RESULTS OF SKIN PRICK TEST IN PATIENTS WITH ALLERGIC RHINITIS IN TERTIARY CARE HOSPITAL.

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ABSTRACT

Objective:

To find out results of positive skin prick test (SPT) reaction among patients with allergic rhinitis presenting in tertiary care hospital.

Material & Methods:

One hundred patients who presented to the Out Patient Department of ENT-HNS of TUTH with clinical diagnosis of allergic rhinitis were included in the study from 2015 to 2016. Patients on corticosteroids, beta-blockers, asthmatics were excluded from the study. SPT was carried out on the volar aspect of the forearm. Each drop of allergen were kept in the previously marked spot on the forearm. Lancet was used to prick the skin. Results of the SPT were noted at 15-20 minutes. Histamine was taken as positive control and normal saline as negative control.

Results:

Out of 100 patients tested, 55 were male and 45 female. The mean age of patient was 29.23 years. The most common allergen found was Mites (D. farina) 71.42% followed by Mites (D. pteronyssinus) 65.47% and Blomia species 64.28%. Other positive aeroallergens found were House dust, Cotton dust, Wheat dust, Grain dust, Paper dust, Hay dust, pollens and fungi like Candida Albicans, Aspergillus Niger, Aspergillus Flavus, Rhizopus Nigricans, Curvularia Lunata. Monosensitization was found in 15.47% of positive cases whereas 84.52% patients had polysensitization.

Conclusion:

SPT can be used reliably to detect aeroallergen sensitivity in patients with allergic rhinitis.

Key words: Allergic rhinitis, Mites, Skin prick test.

INTRODUCTION

Allergic rhinitis(AR) is a common IgE mediated hypersensitivity reaction that leads to the symptoms of rhinorrhoea, nasal obstruction, itchiness and recurrent sneezing. Prevalence of AR in Indian population is around 30% and its incidence is on rising trend.[1] There is a positive association of allergic rhinitis and development of bronchial asthma.[2] Hence it is important to identify the condition and treat it. Diagnosis is done by history of patients with the symptoms of nasal allergy, aggaravation of symptoms with exposure to certain environment and certain laboratory tests like total serum IgE, specific serum IgE (RAST), skin prick test(SPT). Diagnosis in our country is usually by clinical means. Skin prick test is a safe, easy and fast technique to diagnose the trouble causing allergens. Other lab tests results take time to be reported. SPT gives the result within few minutes and the result is visible to the patient which is an advantage of the test.[3] SPT can thus be used routinely in allergic patients and guide their management further. The objective of our study was to find out aeroallergen sensitivity in patients with allergic rhinitis.

MATERIALS AND METHODS

The study was done in the department of ENT-HNS at TU Teaching Hospital from 2015-2016. Patients with diagnosis of allergic rhinitis based on the history who consented for the procedure were enrolled in the study. It was office based procedure. A brief history was taken. Patients on

corticosteroids, beta blockers, bronchial asthma or those with skin conditions like dermatographism, eczema were excluded from the study. Patients taking antihistamines were asked to stop the drug for at least 3 days prior to the test.

Performing the test: The volar aspect of forearm was chosen as the site for performing skin prick test. Skin was marked with pen for the individual allergens. Single drop of allergen were kept in each site and a distance of at least 1 cm was maintained in between. Histamine was used as positive control and normal saline as negative control. Lancet was used to prick the skin. Following the procedure, the result was read at 15-20 mins. Appearance of the wheal and erythema were measured with a scale. Appearance of wheal >/= 3 mm were taken as positive.[3] If positive control showed no results, the test was discarded.

Allergen tested were Mites (D farina, D Pteronysinus), Blomia species, House dust, cotton dust, Wheat dust, Grain dust, Fungi and pollens. Maximum 18 to 20 allergens were tested in the arm.

RESULTS

A total of 100 patients consented for the procedure and were enrolled in the study. There were 55 male and 45 female. The mean age of the patient was 29.23 years ranging from 16-61 years. Positive skin prick test was found in 84% patients. The table below enlists the common type of allergens found.

Table 1 : Common Allergens

Allergens	No. of patients with positive results (%)
Blomia species	54(64.28%)
Mites (D. farina)	60(71.42%)
Mites (D.pteronyssinus)	55(65.47%)
House dust	18(21.42%)
Cotton dust	11(13.9%)
Wheat dust	12(14.28%)
Grain dust	13(15.47%)
Paper dust	3(3.57%)
Hay dust	4(4.76%)
Candida albicans	1(1.19%)
Aspergillus Niger	3(3.57%)
Aspergillus flavus	2(2.38%)
Rhiizopus Nigricans	1(1.19%)
Curvularia Lunata	2(2.38%)
Pollen	10(11.9%)

The mites were the most common allergens with positive skin prick test followed by dust allergens. Pollens and fungi were also found to be positive in few cases. Monosensitization was found in 15.47% of positive cases whereas 84.52% had sensitization to multiple allergens. No adverse reactions like anaphylaxis were found during the study.

DISCUSSION

Around 400 million people in the world suffer from allergic rhinitis.[4] The findings of positive skin prick test in patients with allergic rhinitis helps in diagnosing allergic rhinitis and also gives the patient idea about his/her disease. Its specificity and sensitivity are 70-95% and 80-97% respectively. Combined with history its positive predictive value reaches 97-99%.[5] Our study found 84% of allergic rhinitis patients were positive to some allergens during SPT. While a metaanalysis done in Iran found a positive rate of 59% only.[6] Similarly Kumar et al in a study done in India found that around 70% of patients showed at least one allergen positive during SPT.[2] Commonly found aerooallergens in India were pollens, dust mites and fungi.[7] Mites are common indoor allergens. Most commonly affecting mites are of genus Dermatophagoides with species like Farinae, Pteronyssinus and Blomia. Increased prevalence of dust mites were found in homes of patients who suffered from asthma in different regions of United States.[8] Our study also found that most of the patients had one or more allergy to the mites. Studies show increased prevalence of mites in home with increased humidity. Thus areas like carpet with high humidity can harbor mites in houses. Pollens are responsible for seasonal variant of allergic rhinitis and depends on the local flora of the region. Life style modifications can be advised for the patients with positive tests like avoidance of allergen, regular dusting of carpets, bedsheets, curtains and getting rid of fungus. Patients with pollen allergy can be advised for prophylactic corticosteroid spray weeks before the season. It also provides the patients with other options of treatment like immunotherapy. Immunotherapy although not currently approved for use in Nepal, is the only disease modifying treatment that can alter the natural history of disease.

CONCLUSION

Thus we conclude that skin prick testing is a reliable method of detection and diagnosis of allergic rhinitis. Further studies with insects and animal dander are also required to increase the sensitivity of the test.

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