of  
Ophthalmology, Government  
Medical College, Jammu,  
Jammu and Kashmir, India

**Brij Mohan Gupta**  
Professor, Department of  
Pharmacology and  
Therapeutics, Government  
Medical College, Jammu,  
Jammu and Kashmir, India

**Corresponding Author:**  
**Ujala Sharma**  
Post Graduate, Department of  
Ophthalmology, Government  
Medical College, Jammu,  
Jammu and Kashmir, India

## Prednisolone acetate and sodium diclofenac along with ciprofloxacin in cases of viral conjunctivitis

**Roohi Sharma, Ujala Sharma and Brij Mohan Gupta**

DOI: <https://doi.org/10.33545/26638266.2019.v1.i1a.52>

### Abstract

**Background:** Viral conjunctivitis is the most common cause of infectious conjunctivitis both overall and in the adult population and is more prevalent in summer. The present study was conducted to compare prednisolone acetate and sodium diclofenac along with ciprofloxacin in cases of viral conjunctivitis.

**Materials and Methods:** 40 patients diagnosed with acute conjunctivitis were divided into 2 groups. Group I received 1% prednisolone acetate + ciprofloxacin (0.3%) and group II patients received sodium diclofenac (0.1%) + ciprofloxacin (0.3%). Signs and symptoms such as lacrimation, burning, photophobia, etc. were recorded at baseline and on the first, third, fifth and seventh days.

**Results:** There were 8 males and 12 females in group I and 11 males and 12 females in group II. The mean of symptoms in group I was 13.6 and in group II was 12.1 in group II at 1<sup>st</sup> day, 6.4 and 8.6 in group I and group II on 3<sup>rd</sup> day and 2.8 and 7.4 in group I and II respectively on day 5<sup>th</sup> and 0.7 and 5.6 in group I and II respectively on 7<sup>th</sup> day. The difference was significant ( $P < 0.05$ ).

**Conclusion:** The combination of prednisolone acetate and ciprofloxacin were effective in relieving symptoms in patients with viral conjunctivitis as compared to combination of sodium diclofenac and ciprofloxacin.

**Keywords:** Ciprofloxacin, prednisolone acetate, viral conjunctivitis

### Introduction

Conjunctivitis affects many people and imposes economic and social burdens. It is estimated that acute conjunctivitis affects 6 million people annually in the United States. The prevalence of conjunctivitis varies according to the underlying cause, which may be influenced by the patient's age, as well as the season of the year [1]. Viral conjunctivitis is the most common cause of infectious conjunctivitis both overall and in the adult population and is more prevalent in summer [2]. Bacterial conjunctivitis is the second most common cause and is responsible for the majority (50%-75%) of cases in children; it is observed more frequently from December through April. Allergic conjunctivitis is the most frequent cause, affecting 15% to 40% of the population, and is observed more frequently in spring and summer [3]. Common viral agents include adenovirus, herpes simplex, herpes zoster, and enterovirus. Allergic conjunctivitis encompasses seasonal allergic conjunctivitis, perennial allergic conjunctivitis, vernal keratoconjunctivitis (VKC), atopic keratoconjunctivitis (AKC), and giant papillary conjunctivitis [4]. Conjunctivitis can be further divided into acute or chronic types. Acute conjunctivitis is characterized by onset within 3 to 4 weeks of the presentation and chronic is defined as more than 4 weeks in duration. Acute conjunctivitis is usually a self-limiting condition; however, it is important to rule out other sight-threatening red eye diseases [5]. Viral conjunctivitis is an extremely common cause of conjunctivitis, with estimates as high as 80% of all causes of acute conjunctivitis. As many as 90% of these cases of viral conjunctivitis are thought to be caused by human adenovirus, which is known to cause 2 distinct syndromes: epidemic keratoconjunctivitis and pharyngoconjunctival fever [6]. The present study was conducted to compare prednisolone acetate and sodium diclofenac along with ciprofloxacin in cases of viral conjunctivitis.

### Materials and Methods

The present study was conducted among 40 patients diagnosed with acute conjunctivitis of both genders. All were informed regarding the study and their consent was obtained.

