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THE EFFECT OF TOPICAL EPINASTINE 0.5MG/ML OPHTHALMIC SOLUTION ON OCULAR AND NASAL SYMPTOMS IN PATIENTS WITH SEASONAL ALLERGIC RHINO- CONJUNCTIVITIS

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ABSTRACT

Aim: To evaluate the effect of epinastine 0.5mg/ml ophthalmic solution twice daily on ocular and nasal symptoms in patients with seasonal allergic rhino-conjunctivitis. **Method:** this retrospective study was conducted at the ophthalmology and otolaryngology clinic of King Hussein Medical Center. All patients who are diagnosed with seasonal allergic rhino-conjunctivitis and received only topical epinastine 0.5mg/ml ophthalmic solution twice daily were enrolled in the study. Patients who received systemic anti histamine or steroids or nasal preparation for allergic rhinitis were excluded from the study. Patients who were younger than 14 years of age were excluded from the study as well The patient's records were reviewed regarding the improvement in nasal and ocular symptoms of allergic rhino-conjunctivitis including eye itching, eye redness, tearing, sneezing, Nose itching, and running nose after a period of 2 weeks, one month and three months after using the medication. The severity of symptoms was assessed subjectively by asking the patients to describe the symptoms as: absent, mild, moderate or sever which stand for scores of 0,1,2 and 3 respectively. The obtained results were analyzed using simple statistical analysis.

INTRODUCTION

Seasonal allergic rhino-conjunctivitis is one of the major health problems in the world which has adverse impact on the quality of life for adults and children.[1,2] It is considered one of the most frequent cause for attendance and seeking medical advice at the ophthalmology and otolaryngology clinics.[3] It is estimated that one tenth to one fifth of the population is affected by allergic rhino-conjunctivitis.[4] The global prevalence of allergic rhino-conjunctivitis showed an increase in the prevalence over the last two decades.[4] The majority of patients with allergy have ocular and nasal symptoms. the symptoms may vary from patient to another. However, eye itching, eye redness, tearing, sneezing, Nose itching, and running nose are the most prominent symptoms among patients with allergic rhino-conjunctivitis.[1] On the long term serious ocular complication may result from allergic rhino-conjunctivitis like corneal opacity and keratoconus which may permeant and irreversible adverse impact on vision.[5] Therefore, controlling the allergic conjunctivitis is mandatory before those complications take place particularly in pediatric age groups.[6]

Avoidance of exposure to aeroallergens is the most important part of treatment. But this not always feasible. A lot of medications were used to control allergic rhino-conjunctivitis and its associated symptoms which includes both topical and systemic pharmacotherapies. Steroids, mast cell stabilizers and anti-histamines are the most widely used.[7] The choice of treatment depends on the severity of symptoms, prominent symptoms, tolerance of the patients and age of the patients. One of the most widely used drugs is epinastine which blocks both H1 and H2 histamine receptors which results in down-regulation of intercellular adhesion molecules-1 expression with consequent anti-inflammatory action.[8] The aim of this study is to evaluate the effect of epinastine 0.5mg/ml ophthalmic solution twice daily on ocular and nasal symptoms in patients with seasonal allergic rhino-conjunctivitis.

METHOD

this retrospective study was conducted at the ophthalmology and otolaryngology clinic of King Hussein Medical Center. All patients who are diagnosed with seasonal allergic rhino-conjunctivitis and received only topical epinastine 0.5mg/ml ophthalmic solution twice daily were enrolled in the study. Patients who received systemic anti histamine or steroids or nasal preparation for allergic rhinitis were excluded from the study. Patients who were younger than 14 years of age were excluded from the study as well The patient's records were reviewed regarding the improvement in nasal and ocular symptoms of allergic rhino-conjunctivitis including eye itching, eye redness, tearing, sneezing, Nose itching, and running nose after a period

of 2 weeks, one month and three months after using the medication. The severity of symptoms was assessed subjectively by asking the patients to describe the symptoms as: absent, mild, moderate or sever which stand for scores of 0,1,2 and 3 respectively. The obtained results were analyzed using simple statistical analysis.

RESULTS

Two hundred patients aged between 14 years and 52 years (mean 21.5±8.9 years) were included in the study. 58% of them were males. The most common ocular symptom was itching and the most common nasal symptom was sneezing. The presenting symptoms among the patients at presentation are summarized in table 1.

Table 1: The presenting symptoms of allergic rhino-conjunctivitis.

Symptom	Number of patients	percentage
Eye itching	198	99.0%
lacrimation	165	82.5%
Eye redness	142	71.0%
Sneezing	156	78.0%
Running nose	120	60.0%
Nose itching	77	38.5%

Eye itching was the highest severity score encountered among the patients. All the severity scores of ocular and nasal symptoms were higher than 2.5. the scores of each symptom are summarized in table 2.

