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Original Research

Comparison of olopatadine and alcaftadine in cases of allergic conjunctivitis

[1]Mohd Shahbaaz, [2]Rekha S, [3]R C Krishnakumar

[1,2]Assistant Professor, [3]Medical Director, PK DAs Institute of Medical Sciences, Vaniamkulam, Ottapalam, Kerala, India

ABSTRACT:

Aim: To compare olopatadine and alcaftadine in cases of allergic conjunctivitis. **Methodology:**Eighty- two patients of allergic conjunctivitis of both genderswere randomly divided into 2 groups of 41 each. Group I patients were prescribed topical 0.1% Olopatadine eyedrops and group II patients were prescribed topical 0.25% Alcafatadine eyedrops. **Results:** Group I comprised 21 males and 20 females and group II 22 males and 19 females in group II. 2 patients in group I and 3 in group II had recovered from discharge after 30 minutes, 11 in group I and 9 in group II recovered from discharge after 1 day and 18 in group I and 19 in group II recovered from discharge after 1 week respectively. The difference was non- significant (P> 0.05). 2 patients in group I and 3 in group II had recovered from foreign body sensation after 30 minutes, 24 in group I and 22 in group II recovered from foreign body sensation after 1 day and 15 in group I and 16 in group II recovered from foreign body sensation after 1 week respectively. The difference was non- significant (P> 0.05). 8 patients in group I and 2 in group II recovered from redness after 30 minutes, 18 in group I and 19 in group II recovered from redness after 1 day and 14 in group I and 20 in group II recovered from redness after 1 week. The difference was non- significant (P> 0.05). **Conclusion:** Both drugs olopatadine and alcaftadine found to be equally effective in cases of allergic conjunctivitis.

Key words: allergic conjunctivitis, alcaftadine, olopatadine

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Corresponding author: Rekha S, Assistant Professor, PK DAs Institute of Medical Sciences, Vaniamkulam, Ottapalam, Kerala, India

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INTRODUCTION

Over the past few decades, there has been a sharp rise in allergic diseases. One of the most prevalent ocular conditions seen in clinical practice is ocular allergy.[1] Since a single cause for this increase cannot be determined, experts are looking into a variety of factors, such as early childhood exposure, urban air pollution, genetics, and pets. The cost of treating allergies has gone up significantly as more people seek treatment for their conditions. Even mild cases of ocular allergies, such as atopic keratoconjunctivitis, can cause uncomfortable symptoms that may eventually result in blindness.[2]

Allergic conjunctivitis is an inclusive term that encompasses seasonal allergic conjunctivitis (SAC), perennial allergic conjunctivitis (PAC), vernal keratoconjunctivitis (VKC), and atopic keratoconjunctivitis (AKC).[3] However, AKC and VKC have clinical and pathophysiological features quite different from SAC and PAC, in spite of some common markers of allergy.[3]

Although topical corticosteroids are the most effective medications for managing inflammatory symptoms, using them is not without risk. Recently, topical medications with anti-histaminic and mast cell stabilizing properties have been developed. They can be used to manage acute symptoms and stop relapses. These agents (such as olopatadine, bepotastine, and alcaftadine) are FDA approved for use in allergic conjunctivitis.[4]

Alcaftadine is an anti-allergic agent that provides relief from ocular itching by inverse agonistic effects on H1, H2 and H4 receptors in early phase and also stabilizes mast cells by inhibiting release of mediators such as cytokines and lipid mediators in the late phase of an ocular allergic response and decreases chemotaxis, eosinophil activation thereby exerts anti-inflammatory property.[5] Olopatadine hydrochloride is a selective histamine H1 receptor antagonist and mast-

cell stabilizer. It also has anti-inflammatory effects which include suppression of interleukins (IL) 6 and 8 production by inhibiting histamine related signalling pathways.[6] The present study compared topical olopatadine (0.1%) and alcaftadine (0.25%) in cases of allergic conjunctivitis.

MATERIALS & METHODS

In the present prospective, observational study we enrolled eighty- two patients of allergic conjunctivitis of both genders. All selected patients agreed to participate in the study and gave their written consent. Ethical approval for the study was obtained from review committee.

