Research Article

Study of effect of 2% cromolyn sodium in Vernal keratoconjunctivitis

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Abstract

Vernal keratoconjunctivitis is an ocular allergic disease predominantly observed in children and young adults living in warm climates. Specific allergens and non- specific stimuli cause mast cell degranulation and, probably, a lymphocyte mediated response. Disodium cromoglycate acts by blocking calcium channels in the mast cell membranes, thus prevents mast cell rupture and release of histamine and other autacoids. Present study was undertaken to study the effect of 2% cromolyn sodium in vernal kerato-conjunctivitis patients from a tertiary care centre in Aurangabad district of Maharashtra, India. Thirty one patients with clinically diagnosed bilateral vernal catarrh were included in the study. Concomitant use of inhaled or intranasal cromolyn sodium, contact lenses, ocular medications including steroids, antihistamines, NSAID, artificial tears was not allowed during the 6 week trial. The effect of 2 drops of 2% disodium cromoglycate eye drops 4 times a day in both the eyes for a period of 6 weeks was studied. Presence of symptoms and signs of vernal kerato-conjunctivitis was noted and described before and after treatment. Watering, Itching, Conjunctival injection, Conjunctival oedema and papillary hypertrophy reduced after 6 weeks in around 55%, 77%, 45%, 50% and 52% cases. There was a decline in limbal injection, limbal oedema, limbal papillae, tranta's dots in approximately 33%, 33%, 43% and 44% cases respectively. An improvement of 46% was seen in superficial punctate keratitis whereas the presence of eosinophils in conjunctival scrapings declined by around 79% after treatment. Thus, 2% sodium cromoglycate was found to be an effective therapy in the treatment of vernal kerato-conjunctivitis.

Keywords: Cromolyn Sodium, Vernal keratoconjunctivitis

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INTRODUCTION

Vernal keratoconjunctivitis is an ocular allergic disease predominantly observed in children and young adults living in warm climates. [1] Specific allergens and non-specific stimuli cause mast cell degranulation and, probably, a lymphocyte mediated response. [2] The treatment of vernal keratoconjunctivitis remains problematic. Corticosteroids are useful but on a long term basis their side effects are well known. In atopy there is an IgE mediated mast cell degradation, resulting in release of histamine which is responsible for various symptoms, like itching, redness etc. [3] Disodium cromoglycate a membrane stabilizer acts by blocking calcium channels in the mast cell membranes, thus prevents mast cell rupture and release of histamine and other autacoids, in IgE mediated immune reactions [4,5]. Present study was undertaken to study the effect of 2% cromolyn sodium in vernal kerato-conjunctivitis patients from a tertiary care centre in Aurangabad district of Maharashtra, India.

METHODS

Study was carried out at the Department of Ophthalmology, Govt Medical College, Aurangabad. Thirty one patients with clinically diagnosed bilateral vernal catarrh were included in the study. Patients with conjunctivitis were excluded from this study based on culture reports. Concomitant use of inhaled or intranasal cromolyn sodium, contact lenses, ocular medications including steroids, antihistamines, NSAID, artificial tears was not allowed during the 6 week trial. Informed consent was taken from each of the participants as per

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guidelines. The effect of 2 drops of 2% disodium cromoglycate eye drops 4 times a day in both the eyes for a period of 6 weeks was studied. The preparation used had the following composition: Sodium Cromoglycate IP 2% w/v, Benzalkonium Chloride USP 0.01% w/v, as preservative and sterile buffered aqueous solution QS. At the initial visit, patients fulfilling the inclusion criteria were examined in detail and started on treatment. Age and gender of the participants was recorded. Presence of symptoms of Vernal kerato-conjunctivitis i.e. redness, itching and watering were described before and after the treatment. Similarly, the presence of signs of vernal kerato-conjunctivitis like hyperaemia, limbal papillae, tranta's dots, limbal oedema and punctate keratitis were examined and described before and after the treatment. Conjunctival swabs and scrapings were taken for staining and culture to rule out presence of microorganisms as patients with bacterial conjunctivitis were excluded from the study. Giemsa staining of conjunctival scrapings was done to detect the presence of eosinophils before and after the treatment.