Table 2: The score of the presenting symptoms of allergic rhino-conjunctivitis.

Symptom	0	1	2	3	mean
Eye itching	1.0%	3.0%	16%	80.0%	2.78
lacrimation	2.0%	4.5%	14.0%	62.0%	2.65
Eye redness	1.0%	7.5%	10.5%	52.0%	2.60
Sneezing	0.0%	4.0%	20.0%	54.0%	2.64
Running nose	1.0%	7.0%	10.0%	42.0%	2.55
Nose itching	2.0%	2.5%	5.5%	29.5%	2.64

Significant improvement in severity scores of ocular and nasal symptoms was noted after two weeks from the use of topical epinastine. Further improvement was observed at 1 month which was maintained after 3 months. The mean scores of each symptom at presentation and after 2 weeks, 1 month and 3 months from starting treatment are summarized in table 3.

Table 3: The score of the presenting symptoms of allergic rhino-conjunctivitis at presentation and after 2 weeks, 1 month and 3 months from treatment.

Symptoms	At presentation	2 weeks after treatment	1 month after treatment	3 months after treatment
Eye itching	2.78	1.21	0.32	0.21
lacrimation	2.65	1.33	0.22	0.15
Eye redness	2.60	1.5	0.33	0.33
Sneezing	2.64	0.92	0.28	0.25
Running nose	2.55	0.85	0.41	0.44
Nose itching	2.64	0.67	0.36	0.39

DISCUSSION

Allergic conjunctivitis and allergic rhinitis usually coexist together because of the very closed anatomical and functional properties.[9] Children were excluded from the study because of the subjective aspect of the study which depends largely on the patient's judgment and assessment.

In the present study, allergic rhino-conjunctivitis was slightly more common in males. Ocular symptoms were more prevalent than nasal symptoms which might be explained by the larger surface area of the conjunctiva and its anatomical structure when compared to nasal mucosa rendering it more prone to aeroallergens exposure.

The most common ocular symptom was itching which was present in almost all patients. The importance of this symptom is that it may force the patient to rub the eyes which may result in anatomical changes in the cornea with subsequent development of keratoconus. Therefore, prompt control of eye itching is essential to prevent the irreversible visual deterioration. On the other hand sneezing was the most prominent nasal symptoms which was present in 78.0% of the patients.

Not only that ocular symptoms were more prevalent than nasal symptoms, the mean severity scores were slightly higher at presentation in ocular manifestations when compared with nasal ones. The severity scores for eye itching, eye redness, tearing, sneezing, Nose itching, and running nose were 2.78, 2.65, 2.60, 2.64, 2.55 and 2.64 respectively.

A great improvement in the severity scores of ocular symptoms was noted after 2 weeks from the use of topical epinastine twice daily. The scores of eye itching, eye redness and tearing improved from 2.78, 2.65 and 2.60 to 1.21, 1.3 and 1.5 respectively. Epinastine is one of the new anti histamines which has multiple modes of action; it is stabilizes and inhibits the degranulation of the mast cell, it prevents the attachment of histamine molecule to H1 and H2 receptors and inhibits the release of inflammatory mediators like cytokines, chemokines

and chemotactic factors.[10] In addition, marked improvement in the severity scores of nasal symptoms was noted two weeks after starting therapy as well. The severity scores of sneezing, Nose itching, and running nose improved from 2.64, 2.55 and 2.64 to 0.92, 0.85 and 0.67 respectively. The improvement of nasal manifestations of allergic rhino-conjunctivitis from the topical ocular use of epinastine is attributed to anatomical relationship between nasal mucosa and the conjunctiva and their connection via the naso-lacrimal duct. Installation of epinastine into the conjunctival will result in passage of this product to reach the nasal mucosa and show its effect there. In addition, Pelikan et al reported that in allergic rhino-conjunctivitis the allergic reaction starts initially in the conjunctival mucosa which will result in migration of mast cells through the vascular system into the nasal mucosa.[11] Therefore, controlling the inflammatory reaction in the conjunctiva will result in reduction of immune reaction in the nasal mucosa.

Further improvement was noted at one month after treatment which was maintained after 3 months as well.

Although this study depended on the subjective assessment of nasal and ocular symptoms of allergic rhino-conjunctivitis. Rapid and marked improvement in the rate and severity of those symptoms was noted after the use of epinastine ophthalmic solution which was maintained for three months after therapy.

CONCLUSION

Marked improvement of eye itching, eye redness, tearing, sneezing, Nose itching, and running nose was observed shortly after the use of topical epinastine eye drops. This effect was durable and maintained for three months after treatment.

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