



## Role of Depot Steroid in Refractory Vernal Keratoconjunctivitis

### KEYWORDS

VKC, triamcinolone acetonide.

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**ABSTRACT** Vernal Keratoconjunctivitis cases are often resistant to conventional treatment. We aimed to access to effect of depot steroid (supratarsal injection of triamcinolone acetonide) in these patients. Method: 43 patients (86 eyes) with severe Vernal Keratoconjunctivitis are resistant to conventional method of treatment were selected and underwent injection of 0.5 ml of triamcinolone acetonide in supratarsal area in conjunctiva side of upper lid and were followed up for 24 months. Relief of symptoms like burning, itching, lacrimation and photophobia was dramatically seen in all patients in first few days. Size of giant papillae, thickening of limbus, vascularisation of cornea decreased in first month. Recurrence of disease (pannus) was seen in four patient (14%) after one month. Complications noticed during the follow up was negligible. All patients tolerated the treatment well. Rapid and dramatic symptomatic and clinical response and lack of complication suggests that supratarsal triamcinolone acetonide (depot steroid) could be a therapeutic approach for refractory Vernal Keratoconjunctivitis

### INTRODUCTION :

Vernal Keratoconjunctivitis is bilateral, recurrent, interstitial inflammation of the conjunctiva that occurs in warm weather in young patient predisposed to atopy. 80% of patients are below 14 years of age. Boys are usually more affected at 2:1 ratio. About 1-2.5% of ophthalmology visits in out patient clinic have Vernal Keratoconjunctivitis. The chief symptoms of these disease include severe itching, photophobia, redness, tearing, and tenaceous discharge. The clinical signs in conjunctiva include cobblestone papillae in the upper tarsal conjunctiva, limbal conjunctival thickening with gelatinous nodules and Tanta's dots. Corneal involvement can occur in the form of shield ulcer and pannus. Eyes with refractory and frequently recurrent Vernal Keratoconjunctivitis often demonstrate corneal shield ulcer, vascularisation, plaque formation, corneal opacity or signs of corticosteroid abuse. Recently a number of new therapeutic agents have been attempted in refractory Vernal Keratoconjunctivitis. These include topical NSAIDs, topical mast cell stabilisers (Nedocromil, Lodoxamide), topical immune modulators (cyclosporine), topical anti histamines (Levocabastine) and ganglioside derivatives (miprogoside) (3). However most of the newer treatment modalities have been found to be relatively ineffective. So because of ineffective conventional therapeutic methods, absence of adequate studies on the effectiveness of intermediate acting steroids (triamcinolone acetonide) in the treatment of Vernal Keratoconjunctivitis and complication of long term steroids (4), we made a study to evaluate and assess the effect of supratarsal injection of triamcinolone acetonide depot in these resistant cases.

### MATERIALS AND METHODS

Study periods : 2011-2013 in ASRAM Medical college, Eye OPD, 86 eyes of 43 patients with severe refractory VKC have been included in our study. 0.5ml (20mg) of triamcinolone acetonide was given supra-tarsally with a 26 G needle after topical application of xylocaine (4%) in one eye & topical steroid in other eye in all the 43 cases. Wash off period was kept 2 weeks. Before injection of drug, infect cases (corneal ulcer & blepharconjunctivitis) were properly treated. Informed consent was taken after complete description of the procedure and its purpose to the patient & their parents. One drop of Xylocaine (4%) instilled in the eye of the patient, in supine position. One minute later, the upper lid was gently everted &

with a cotton-tipped applicator soaked with xylocaine, more sedation was induced in palpebral conjunctiva especially in upper border of superior tarsus. Then 0.5ml of triamcinolone acetonide (20 mg of drug) was injected in potential space between conjunctiva and Muller's muscle, 0.5-1mm superior to upper edge of tarsus with 26G needle. Lid returned to normal position and all topical medication discontinued in injected eye. Patients were followed up in 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> week after treatment and then 3<sup>rd</sup>, 6<sup>th</sup> and 12<sup>th</sup> months. The improvement in signs and symptoms were noted and results recorded with 95% confidence interval.

