

Comparison of efficacy of olopatadine hydrochloride 0.1% and azelastine hydrochloride 0.05% eye drops for treatment of allergic conjunctivitis in rural South India

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Abstract

Introduction: Conjunctival inflammation due to allergy is known as allergic conjunctivitis. Common ocular symptoms may be itching, swelling of eyelids, watering, watery discharge, photophobia and foreign body sensation.

Aims and Objectives: To Compare the efficacy of Olopatadine Hydrochloride 0.1% and Azelastine Hydrochloride 0.05% Eye drops for Treatment of Allergic Conjunctivitis in Rural South India.

Methodology: A prospective clinical trial in 74 patients was carried out. Patients by random selection were given treatment by Olopatadine Hydrochloride 0.1% and Azelastine Hydrochloride 0.05% eye drops. Patients were assessed by ophthalmologist 0, 3rd, 7th and 14th day after starting treatment. During visits the symptom were graded from zero to three scale.

Result: The mean age in Olopatadine group was 18± 3.6 years and in Azelastine group was 19± 4.4 years. There were 26 Males and 11 Females in Olopatadine group and 28 Males and 9 Females in Azelastine group. The mean values for the duration of disease in both the groups were 2.8± 2.2 months and 2.9± 2.4 months respectively in Olopatadine and Azelastine group. The symptoms were compared in the two groups on 3rd, 7th and 14th day after starting treatment. The score given by the Ophthalmologist were markedly lower in both groups after treatment during all visits. (P<0.05).

Conclusion: Both Olopatadine and Azelastine reduced symptoms of allergic conjunctivitis very significantly however Olopatadine was more effective.

Keywords: Allergic Conjunctivitis, Olopatadine Hydrochloride, Azelastine Hydrochloride.

Introduction

Conjunctival inflammation due to allergy is known as allergic conjunctivitis.⁽¹⁾ Common ocular symptoms may be itching, edema of eyelids, lacrimation, photophobia and sensation of foreign body in the eye.^(1,2) The cause is interaction of our immune system and the allergen. It is seen more often when other allergic conditions are present for example eczema, asthma and hay fever.⁽⁴⁾ Mast cells have important role in etiopathogenesis.⁽⁵⁾ There are numerous allergens but the commonest cause is allergy to pollens. Others may be cosmetics, some medicines certain seeds and many others. This condition is more prevalent in warm season than cold. Most common form of allergic conjunctivitis is Seasonal Allergic Conjunctivitis (SAC). Such persons are often atopic and they have other allergic disorders. With usual symptoms of allergic conjunctivitis they may develop chemosis⁽⁶⁻⁸⁾ Treatment may have a huge financial burden on the society costing millions of dollars and may affect quality of life.^(9,10,11) Various treatment modalities are adopted for SAC such as topical decongestants, antihistaminic, mast cell stabilizers corticosteroids and lubricants. Immunotherapy and desensitization may be required⁽¹²⁻¹⁸⁾; treatment has to be tailor-made for individual patient. Some drugs are found to have dual action of antihistaminics and also mast cell stabilization: they are very useful in allergic conjunctivitis and being use extensively e.g. Topical Olopatadine and

Azelastine.⁽¹⁹⁾ Ketotifen also possess multi-action like antihistaminic effect and inhibition of eosinophil.^(20,21)

Aims and Objectives

Comparison of efficacy of Olopatadine Hydrochloride 0.1% eye drops and Azelastine Hydrochloride 0.05% eye drops in Treatment of Allergic Conjunctivitis in Rural South India.

Methodology

A prospective clinical trial in the 74 patients was done. Prior approval from Institutional Ethical Committee was obtained. Patients presenting with symptoms of allergic conjunctivitis were apprised of these two treatment modalities with their merits and demerits: consequently informed consent was taken before inclusion in the study. History of prior drug intake for allergic conjunctivitis was taken and if found positive it made exclusion of the patient. Patients were given treatment by Olopatadine Hydrochloride (0.1%) and Azelastine (0.5%) topical drops by random numbers assigned by computer. Patients were assessed by ophthalmologist 0, 3rd, 7th and 14th day after starting treatment. During visits the symptom were graded from zero to three scale. The 1-3 scale meant the presence of no symptom, mild, moderate and severe symptoms respectively. Similar grades are described in other studies too.⁽²²⁾

Result

Table1: Demographic Distribution of the Patients

	Olopatadine	Azelastine
Age (Mean±sd)	18± 3.6 Yrs.	19± 4.4 Yrs.
Sex		
Male	26	28
Female	11	9
Duration of Disease (Mean±sd)	2.8± 2.2 Months	2.9± 2.4Months

From Table 1 the mean age in Olopatadine group was 18± 3.6 Yrs. And in Azelastine group was 19± 4.4 Yrs. There were 26 Males and 11 Females in Olopatadine group and 28 Males and 9 Females in Azelastine group. Mean duration of Disease in both the groups were 2.8± 2.2 Months. And 2.9± 2.4 Months. Respectively in Olopatadine and Azelastine group where these criteria can be compared with each other.

