

Original Research Article

Study of incidence of allergic conjunctivitis in patients with allergic rhinitis

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ABSTRACT

Background: Allergic conjunctivitis (AC) accounts for 15% of eye related consultations in primary care centers. AC is commonly manifesting as itchy or watering or red eye, comprising the symptoms of the total ocular symptom scores (TOSS). Recognition of AC is unreported even in patients with recognized AR (allergic rhinitis). Therefore, the objective of the present study was to identify the incidence of AC in patients with AR.

Methods: This randomized observational study was conducted on 110 patients for a 6 month period from February to July 2019, having diagnosed AR and attending the outpatient clinic in CHC Chenani, district Udhampur, Jammu and Kashmir. The patients were directly questioned if they had AC, clarified by using standard screening questions of red, itchy and watery eyes and quantified by TOSS and were asked about indirect symptoms that may be attributable to AC.

Results: Among the 110 patients, 50.9% of patients identified AC on direct questioning; additional symptoms were squint at 47.3% and blinking at 51.2%. Olopatadine, significantly reduced TOSS scores within 5 minutes of treatment and 80.9% showed improvement, which identified 39% silent sufferers of AC. A total of 90% AC subjects were identified through TOSS symptoms and totally 95.5%, detecting additional symptoms. The other co-morbidity that was associated with allergic conjunctivitis was allergic dermatitis.

Conclusions: The screening questions could identify only about 56% of the patients with AC. Additional specific questioning and a therapeutic challenge in suspected patients can help identify patients who may benefit from treatment of AC.

Keywords: Allergic conjunctivitis, Allergic rhinitis, Total ocular symptom scores

INTRODUCTION

AC accounts for 15% of eye related consultations in primary care centers, showing acute forms of the conditions, which are either seasonal or perennial.^{1,2} Seasonal allergic conjunctivitis (SAC), a type 1 immunoglobulin-E (IgE) mediated hypersensitivity reaction, is commonly seen when pollens are present in the atmosphere (typically during spring and summer months). AC is commonly manifesting as itchy or

watering or red eye, comprising the symptoms of the TOSS.³

It is estimated that the prevalence of AC is up to 20% in developed countries, with a high co-morbidity of AR, but most of the infected patients appear to self-manage the condition, often by avoidance of allergens or often with use of over the counter medications, with only 10-12% of patients seeking medical attention.⁴⁻⁶ Recognition of AC is unreported even in patients with recognized AR.⁵

Under-recognition of AR is common, with the proportion of undiagnosed AR patients ranging from 25-60%.⁷

Clinically, AC patients have heightened sensitivity and rubbing of eyelids can contribute to dermatitis, making patients focusing more on the dermatitis than conjunctival symptoms.

The nomenclature review committee of the world allergy organization (WAO) in its revised nomenclature for allergy for global use stated that: hypersensitivity symptoms from the nose e.g. itching, sneezing, increased secretion and blockage, when immunologically mediated, should be called allergic rhinitis; because the great majority of cases are IgE-antibody-mediated, a proper term would be IgE-mediated allergic rhinitis.⁸ Examining allergic disorders in young age can be of interest as this is a period when susceptibility to allergens might be influenced.

Therefore, this study took place among pediatrics and adults within a rural population. The prime objective of the present study was to identify the incidence of AC in patients with AR, which were quite reliable to ascertain AC severity and we aimed to investigate the inter-relationship between the two conditions, further.

METHODS

A randomized observational study was conducted on 110 patients both children and adults, for a 6 month period from February to July 2019, which included the pollen season, having diagnosed AR and attending the outpatient clinic in CHC Chenani, district Udhampur, Jammu and Kashmir. The patients were directly questioned if they had AC, clarified by using standard screening questions of red, itchy and watery eyes and quantified by TOSS, scored as a percentage from 0 to 100. Patients were asked about indirect symptoms that may be attributable to AC: eyelid dermatitis, frequent blinking, eye sensitivity and frontal headache.

