Section: Ophthalmology

Original Research Article

COMPARATIVE STUDY OF EFFICACY OF OLOPATADINE WITH BEPOTASTINE IN ALLERGIC CONJUNCTIVITIS IN ANDHRA PRADESH POPULATION

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Received : 04/01/2024
Received in revised form : 20/02/2024
Accepted : 05/03/2024

Keywords:
Slit lamp, Snellen's chart, signs and symptoms visual acuity, redness, itching, and watering.

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DOI: 10.47009/jamp.2024.6.2.34

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (2); 165-168

Abstract

Background: Allergic conjunctivitis (AC) is the most common allergic ocular disorder. Hence, the first line of topical treatment is required to control this allergic manifestation. **Materials and Methods:** Out of 200 patients with allergic conjunctivitis studied, visual acuity was measured using the smallest charts, and a slit lamp examination was done on every patient. 100 patients were administered topical 0.1% olopatadine (group A), and 100 were administered 1.5%. Bepostine eye drops BD on the 7th and 21-28th days. Further grading signs and symptoms scores were compared in both patients and significant results were noted. **Result:** Group A was treated with 0.1% olopatadine eye drops, and Group B was Bepotastine 1.5% on the 7th day. Redness grading was 0 in 93% of patients and 7 patients had 1 redness score in Bepotastine, 82% of patients had a 0 grade of redness, and 18% had a 1 grade of redness in olopatadine. **Conclusion:** Both olopatadine 0.1 and Bepotastine besilate 1.5% are effective in treating allergic conjunctivitis. However, Bepotastine besilate is more efficient in the early control of itching and redness in allergic conjunctivitis.

INTRODUCTION

Allergic conjunctivitis (AC) is the most common allergic ocular disorder, affecting approximately 20% of the global population. The prevalence of AC is region-dependent and appears to be increasing worldwide.[1] The pathology is associated with seasonal pollen sensitivity, although perennial forms are associated with exposure to animal dander, mites, and molds. AC is a type-I, IGE-mediated hypersensitivity immune reaction that occurs in individuals previously exposed to a specific allergen.[2] The immune response involves the release of inflammatory mediators, including histamine, leukotrienes, bradykinin, prostaglandin proteases, and cytokines, which contribute to the development of signs and symptoms. Histamines from degranulated mast cells are the principal immune mediators related to early allergic responses.[3]

Bepotastine besilate is the latest generation ophthalmic and histamine with multiple mechanisms of action in both preclinical and clinical studies. Bepotastine besilate exerts its anti-inflammatory action through the inhibition of leukotriene B4 and the reduction of activation of eosinophil chemotaxis. Olopatadine is first-generation anti-histamine with dual action in terms of both mast cell de-granulation inhibition and histamine H1 receptor blockage.[4] This agent has rapid onset due to anti-histamine activity and a prolonged duration of action due to mast cell stabilization. Hence, an attempt is made to evaluate the efficacy and safety of both drugs.

MATERIALS AND METHODS

200 adult patients regularly visited the ophthalmology department of the Dr. Pinnamaneni Siddhartha Institute of Medical Science and Research Foundation, Chinoutpalli Gannavaram, Krishna District, Andhra Pradesh (521286) was studied.

Inclusive Criteria

Patients above 18 years of age given written consent for treatment diagnosed as allergic conjunctivitis have intraocular pressure <18 mm Hg in both eyes were selected for study.

Exclusion Criteria

Patients having known hypersensitivity to either agent who are blind or having single eye surgery during the trial period, suffering from dry eyes and a schirmer <10mm, inability to come for regular follow-ups, pregnant and lactating mothers with a history of alcohol or drug abuse, or who were taking

ISSN (O): 2687-5365; ISSN (P): 2753-6556

steroids or antihistamines within 7 days prior to enrolment were excluded from the study.

Method

Visual acuity was measured using Snellen's charts; both uncorrected and best corrected visual acuities were noted in every patient. Anterior segment evaluation by diffuse torch light and slit lamp examination was done to rule out signs of allergic conjunctivitis. Patients were randomly grouped into groups A (100 patients) and II (100 patients). Group A patients were administered Topical 0.1% olopatadine eye drop B.D. Group B was administrated. Topical 1.5% Bepotastine Eye Drop B.D.

The ophthalmological checkup was done using a slit lamp on the next day, the 7th day, and the 21-28th day.

Four uniforms graded symptoms and signs at each visit and followed the scoring tables of 1 and 2 for symptoms.