### TECHNIQUE OF SUPRATARSAL INJECTION



FIG.1



FIG.2



FIG.3

**EXCLUSION CRITERIA**

1. Unilateral cases
2. No consent
3. Poor compliance
4. Active infection
5. To rule out systemic infection due to diabetes mellitus and tuberculosis

**RESULTS**

86 eyes of 43 patients were included in our study during the period of 2011-2013.They were treated with an intermediate acting corticosteroids, triamcinolone acetonide depot in one eye and the other eye receive topical steroids.

Male : 30 patients(60 eyes)-69.77% Female : 13 patients(26 eyes)-30.23%

Age group in years	Number of patients	% of patients
0-10	10	23.25
11-20	25	59.13
21-30	08	18.60

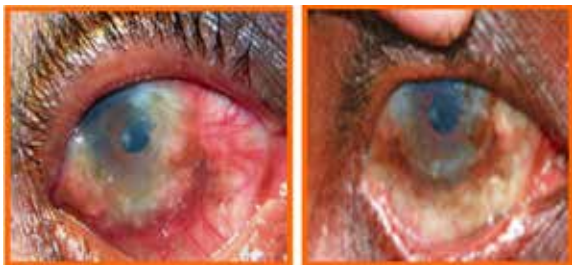


Fig .4 Before injection Fig .5 Two weeks after injection

**SEVERE LIMBAL VKC**

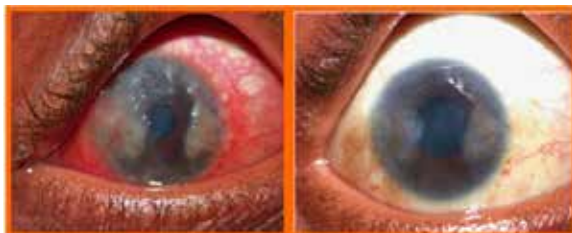


Fig .6 BEFORE TREATMENT Fig .7 AFTER TREATMENT

**Table 1: Frequency of symptoms before & after 2 weeks of treatment**

Symptoms	Total no of eyes	% of eyes	Relief of symptom in %	
			With depot steroid injection	With topical steroids
Itching	86	100	98	72
Lacrimation	72	83.72	96	68
Discharge	64	74.41	89	37
Photophobia	48	55.81	81	46
Mild pain	60	69.76	98	76

**Table 2: Frequency of signs before & after 4 weeks treatment**

Signs	Total no of eyes	% of eyes	Relief of symptoms	
			With depot steroid injection	With topical steroids
Hyperemia of conjunctiva	86	100	100	84
Shield ulcer	06	6.97	96	23
Giant papillae	86	100	99	34
Thickening at limbus	56	65.12	98	06
Keratitis	64	74.42	95	51

Most of the symptom(after 2 weeks of treatment) and maximum number of signs (after 4 weeks of treatment) were improved dramatically. Eyes treated with topical steroids did not show much improvement. So they were again treated with depot steroid after 4 weeks of follow up, few complications were seen in some patients which was negligible.

**Table 3:**

Complications	No. of Cases	Treatment
Increase in IOP	5	Topical Timolol(0.5%)
Pigmentation of lid	3	-
Sub-conj hemorrhage	3	-
Infection	4	Antibiotic eye drops
PSC	2	YAG-Laser

Recurrence of signs and symptoms were evident in 6 patients(12.5%) after 24 months of follow up.

**DISCUSSION**

Treatment of severe VKC is a difficult problem for the patient and the physician. Due to debilitating symptoms & signs of VKC,patient need an effective treatment. Previously severe cases of VKC were treated with cryotherapy or surgical excision of giant papillae that resulted in severe scarring and malfunction of lid. Current medical treatment such as artificial tears, topical Antihistaminics, Mast cell stabilizers or topical steroids are not fully effective(5). More recently topical cyclosporines(2) were used but after cessation of treatment symptoms and sign recurred. This study showed that triamcinolone acetonide depot injection in supratarsal area can relieve signs and symptoms in 100% patients but prevent recurrence of VKC only in 87.5% of cases (P<0.05)

**CONCLUSION**

The use of supratarsal injection of triamcinolone acetonide depot in refractory VKC cases has shown dramatic results. The procedure is usually well tolerated even in young children; it provides prompt symptomatic relief in all patients and has low recurrence rate(12.5%).The high rate of clinical response with lack of complication and yet easy method leads us to suggest that these therapeutic modality is an effective and safe method for treatment of refractory VKC and improve quality of life.

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