Demographic characteristics such as name, age, gender etc. was recorded. Opthalmic evaluation was carried out by an expert ophthalmologist. Patients were randomly divided into 2 groups of 41 each. Group I patients were prescribed topical 0.1% Olopatadine eyedrops and group II patients were prescribed topical 0.25% Alcafatadine eyedrops. Grading was done where 0 indicates no itch and 3 indicates constant desire to itch. Ocular redness and discharge were scored using 5-points scale (0–4), foreign body sensation and watering were graded using the 4-point scale (0–3). In signs, upper tarsal papillae were graded using 4-point scale (0–3) with 0 indicating no papillae and 3 indicating predominance of giant papillae. All parameters were recorded at 30 minutes, 1 day and 1 week. All results were tabulated and analysed statistically using Mann Whitney U test. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I (0.1% Olopatadine)	Group II (0.25% Alcafatadine)
Male	21	22
Female	20	19

Group I comprised 21 males and 20 females and group II 22 males and 19 females in group II (Table I).

Table II Comparison of discharge

Duration	Group I	Group II	P value
30 minutes	2	3	0.09
1 day	11	9	
1 week	18	19	

2 patients in group I and 3 in group II had recovered from discharge after 30 minutes, 11 in group I and 9 in group II recovered from discharge after 1 day and 18 in group I and 19 in group II recovered from discharge after 1 week respectively. The difference was non- significant (P> 0.05) (Table II).

Table III Comparison of foreign body sensation

Duration	Group I	Group II	P value
30 minutes	2	3	0.21
1 day	24	22	
1 week	15	16	

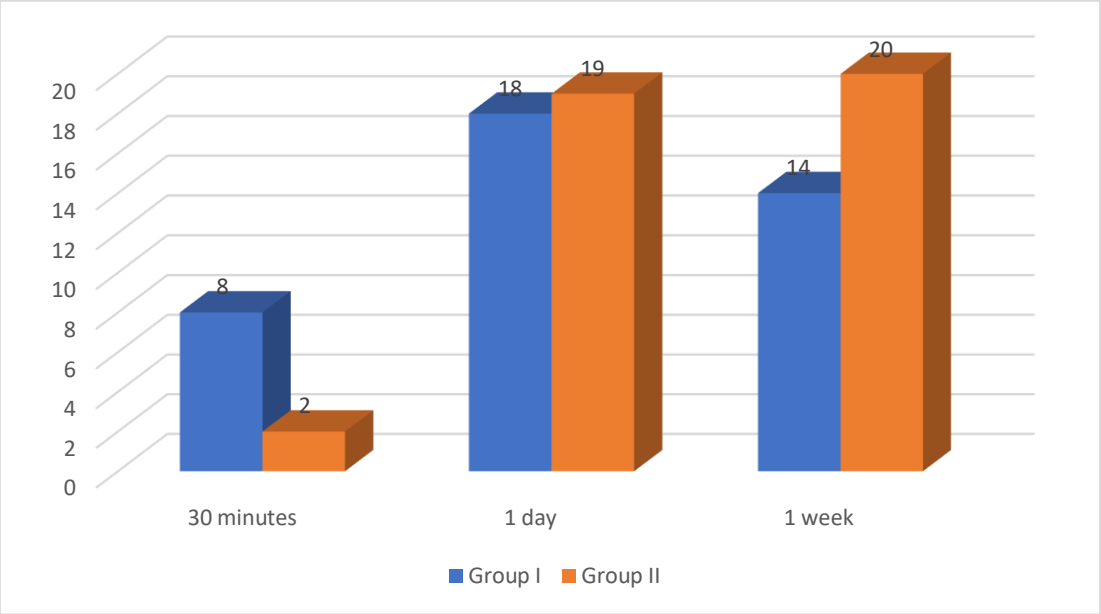
2 patients in group I and 3 in group II had recovered from foreign body sensation after 30 minutes, 24 in group I and 22 in group II recovered from foreign body sensation after 1 day and 15 in group I and 16 in group II recovered from foreign body sensation after 1 week respectively. The difference was non- significant (P> 0.05) (Table III).

Table IV Comparison of Redness

Duration	Group I	Group II	P value
30 minutes	8	2	0.05
1 day	18	19	
1 week	14	20	

8 patients in group I and 2 in group II recovered from redness after 30 minutes, 18 in group I and 19 in group II recovered from redness after 1 day and 14 in group I and 20 in group II recovered from redness after 1 week. The difference was non- significant (P> 0.05) (Table IV, graph I).