RESULTS

[Table 1] Scoring of symptoms of redness, itching, watering, discomfort, 0-absent, 1-Mild, 2-<oderate, 3-Severe

[Table 2] Scoring of signs included palpebral conjunctival hyperemia, oedema, follicles, papillae, giant papillae, bulbar conjunctival hyperemia, oedema, and swelling of the limbus. Tranta's spot corneal epithelial signs

[Table 3] Comparison of signs and symptoms

Group A: Follow-up Day 1

Itching grade-II, redness grade-II, watering grade-I, foreign body sensation grade-I, In signs Conjuctival congestion, grade II

Group-B: Itching Grade I, Redness Grade I, Watering Grade I

Signs congestion grade I

Follow up Day-7, Group-A, Itching grade I, redness grade I, watering grade 0, and foreign body sensation grade

Follow-up: 24-28 days Group A: Itching Grade 0 redness grade-0, Group B: itching grade-0, redness grade-0

[Table 4] Comparison of Redness on Follow-Up Day 1

Bepotastine 50 had a 0 grade.

44 had grade-I, 6 had grade-6 Olopatadine, 20 had 0 grading, 58 had grade-I, and 22 had grade-2.

[Table 5] Comparison of Redness on Follow-Up Day 7.

Redness grading:

Bepotastine: 93 had 0-grading, 7 had grade-I.

Olopatadine: 82 had a grade of 0, and 18 had a grade of I.

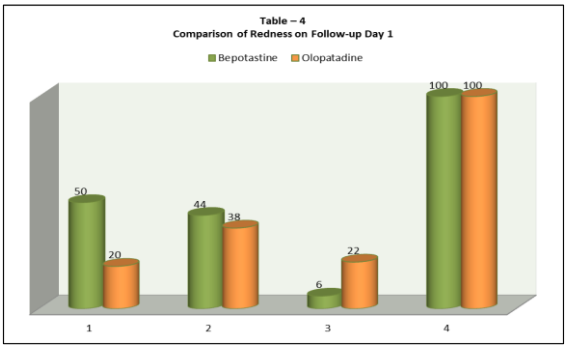

Figure 1: Comparison of Redness on Follow-up Day 1

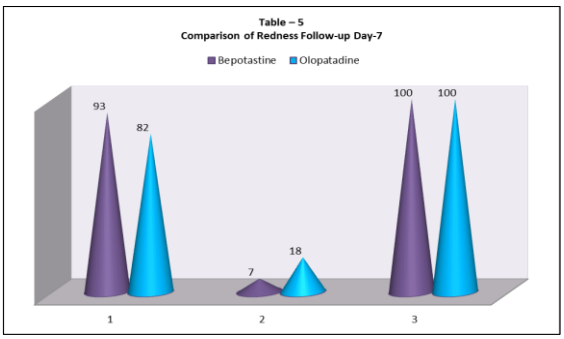

Figure 2: Comparison of Redness Follow-up Day-7

Table 1: Scoring of symptoms

Redness	0 – absent 1 – Mild 2 – Moderate 3 – severity
Itching	0 – absent 1 – Occasional 2 – Frequent 3 – Constant
Watering	0 – Normal tear 1 – Sensation of fullness of conjunctivitis 2 – in frequent over the lid margin 3 – constant spilling of treats over lid margin
Discomfort	0 – absent 1 – Mild 2 – Moderate 3 – severity
Corneal Epithelial sign	3 – Shield ulceration 2 – Exfoliation 1 – SPK 0 – None

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Table 2: Scores of Signs

Peripheral conjuctival hyperaemia	3 –impossible to distinguish 2 – individual blood vessel dilatation of many 1 – Dilatation of several vessel 0 – None
Oedema	3 – Diffuse oedoma 2 – Thinner diffuse 1 – Slight oedema 0 – None
Follicles	3 – 20 to More 2 – 10 to 19 1 – up to 9 0 – None
Papillae	3 – papilla size 0.6 mm or more 2 – 0.3–0.5 mm 1 – 0.1-0.2 mm 0 – None
Giant papillae (size ≥ 10mm)	3 – Elevated papillae in half or more of upper palpebral conjunctiva 2 – Elevated papillae in less than half upper palpebral conjunctiva 1 – Flat papillae 0 – None
Bulbar conjuctival Hyperamea	3 – Diffuse dilated blood vessels over entire bulbar conjunctiva 2 – Dilation of many 1 – Dilation of several vessels 0 – None
Odema	3 – Bullous odema 2 – Thinner diffuse 1 – localized odema 0 – None
Swelling	3 – ≥ 2/3rd found in limbal 2 – 1/3rd to ≤2/3rd 1 – ≤ 1/3rd 0 – None
Limbus Trantas spot	3 – ≥ 9 2 – 2-5 to 8 1 – 1 to 4 0 – None
Corneal Epithelial Sign	3 – Shield ulceration 2 – exfoliation SPK 1 – SPK 0 – None