Patients were prospectively diagnosed with AR based on clinical history, examination and skin prick testing by an allergy specialist. They were given a drop of olopatadine in each eye to help identify silent disease. Olopatadine hydrochloride 0.1% was selected for its efficacy in AC, providing negligible side effect profile and rapid onset of action, evident from five minutes post administration.^{9,10}

Thirty healthy controls, without a clinical history of AR or AC or SAC were also treated with olopatadine drops to determine if there was a non-specific lubricating effect of olopatadine hydrochloride and included in the study. Patients on antihistamines or refusing to reply to questionnaire or having history of other kinds of allergies or not consenting to participate in the study were excluded.

Ethical approval was obtained from institutional ethics committee. Data was analyzed using Microsoft excel 2010 software using a paired t test. A Pearson correlation coefficient was used to compare relationship between TOSS positivity and presence of additional symptoms.

RESULTS

Among the 110 patients, 65 were females and 45 males, with average age 39.82 ± 7.53 years old. 56 (50.9%) of patients identified themselves as having AC on direct questioning and upon enquiring about specific TOSS symptoms. Additionally, symptoms shown by patients like squint 52 (47.3%), blinking 57 (51.2%), eyelid dermatitis 46 (41.8%) and frontal headache 48 (43.6%) were possible symptoms attributable to AC.

Administration of antihistamine, olopatadine, significantly reduced TOSS scores within 5 minutes of treatment. 89 (80.9%) subjects showed improvement as against 21 (19.1%) of those who showed no change in ocular symptoms. Based on a negative history of AC and baseline TOSS of 0, therapeutic challenge of olopatadine identified 43 (39%) silent sufferers of AC, whereas no effect on TOSS was observed in 30 healthy controls treated with olopatadine. 99 (90%) AC subjects were identified through TOSS symptoms. Plausible indirect AC symptoms detected 96 (87.3%) subjects. However, combining standard TOSS and additional questions detected 105 (95.5%) AC subjects.

DISCUSSION

Eyes and nose were the most common places for the allergens to attack and thus, AC was one of the more common allergic reactions. Most of the times AC was mild, so the patients did not seek medical help and it went unnoticed. Repeated reactions of the allergens caused it to become severe.⁴ In a study by Singh et al the prevalence of AC was 30% of the total OPD in ophthalmology clinics in North India. A study by Gradman et al in Denmark reported 42% of AC to be associated with rhinitis, while 30% had eczema and 24% had asthma.¹¹

In the study by Wade et al females were more in number than males with AC, but like our study, this difference too was not significant.¹² Uchio et al also reported higher number of females with AC.¹³ AR was the most common co-morbidity in the present study in more than 76% of the patients, followed by asthma in 50% of the patients. The other co-morbidity that was associated with allergic conjunctivitis was allergic dermatitis. Rasario et al reported that most of the children with AC had AR, resulting in a lower quality of life.¹⁴

AC was identified in 50.9% of patients with AR using direct questioning in relation to history of AC. Specific questioning regarding indirect symptoms increased the incidence of AC in patients with AR to 95.5%. On 30

healthy, non-atopic controls, olopatadine therapeutic challenge was performed to ensure against the non-specific lubricating effect of the eye drop as a lubricant could have improved symptoms. There was no specific improvement in controls that were given this lubricant effect and hence TOSS improvement can be easily attributed to olopatadine. The co-existence of AC was well recognized in patients with AR although co-reporting frequency may be as low as 40%.¹⁵ Under-recognition of allergic conjunctivitis may be due to patients and physicians paying more attention to allergic co-morbidities such as AR or rhinitis.¹⁶ This study further suggested that approximately 39% of AR patients felt their symptoms represented as normal which confirmed the assumption that there was an under-appreciation of symptoms, even when prompted with specific questions and the value of a therapeutic challenge. This was significant because the presence and lack of treatment of AC contributed negatively to their quality of life.

Being based upon direct survey questionnaire, the limitations of such a study could be the influence that other people or circumstances could play on the answers conveyed by the patients.

CONCLUSION

In many of the cases ocular allergic reaction is overlooked as a minor discomfort and patients do not come to the hospital and seek medical attention. They would reach to a health care facility only when the symptoms become more severe. The screening questions could identify only about 56% of the patients with AC. Symptoms of blinking, squinting, eyelid dermatitis and frontal headache and use of olopatadine hydrochloride eye drops can help identify patients with silent symptoms.

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