Table 2: Symptomatic distribution of patients

Symptoms	Drugs	Baseline (Mean±sd)	p-value	Day -3 (Mean±sd)	p-value	Day-7 (Mean±sd)	p-value	Day14 (Mean±sd)	p-value
Ocular-itching	Olopatadine	2.1± 1.3	P<0.05	1.52±1.1	P<0.05	1.40±0.78	P<0.05	0.9± 0.2	P<0.05
	Azelastine	2.6±1.12		2.3 ± 1.2		2.0±0.82		2.1± 0.3	
Burning sensation	Olopatadine	2.0±1.2	P<0.05	1.22± 0.75	P<0.05	1.10±0.30	P<0.05	0.82±0.4	P<0.05
	Azelastine	2.4± 1.1		2.2±0.08		2.0± 0.62		1.4±0.58	
Discharge	Olopatadine	2.1 ± 1.5	P<0.05	1.02± 1.3	P<0.05	0.98± 0.13	P<0.05	0.85±0.2	P<0.05
	Azelastine	2.1±1.2		2.2± 1.2		2.00± 0.22		1.4± 0.34	
Photophobia	Olopatadine	1.7± 1.1	P<0.05	1.05±1.23	P<0.05	0.99± 0.12	P<0.05	0.64±0.12	P<0.05
	Azelastine	1.82±1.3		2.2± 1.12		2.1± 0.26		1.5± 0.25	
Foreign body sensation	Olopatadine	1.4± 1.5	P<0.05	1.1± 1.1	P<0.05	0.92±0.11	P<0.05	0.55±0.12	P<0.05
	Azelastine	1.8± 1.2		2.48± 2.1		2.34±0.21		1.22±1.2	
Swollen eye	Olopatadine	1.52± 0.8	P<0.05	1.34± 1.18	P<0.05	0.94±0.45	P<0.05	0.46±0.21	P<0.05
	Azelastine	1.24±0.86		1.89± 2.31		1.80±0.34		1.22±1.4	

All the symptoms mentioned in the column one of Table 2 were compared between the two groups on 3rd, 7th and 14th day. The score given by the Ophthalmologist were lower on both the groups on all occasions, however, they were more lowered on the Opopatadine group. (P<0.05; Unpaired t-test was used)

Discussion

National Health and Nutrition Examination Survey III (NHANES III) found that ocular symptoms, defined as “episodes of tearing and ocular itching”, affected 40% of the adult population in the United States, without appreciable age-wise difference.⁽²³⁾ In the months of May to August the presence of pollen and other aeroallergens like mites, animal epithelia etc. increases and it has been seen that the incidence of eye allergies also increases outnumber nasal allergies. Triggered more ocular symptoms than nasal manifestations. Various studies have shown positive relation of skin allergy tests and allergic conjunctivitis.^(24,25) A study⁽²⁶⁾ revealed that 90% of all patients with seasonal allergy show allergy to pollens.

Various modes of treatment are available for the treatment of allergic conjunctivitis which includes: Topical and systemic antihistaminic, mast cell stabilizers, dual action antihistaminic having mast cell stabilizing action also, topical cyclosporine and the most effective topical steroids. Supportive treatment include artificial tears, mucolytic agents etc. Trials have been done to compare various medications in the treatment of allergic conjunctivitis. In one study topical olopatadine, emedastine, lotepred were compared and all were found better than placebo, however there was no statistical difference in the efficacy among themselves.⁽²⁷⁾

Though steroids are the most effective agents, there side effects are well known which include: risk of development of cataract, glaucoma, delayed wound healing and increased chances of infection.⁽²⁸⁾ Medications having dual action of antihistaminics as well as mast cell stabilizer such as Olopatadine and Azelastine have been found very useful.

This study conducted by us has shown that both Olopatadine and Azelastine reduced the symptoms of allergic conjunctivitis to a large extent, however this aim was achieved better in the Olopatadine group. These findings are similar to that found in study done by Spangler DL et al.⁽²²⁾

Conclusion

Both Olopatadine and Azelastine reduce the symptoms of allergic conjunctivitis to a large extent, however this aim was achieved better in the Olopatadine group.

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