Table 3: Comparison of signs and symptoms on follow up

Parameters	**Follow up Day-1**		**Follow up Day-4**		**Follow up Day-24-28**	
(A) Symptoms	Group-A	Group-B	Group-A	Group-B	Group-A	Group-B
Itching	Grade-2	Grade-3	Grade-5	Grade-0	Grade-0	Grade-0
Redness	Grade-2	Grade-1	Grade-1	Grade-1	Grade-0	Grade-0
Watering	Grade-1	Grade-1	Grade-0	Grade-0	--	--
Foreign Body Sensation	Grade-1	Grade-0	Grade-0	Grade-0	--	--
(B) Signs						
Conjuctival congestion	Grade-2	Grade-1	Grade-1	Grade-0	--	--
Papillae	--	--	--	--	--	--
Limbal thickening & pacification	--	--	--	--	--	--
Limbal papillae	--	--	--	--	--	--
Horner's trantas dots	--	--	--	--	--	--

Table 4: Comparison of Redness on Follow-up Day 1

	First Day Follow-up Redness			
Redness grading	**Bepotastine**		**Olopatadine**	
	Number	**%**	**Number**	**%**
0	50	50	20	20
1	44	44	38	58
2	6	6	22	22
Total	100	100	100	100

Table 5: Comparison of Redness Follow-up Day-7

	Severn days Follow-up Redness			
Redness grading	**Bepotastine**		**Olopatadine**	
	Number	**%**	**Number**	**%**
0	93	93	82	82
1	7	7	18	18
Total	100	100	100	100

ISSN (O): 2687-5365; ISSN (P): 2753-6556

DISCUSSION

Present a comparative study of the efficacy of olopatadine versus bepotastine in allergic conjunctivitis in the Andhra population. Olopatadine was treated in 100 patients (grade A), and bepotastine was administered to another 100 patients (group B). (A) Symptoms of Itching: Group A, Grade II, and in Group B: Grade I in follow-up day on 7th day, group A has grade-I, and group B had grade-0 on 24-28th day. Both groups had a grade of 0. On follow-up day 1, Group A had grade II, and Group A had grade I. On the 7th day, both groups had grade I, and on the 24-28th, both were watering. On follow-up day I, both groups had grade-I on the follow-up 7th day. Both groups had zero grades. Foreign body sensation Follow-up: Group A had grade II, and Group B had grade zero on the 7th day both groups had grade zero.

(B) In signs of conjuctival congestion on follow-up 1st day, group A had grade-II, 7th day, group A had grade-I, and group B had zero grade [Table 3]. A comparative study of redness on follow-up day 1 In Bepotastine Besilate, 1.5% 50% had zero, 50% had grade 44-I, and 6% had grade II. In olopatadine, 20% had a zero score, 58% had a grade-I, and 22% had a grade-II [Table 4]. In comparison to the redness of follow-up day 7th in bepotastine, 93% had a zero grade and 7% had a 1 grade. In olopatadine-administered patients, 82% had zero grading, and 18% had grade-I [Table 5]. These findings are more or less in agreement with previous studies.[5,6,7]

The increasing prevalence of allergic conjunctivitis and ocular discomfort necessitates the use of safe, highly effective, and comfortable topical medicine. However, the current literature lacks the comparative data to assist the eye care professional in selecting the appropriate initial topical treatment. A clinical diagnosis is made by assessing both group patient symptoms of intermittent or exposure-related ocular itching and signs of conjunctival papillae hyperemia and epiphora. It was interesting to note that 94% of patients with allergic conjunctivitis also had allergic rhinitis symptoms of nasal itching and rhinorrhea.[8] All of these symptoms have a negative impact on patients ocular and nasal comfort and may result in disruption and restriction of daily activities and economic burden.[9]

Bepotastine besilate 1.5% underwent three random placebo-controlled U.S. clinical studies, two conjuctival allergen challenge studies, and a six-week safety study with twice daily dosing.[10] It has rapid clinical benefit in treating allergen-induced ocular itching that lasts for at least 8 hours.

It is reported that olopatadine significantly reduced the itching score at 3, 5, and 10 minutes after antigen induction for up to 16 hours after dosing. In contrast, Bepotastine Besilate 1.5% was significantly more effective in relieving ocular itching relief between morning and evening.[11]

In the present study, patients reported greater relief of evening ocular itch, an itchy or runny nose, and evening ocular allergy symptoms with Bepotastine besilate 5%. Thus, patients suffering from allergic conjunctivitis choose and comply with a twice-daily rather than once-daily dosing schedule because they feel that better relief of their ocular itching, itchy/runny nose, and ocular allergy symptoms in the evening is worth the effort of installing a second dose of their allergy eye drop.

CONCLUSION

In the present comparative study, patients preferred Bepotastine besilate 1.5% over olopatadine hydrochloride 2% for the treatment of ocular itch, itchy/runny nose, and ocular allergy symptoms associated with allergic conjunctivitis. The present study demands further genetic, environmental, nutritional, and pharmacological studies because the exact pathogenesis of allergic conjunctivitis is still unclear.

Limitations

Owing to the tertiary location of the research center, the small number of patients, and the lack of the latest technique, we have limited findings and results.

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ISSN (O): 2687-5365; ISSN (P): 2753-6556