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Allergic conjunctivitis among study population: A clinical study

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Abstract
Background: Conjuctivits is the inflammation of the conjunctiva and if the cause is allergy, it is known as allergic conjunctivitis. The present study was conducted to report the cases of allergic conjunctivitis in study population.
Materials & Methods: It included 580 school children of both genders. All underwent vision assessment by a refractionist and a slit lamp examination by an ophthalmologist. Allergic conjunctivitis was confirmed by the presence of papillae in the upper tarsal conjunctiva, redness of the eyes, and presence of itching and burning. All signs and symptoms were recorded.
Results: Out of 580 patients, boys were 310 and girls were 270. The difference was non-significant (P-0.1). Age group 5-10 years had 105 boys and 90 girls, 10-15 years had 130 boys and 110 girls and 15-20 years had 75 boys and 70 girls. The difference was non- significant (P> 0.05). Itching was seen in 305 boys and 268 girls, redness in 286 boys and 251 girls, discharge in 166 boys and 132 girls, watering in 302 boys and 252 girls and papillae in 294 boys and 262 girls. The difference was non- significant (P> 0.05). The common type was seasonal AC (325) followed by perennial AC (180), atopic AC (25) and vernal keratoconjuctivitis (15). The difference was significant (P< 0.05).
Conclusion: It is a common eye disease. The most common etiology is allergic reaction due to allergens. Common symptoms are redness and itching. Boys had higher prevalence than girls.

Keywords: allergic, conjuctivits, keratoconjuctivitis

Introduction

Allergic conjunctivitis (AC) is a common eye infection and prevalence is increasing day by day. Conjuctivits is the inflammation of the conjunctiva and if the cause is allergy, it is known as allergic conjunctivitis. Hay fever is considered to be the main etiology. However, there can be different causes in different patients. Clinically patient experiences redness of the conjunctiva is basically because of vasodilation of the peripheral small blood vessels, excessive watery discharge from eye, edema of the conjunctiva etc. If this is combined with rhinitis, the condition is termed allergic rhinoconjunctivitis [1]. The most common feature is the itching in the eye which worsens if the treatment is not taken. It is seen in more than 75% of the sufferers. Symptoms are usually worse for patients when the weather is warm and dry, whereas cooler weather with lower temperatures and rain tend to assuage symptoms. There can be loss of vision in severe cases. This infection is quite common among children. Among various causative factors, smoke and air pollutant are the common [2].

The International Ocular Inflammation Society (IOIS) classified allergic conjunctivitis (AC) into seasonal allergic conjunctivitis (SAC) and perennial allergic conjunctivitis (PAC). It also involves atopic keratoconjunctivitis (AKC), vernal keratoconjunctivitis (VKC), giant papillary conjunctivitis (GPC) and contact dermatoconjunctivitis (CDC). AC can be seen with other allergic diseases such as asthma, atopic dermatitis or food allergy, though it is particularly associated to allergic rhinitis. It affects the patients quality of life, affects daily day to day activities [3].

It is a self-limiting inflammatory disease process. It is caused by an IgE-mediated hypersensitivity mechanism resulting from direct contact of the allergen with the conjunctival surface in sensitized patients– triggering mast cell activation and the release of different mediators. Apart from this, the neurogenic mechanism, adhesion molecules, and other systemic immune mechanisms may play important role in the disease process [4]. The present study was conducted to report the cases of allergic conjunctivitis in study population.

Materials & Methods

The present study was conducted in the department of Ophthalmology. It included 580 school children of both genders. All were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study from institutional ethical committee.

General information such as name, age, gender etc was recorded in case history proforma. All underwent vision assessment by a refractionist and a slit lamp examination by an ophthalmologist. Allergic conjunctivitis was confirmed by the presence of papillae in the upper tarsal conjunctiva, redness of the eyes, and presence of itching and burning. All signs and symptoms were recorded. Children with allergic or other forms of conjunctivitis were prescribed medication. Results were tabulated and subjected to statistical analysis using chi- square test. P value < 0.05 was considered significant.

Results

Table 1: Distribution of patients

Total- 580		
Boys	**Girls**	**P value**
310	270	0.1

Table 1 shows that out of 580 patients, boys were 310 and girls were 270. The difference was non- significant (P-0.1).

Table 2: Age & Gender wise distribution

Age Group (years)	Boys	Girls	P value
5-10	105	90	0.2
10-15	130	110	0.1
15-20	75	70	0.5
Total	310	270	

Table 2 shows that age group 5-10 years had 105 boys and 90 girls, 10-15 years had 130 boys and 110 girls and 15-20 years had 75 boys and 70 girls. The difference was non- significant (P> 0.05).