Graph I Comparison of Redness



DISCUSSION

The conjunctiva of the eye is continually exposed to a variety of airborne antigens that can lead to inflammation, termed allergic conjunctivitis, which is an ocular surface inflammatory disease that affects approximately 40% of the global population.[7] It is predominantly Ig E-mediated Type I hypersensitivity reaction where allergen binds to specific Ig E molecules, triggers mast cell degranulation and subsequent increase in histamine leading to activation of both H1 and H2 types of histamine receptors.[8] The main behavioural change for all forms of allergic conjunctivitis is to avoid the offending antigen; however, since the eyes have a large surface area, it is frequently impossible to prevent ocular exposure to airborne allergens.[9] Artificial tear substitutes serve as a barrier and enhance the conjunctival mucosa's first-line defence system. These substances assist in flushing the ocular surface of these substances and in diluting different allergens and inflammatory mediators that may be present there.[10]

In our study, group I comprised 21 males and 20 females and group II 22 males and 19 females in group II. 2 patients in group I and 3 in group II had recovered from discharge after 30 minutes, 11 in group I and 9 in group II recovered from discharge after 1 day and 18 in group I and 19 in group II recovered from discharge after 1 week respectively. Baiswar et al[11] assessed cases of allergic conjunctivitis on 108 patients of both genders. Symptoms such as tearing, photophobia, redness, watering, foreign body sensation etc. were analyzed. Out of 108 patients, males were 48 and females were 60. Seasonal AC was seen in 20 males and 27 females and Perennial AC was seen in 28 males and 33 females. Tearing was seen in 98, photophobia in 54, watering in 83 and redness in 106 patients.

We found that 2 patients in group I and 3 in group II had recovered from foreign body sensation after 30 minutes, 24 in group I and 22 in group II recovered from foreign body sensation after 1 day and 15 in group I and 16 in group II recovered from foreign body sensation after 1 week respectively. Ackerman et al[12] conducted comparative trials among 0.25% alcaftadine and 0.2% olopatadine in a study using conjunctival allergan challenge, alcaftadine was found superior to olopatadine at the earliest time point (3 min post-challenge). Only alcaftadine provided significant relief in chemosis at 16 and 24 hours post-instillation.

In our study, 8 patients in group I and 2 in group II recovered from redness after 30 minutes, 18 in group I and 19 in group II recovered from redness after 1 day and 14 in group I and 20 in group II recovered from redness after 1 week. Ono et al[13] compared olopatadine (0.1%), bepotastine (1.5%), and alcaftadine (0.25%) for mild to moderate allergic conjunctivitis cases and the efficacy of three topical medications in 45 patients with 15 patients in each of the three groups. Patients with mild to moderate allergic conjunctivitis were sequentially assigned to respective groups, and relief of symptoms and signs were noted up to 1-month follow-up. All three topical medications faired almost equally in resolving symptoms of the patients with mild to moderate allergic conjunctivitis, and most of them reported complete relief after 1 week of use of medication. Few cases with limbal or palpebral papillae reported symptomatic relief after use of medication, but the resolution of these signs was not noted in all three groups.

Ayyappanavar et al[14] conducted a study on 180 patients with mild to moderate allergic conjunctivitis, who were randomized into three groups of 60 patients each. Each group was assigned to be treated with one

of the three treatment options namely Alcaftadine 0.25%, Olopatadine hydrochloride 0.2% and Bepotastine besilate 1.5% ophthalmic solutions. Patients were followed-up at regular intervals with relief and resolution of symptoms and signs noted using Total Ocular Scoring System (TOSS) and hyperaemia scale. All three topical medications were effective in resolving symptoms of the patients with mild to moderate allergic conjunctivitis. Baseline mean TOSS scores for Alcaftadine group, Olopatadine group and Bepotastine besilate group were (7.68±2.32), (7.65±2.32) and (7.45±2.27) respectively as compared to the corresponding TOSS scores on 14th Day (4th visit) which were (0.2 ± 0.43), (0.4 ± 0.56) and (0.1 ± 0.36) respectively. The resolution of symptoms in the Bepotastine and Alcaftadine groups was significantly profound as compared to the Olopatadine group. Bepotastine and Alcaftadine groups significantly reduced allergic conjunctivitis symptoms compared to Olopatadine group.

CONCLUSION

It was observed that both drugs olopatadine and alcaftadine found to be equally effective in cases of allergic conjunctivitis.

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