Data such as name, age, gender etc. was recorded. A slit lamp anterior segment examination was performed in all patients. Patients were divided into 2 groups. Group I received 1% prednisolone acetate + ciprofloxacin (0.3%) and group II patients received sodium diclofenac (0.1%) + ciprofloxacin (0.3%). Patients received medication 6/6 hours daily. Signs and symptoms such as lacrimation, burning, photophobia, etc. were recorded at baseline and on the first, third, fifth and seventh days. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

**Results**

**Table 1:** Distribution of patients

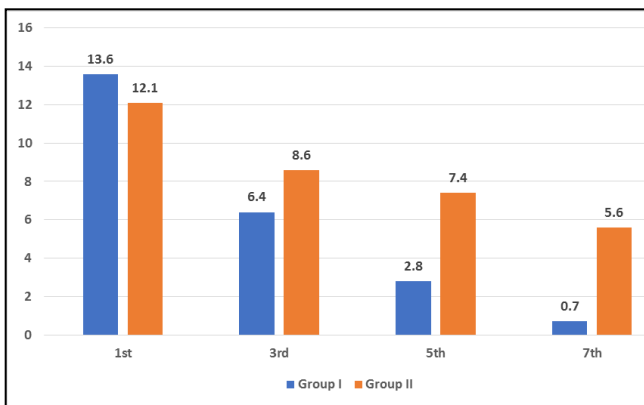
Groups	Group I	Group II
Drug	1% prednisolone acetate + 0.3% ciprofloxacin	0.1% sodium diclofenac + 0.3% ciprofloxacin
M:F	8:12	11:9

Table 1 shows that there were 8 males and 12 females in group I and 11 males and 12 females in group II.

**Table 2:** Comparison of means of symptoms between all groups

Duration	Group I	Group II	P value
1 <sup>st</sup>	13.6	12.1	0.91
3 <sup>rd</sup>	6.4	8.6	0.05
5 <sup>th</sup>	2.8	7.4	0.01
7 <sup>th</sup>	0.7	5.6	0.001

Table 2, Figure I shows that mean of symptoms in group I was 13.6 and in group II was 12.1 in group II at 1<sup>st</sup> day, 6.4 and 8.6 in group I and group II on 3<sup>rd</sup> day and 2.8 and 7.4 in group I and II respectively on day 5<sup>th</sup> and 0.7 and 5.6 in group I and II respectively on 7<sup>th</sup> day. The difference was significant ( $P < 0.05$ ).



**Fig 1:** Comparison of means of symptoms between all groups

**Table 3:** Assessment of levels of inflammatory markers

Inflammatory markers	Group I	Group II	P value
IL- 10	8.1	25.2	0.05
IL- 13	17.6	201.3	0.02
IL- 1a	11.2	54.2	0.01
IL- 6	21.5	74.6	0.001
IL- 8	436.2	1245.6	0.001

Table 3, figure II shows that mean level of IL- 10 was 8.1 and 25.2 in group I and II respectively, IL- 13 was 17.6 and

201.3, IL- 1a was 11.2 and 54.2, IL- 6 was 21.5 and 74.6 and IL- 8 was 436.2 and 1245.6 respectively in group I and II respectively.

**Discussion**

Viral conjunctivitis is highly contagious. The virus spreads through direct contact via contaminated fingers, medical instruments, swimming pool water, or personal items; in one study, 46% of infected people had positive cultures grown from swabs of their hands [7]. Because of the high rates of transmission, hand washing, strict instrument disinfection, and isolation of the infected patients from the rest of the clinic has been advocated. Incubation and communicability are estimated to be 5 to 12 days and 10 to 14 days, respectively [8]. Conjunctivitis can be divided into infectious and non-infectious causes. Viruses and bacteria are the most common infectious causes. Non-infectious conjunctivitis includes allergic, toxic, and cicatricial conjunctivitis, as well as inflammation secondary to immune-mediated diseases and neoplastic processes [9]. The disease can also be classified into acute, hyperacute, and chronic according to the mode of onset and the severity of the clinical response. Furthermore, it can be either primary or secondary to systemic diseases such as gonorrhea, chlamydia, graft-vs-host disease, and Reiter syndrome, in which case systemic treatment is warranted [10]. The present study was conducted to compare prednisolone acetate and sodium diclofenac along with ciprofloxacin in cases of viral conjunctivitis.

In present study, there were 8 males and 12 females in group I and 11 males and 12 females in group II. Santiago et al [11] evaluated the effects of prednisolone against sodium diclofenac both with ciprofloxacin compared to artificial tears on the symptoms and signs of acute viral conjunctivitis. Study included 37 patients diagnosed with acute conjunctivitis and distributed by three groups: A (1% prednisolone acetate + ciprofloxacin (0.3%)); B (Sodium diclofenac (0.1%) + ciprofloxacin (0.3%)) and C (artificial tears + ciprofloxacin (0.3%)). All three groups demonstrated an improvement in the signs and symptoms of conjunctivitis in their follow-up visits. There was no significant difference in symptom and sign scores between Group A and B and B and C in the study visits ( $P > 0.05$ ). However, the comparison between groups A and C showed a clinical trend ( $p = 0.05$ ) on third evaluation suggesting better clinical action using the corticosteroids.