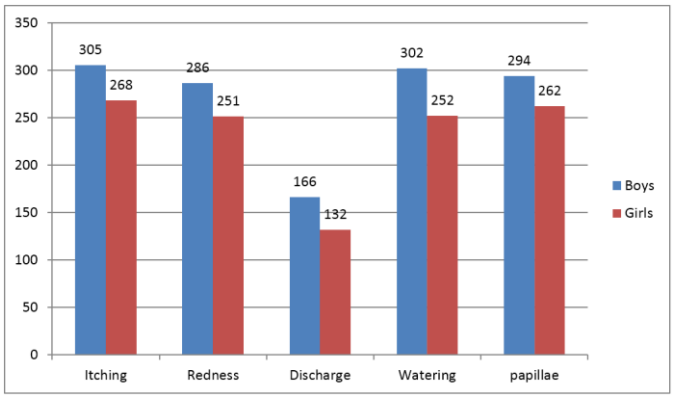

Fig 1: Clinical features in patients

Fig 1 shows that common symptoms and signs were itching in 305 boys and 268 girls, redness in 286 boys and 251 girls, discharge in 166 boys and 132 girls, watering in 302 boys and 252 girls and papillae in 294 boys and 262 girls. The difference was non- significant (P> 0.05).

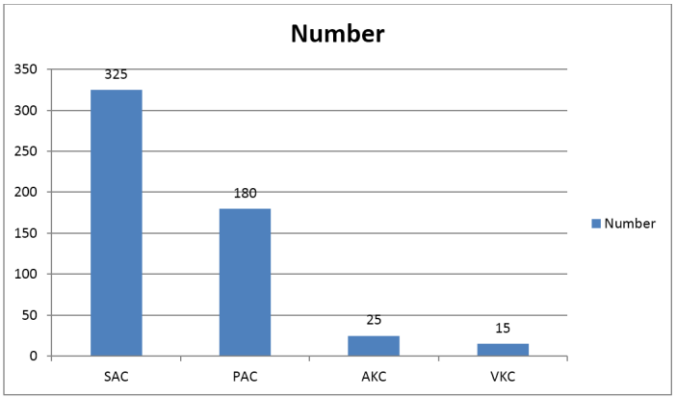

Fig 2: Types of AC

Fig 2 shows that among various types of AC, the common was seasonal AC (325) followed by perennial AC (180), atopic AC (25) and vernal keratoconjuctivitis (15). The difference was significant (P<0.05).

Discussion

The cause of allergic conjunctivitis is an allergic reaction of the body's immune system to an allergen. Allergic conjunctivitis is common in people who have other signs of allergic disease such as hay fever, asthma and eczema. AC is caused by exposure to pollen. It is seen in young population with no gender predilection. It is seen with asthma and allergic rhinitis. There is involvement of both eyes and tearing, redness and itching are common symptoms. Blurred vision and photophobia can be observed in the more severe presentations. Blurred vision can be due to an alteration in the composition and stability of the tear film in >78% of all patients [5]. The present study was performed among school children and the cases of AC were recorded.

In this study, out of 580 children boys were 310 and girls were 270.

We found that maximum patients were seen in age group 10-15 years (130 boys and 110 girls) followed by age group 5-10 years (105 boys and 90 girls) and 15-20 years (75 boys and 70 girls). This is in agreement with Bekebille *et al*. [6] We observed that common symptoms and signs were itching, redness, discharge and papillae. More than 90% of the patients had itching, redness and papillae. Only 50% had watering eyes. This is similar to Husain *et al*. [7]

Among various forms of AC, seasonal allergic conjunctivitis (SAC) and perennial allergic conjunctivitis are the common two acute allergic conjunctival disorders. SAC is the most common ocular allergy. In present study also we observed that SAC are seen in 325 patients. The feature of this form is itching and pink to reddish eyes.

Atopic keratoconjunctivitis and vernal keratoconjunctivitis are chronic allergic diseases. The pathophysiology causes eosinophils, conjunctival fibroblasts, epithelial cells, mast cells, and TH2 lymphocytes aggravation leading to AC. It is seen in young adults. In our study we observed 25 cases of AKC. VKC is a mostly observed in children and most common features are redness and itching. In our study we observed, 15 cases of VKC. This is similar to Singh *et al*. [8]

Management includes use of antihistamines in most of the cases. Diphenhydramine and chlorpheniramine are commonly used as treatment. People treated with H1 antihistamines exhibit reduced production of histamine and leukotrienes as well as downregulation of adhesion molecule expression on the vasculature which in turn attenuates allergic symptoms by 40–50% [9].

Other modalities includes cold compresses, eyewashes with tear substitutes, and avoidance of allergens, mast cell stabilizers etc. Corticosteroids are used in severe forms of allergic conjunctivitis such as vernal keratoconjunctivitis (VKC) and atopic keratoconjunctivitis (AKC).

The diagnosis is confirmed by a family or personal history of atopic alterations, and positive skin tests in response to the suspect seasonal allergens. However, in some cases skin testing is not determinant, since some studies have found that up to 47% of all patients can show sensitization to perennial allergens [10].

Conclusion

It is a common eye disease. The most common etiology is

allergic reaction due to allergens. Common symptoms are redness and itching. Boys had higher prevalence than girls.

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