RESULTS

Out of 31 patients, there were 8 males and 3 females less than 10 years of age. Between the age of 10 and 20 years, there were 10 males and 4 females. Above the age of 20 years, there were 5 males and a single female. Watering was present in 29 patients before the treatment whereas it was noted in only 13 patients after treatment. Thus, there was a decrease of about 55% with regard to the symptom of watering. Itching was present before treatment in 30 patients and after treatment in 7 patients showing improvement in around 77% patients. Conjunctival injection was present in all the patients initially but at the end of 6 weeks it was found in only 14 patients showing around 45% decline. Conjunctival oedema was present in 28 patients before and 14 patients afterwards with improvement in 50% cases. Papillary hypertrophy was found in all cases initially but was seen in 15 patients only after treatment. It showed reduction in nearly 52% cases. The response to limbal signs was also significant. Limbal injection, limbal oedema, limbal papillae, tranta's dots were present in 27, 24, 30 and 16 patients respectively before treatment which reduced to 18, 16, 17 and 9 patients respectively after treatment. Thus there was a decline in limbal injection, limbal oedema, limbal papillae, tranta's dots in approximately 33%, 33%, 43% and 44% cases respectively with topical application of 2% sodium cromoglycate for 6 weeks. 13 patients had superficial punctate keratitis at the start of trial. After 6 weeks it was noted in 7 patients. Thus, an improvement of 46% was seen. Eosinophils in conjunctival scrapings were present in 28 patients before treatment. At the end of 6 weeks, eosinophils could be detected in only 6 patients showing an improvement of about 79% which is significant.

DISCUSSION

We observed that 2% Sodium Cromoglycate produced significant reduction in symptoms of vernal keratoconjunctivitis. There have been conflicting results regarding efficacy of 2% Sodium Cromoglycate in vernal keratoconjunctivitis. Studies by Easty *et al* [6], and Jay[7] have found that the drug is useful in the patients of ocular atopy. Similarly, study by Tabbara [8] has shown that 2% Sodium Cromoglycate is beneficial in treatment of Limbal variety of vernal keratoconjunctivitis. 2% Sodium Cromoglycate has been shown to be effective in the long term management of vernal keratoconjunctivitis, [9] but often moderate to severe cases need additional therapy with steroids or the alternative, topical treatment with cyclosporin A. [10] However, there are reports of the drug being not effective as concluded in the studies done by Hyams *et al* [11] and Bansal *et al* [12]. Limitations of our study include small sample size and lack of control group. Further studies with double blind randomization design in a larger sample over longer duration in diverse geographical and ethnic background population need to be done to ascertain the role of 2% Sodium Cromoglycate in vernal keratoconjunctivitis.

REFERENCES

1. Allansmith MR(1982) The eye and immunology . (CV Mosby, St Louis)
2. Trocme SD, Aldave AJ(1994) The eye and the eosinophil. Surv Ophthalmol 39:241–252.
3. Vajpayee R, Kumar S, Sharma M. Role of disodium cromoglycate in vernal conjunctivitis. Indian J Ophthalmol 1985;33:151-3
4. Altounyn, R.E.C. 1967, ACTA. Allergy (kbh); 51:667.
5. Cox, J.S.G., Beach. JE, Blair, AM, Clark A.J,. Kug J , and Lee J.B. *et al* , 1970, Adv. Drug Res J ; 115: 196.
6. Easty, D.L., Rice, N S C. and Jones B.R.: 1972, clin, Allergy; 2 : 99
7. Jay J.L, 1981, Brit. J. Ophthalmol; 65; 335.
8. Tabbara, K. F. and Arafat N T., 1977, Arch Ophthalmol; 95; 2184
9. Foster CS, Duncan J(1980) Randomized clinical trial of topically administered cromolyn sodium for vernal keratoconjunctivitis. Am J Ophthalmol 90:175–181.
10. Secchi AG, Tognon MS, Leonardi A(1990) Topical use of cyclosporine in the treatment of vernal keratoconjunctivitis. Am J Ophthalmol 110:137–142
11. Hyams S.W, Bralik M.S. and Neumann E. 1975, J. Paed. Ophthalmol ; 12: 116
12. Bansal, S.L, Dhir S.P. and Jain I.S , 1980, Ind. J. Ophthalmol; 28

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