SHORT COMMUNICATION

THE ROLE OF ASPIRIN IN VERNAL KERATOCONJUNCTIVITIS

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Vernal (spring related) keratoconjunctivitis (VKC) is a bilateral recurrent inflammation of the conjunctiva, which tends to occur in children during spring and summer months and goes into remission during the cooler season.1 The disease occurs in the warm, temperate zone affecting the boys twice as frequent as girls. The onset is around 4-5 years of age, rarely persisting after 25 years of age and peak occurrence at 11-13 years.2 A family history of atopy is common. The disease occurs in the palpebral form marked by cobble-stone large papillae on the tarsal conjunctiva; the limbic form characterized by broad, thickened, gelatinous opacification of the superior limbus and the presence of white chalky Horner-Trantas dots while the mixed variety has the features of both. Conjugal involvement occurring in about 50% of the cases, is manifested as superficial pannus, punctate epithelial erosions, small grey plaques of necrotizing epithelium and vernal ulcers with prominent symptoms being itching, tearing, photophobia, mild ptosis, and thick tropy mucoid discharge.

Histopathological studies of conjunctival tissue show a massive connective tissue hyperplasia and CD4 T cell lymphocytes and plasma cells together with mast cells and eosinophils in the epithelium and mast cells in the substantia propria. Mast cells release histamine which causes hyperemia, edema and production of mucus and prostaglandins, especially prostaglandin D2. Eosinophils release cationic proteins including major basic protein that cause corneal epithelial erosions. When mucus and debris attach to these erosions, plaques are formed.

The treatment of VKC is quite prolonged and demands good compliance. Presently mast cell stabilizers as cromones (2-4% sodium cromoglicate or 0.1 nedocromil) are used in milder form of disease. In severe disease, topical corticosteroids have to be added. Their side effects include glaucoma, cataract and infections. Topical cyclosporin has been tried in intractable cases. Newer antihistamines, such as 0.05% emadastine difumarate, are now being used for quick relief of symptoms. In severe disease, aspirin has been tried orally along with 2-4% topical sodium cromoglicate at different centers in the world with promising results.3,4,5

VKC is quite common in Pakistan. I have tried oral aspirin in severe VKC cases and found it very useful and my observations are hereby presented.

A total of 95 patients of both sexes, 5 to 16 years of age, suffering from severe VKC of at least one-year duration were included in this study. All were examined on slit lamp. Ten patients were of limbal type VKC, 18 patients had the palpebral form while the rest of the patients (67) were of mixed variety. Six patients had corneal involvement out of which one had a typical vernal corneal ulcer (shallow, horizontally oval, non-vascularized and lying in superior cornea). Out of the other patients with corneal involvement 4 showed superficial pannus and one had a corneal plaque. All these findings were critically noted and recorded for future reference. Blood examination of all these patients showed mild eosinophilia (6-11 eosinophils per high magnification field). The patients having non-specific chronic conjunctivitis, seasonal and atopic allergic conjunctivitis, perennial allergic conjunctivitis, giant papillary conjunctivitis due to prolonged use of contact lenses, follicular conjunctivitis and having any history of hypersensitivity to aspirin or bleeding disorder were excluded from this study.

These patients were randomly divided into three groups; group I, group II, and group III, comprising 32, 32 and 31 patients respectively. The patient with vernal ulcer was placed in group II. In this patient, corneal scrapings from the ulcer edge as well as culture studies revealed no organism.

In group I, patients were given topical preparations of 2% cromolyn sodium and 2% fluorometholone, to be instilled thrice a day. In group II, oral aspirin was added to the above regime. 2% fluorometholone was tapered off over two weeks, while aspirin was continued for four to eight weeks and 2% cromolyn sodium continued for the rest of the period. Group III, received a placebo. In the patient with vernal ulcer, a prophylactic antibiotic cover with topical preparation of ciprofloxacin was given for initial two weeks. The dosage for aspirin was adjusted at the rate of 25 mg per kg. of body weight. Informed consent was taken from all the patients regarding the study program. Regular follow-up visits were arranged weekly for the first two weeks, fortnightly for two months and then monthly for six months to one year. The patients were thoroughly examined on the slit lamp and findings recorded. Intra ocular pressure was recorded on Goldmann applanation tonometer.

On first assessment after one week group I showed 40% reduction in symptoms. Group II patients showed significant (70%) reduction in itching, laceration, limbal edema and had improved photophobia with reduction in size of the palpebral lesions and corneal staining. After second week of therapy, group II patients were still better showing an overall reduction in symptoms of about 85%, while group I showed a reduction of about 75% in symptoms. At the third and fourth visits i.e. four and six weeks after starting the treatment, groups I and II showed 90-95% and 95-98% reduction in their symptoms respectively. The patient with the vernal ulcer showed negative staining with fluorescein despite some residual opacification. The pattern of improvement in group III was not different from that in group I; improvement in signs was comparable to the symptoms in all the three groups. It is evident that oral therapy with aspirin had a marked effect in relieving symptoms and improving signs in the patients of group II and they became comfortable much earlier than the patients of

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groups I and III with a topical corticosteroid therapy of much shorter duration (Figure 1).

VKC is basically an allergic disorder in which IgE (humoral) and cell mediated immune mechanisms play a vital role. Corticosteroids inhibit the production of prostaglandins by inhibiting the conversion of phospholipids to arachidonate in the initial stage by inducing an inhibitory lipocortin and also inhibiting the induction of cyclooxygenase which is vital for conversion of arachidonate to prostaglandin in the final stage. Aspirin also acts at this final stage and inhibits prostaglandin production. It can reduce the duration of topical corticosteroid use or even replace it when combined with topical sodium cromoglycate. Therefore, its use is recommended especially in the first four to eight weeks along with 2% sodium cromoglycate, which can alone be continued later on, while topical corticosteroids can be added in severe cases only in the initial one to two weeks to reduce discomfort and make the patients more compliant. Contraindication like hypersensitivity to aspirin, bleeding disorder or peptic ulcer (especially in adult patients) should be ruled out before using aspirin.

REFERENCES.

Figure 1: A comparison of reduction in symptoms among group I, II and III.