We found that mean of symptoms in group I was 13.6 and in group II was 12.1 in group II at 1st day, 6.4 and 8.6 in group I and group II on 3rd day and 2.8 and 7.4 in group I and II respectively on day 5th and 0.7 and 5.6 in group I and II respectively on 7th day. The mean level of IL- 10 was 8.1 and 25.2 in group I and II respectively, IL- 13 was 17.6 and 201.3, IL- 1a was 11.2 and 54.2, IL- 6 was 21.5 and 74.6 and IL- 8 was 436.2 and 1245.6 respectively in group I and II respectively. Cheema et al. [12] evaluated efficacy safety tolerability of supratarsal injection of triamcinolone and comparison with topical steroids and olopatadine vernal Keratoconjunctivitis. Thirty patients of vernal kerato conjunctivitis were included in study which was divided into two groups of each consist of 15 patients; one was studied by using topical steroids with olopatadine topical eye drops. while other group was observed by administration of supratarsal injection of triamcinolone patients evaluation was done 2nd, 7th and 14th days and followed by three months for different signs and symptoms

like photophobia burning sensations, itching, hyperemia conjunctival papillary sizes and corneal shield ulcers. The patients of VKC having cobblestone papillae and corneal shield ulcers treated with supratarsal injection of triamcinolone resolved 50% in size after first results attained with the supratarsal injection of triamcinolone both signs and symptoms were dramatic and prompted patients experienced relief within 2 to 5 days. Furthermore in 14 or 15 patients (93.33%) complete resolution of cobblestone papillae after supratarsal injection of triamcinolone injection in 5-14 days. Similarly, limbal oedema and shield ulcers resolved completely and there was no increase in intra ocular pressure in any of the patient's upto 3 months follow up injection. Patients on topical steroids with olopatadine clinical improvement occurred in 11 out of 15 patients (73.33%) three out of fifteen patients (20%) on topical steroids developed mild increase in IOP.

### Conclusion

Present study concluded that combination of prednisolone acetate and ciprofloxacin were effective in relieving symptoms in patients with viral conjunctivitis as compared to combination of sodium diclofenac and ciprofloxacin.

### References

1. Leonardi A. Management of Vernal Keratoconjunctivitis. *Ophthalmol Ther* 2013;2(2):73-88.
2. Théra JP, Hughes D, Tinley C *et al.* Magnitude of vernal kerato conjunctivitis among school children in Koulikori, Sch. *J App. Med. Sci* 2016;4(1C):180-182.
3. Zicari AM, Nebbioso M, Lollobrigida V *et al.* Vernal keratoconjunctivitis: atopy and autoimmunity. *Eur Rev Med Pharmacol Sci.* 2013;17(10):1419-23.
4. Zicari AM, Nebbioso M, Zicari A *et al.* Serum levels of IL17 in patients with vernal Keratoconjunctivitis: a preliminary report. *Eur Rev Med Pharmacol Sci.* 2013;17(9):1242-4.
5. Pokharel S, Shah DN, Choudhary M. Vernal kerato conjunctivitis: Modes of presentation in Nepalese population. *Kathmandu University Medical Journal* 2007;5(4):526-530.
6. Bonini S, Coassin M, Aronni S, Lambiase. Vernal kerato conjunctivitis. *Eye* 2004;18(4):345-351.
7. Leonardi A, Secchi AG; Vernal kerato conjunctivitis. *Int. Ophthalmol. Clin* 2003;43:41-58.
8. Iqbal A, Jan S, Babar TF, Khan MD. Corneal complications of vernal catarrh. *J Coll. Physicians Surg. Pak* 2003;13(7):394-397.
9. Saleh AA, Mahfouth AB. Ocular complications of severe vernal kerato conjunctivitis (VKC) in Yemen. *Saudi J Ophthalmol* 2011;25:291-294.
10. Bremond-Gignac D, Donadieu A, Leonardi A *et al.* Prevalence of vernal keratoconjunctivitis: a rare disease? *Br. J. Ophthalmol* 2008;92:1097-1102.
11. Santiago LA, Silva JM, Azevedo OG, Vasconcelos PR. Comparative study on the efficacy of non-steroidal, steroid and non-use of anti-inflammatory in the treatment of acute epidemic conjunctivitis. *Acta Cirurgica Brasileira*, 2019, 34(12).
12. Cheema MM, Majeed S. Vernal Kerato Conjunctivitis Comparative Study of Different Trends in its Management. *PJMHS* 2019;13:276-278.