UTILITY OF SERUM ALLERGY TEST IN PATIENTS WITH CHRONIC URTICARIA

Bhattarai S, Pradhan K, Sharma S, Pant AD

ABSTRACT

INTRODUCTION:
Chronic urticaria (CU) is a common skin disorder affecting 15–20% of the people in the general population. It is a frequent disease which presents with wheals, angiooedema or both and lasts for over six weeks or more.

OBJECTIVES:
To determine the etiology of IgE specific allergens in the causative of CU in the Nepalese population

MATERIALS & METHODS:
A prospective cross sectional study was carried out between November 2014-October 2016 on all patients diagnosed as having CU. Blood samples were taken from all patients and a semiquantitative determination of IgE antibodies against a panel of individual allergens was done and data analyzed and interpreted in terms of numbers and percentages.

RESULTS:
Three hundred and fourteen patients were included in the study with 56% (175) being female and 44% (139) being male. The age of the patients ranged from 5 years to 84 years with a mean of 37.33±14.39 years. The duration of the disease also ranged from 0.15 to 20 years in which 116 (36.9%) patients presented with disease of less than 6 months duration while 163 (51.9%) patients had the disease for more than 6 months.

Two hundred and seventy nine patients (88.9%) showed a positive test to the allergens amongst which most were allergic to plants which included weeds and grass.

CONCLUSION
In patients with CU whenever possible it is advisable to send the patient for serum allergy test to determine the causative agent, the avoidance of which can help in the management of urticaria in troublesome patients.

KEYWORDS:
Chronic Urticaria, Serum allergy test

1. Associate Professor, Department of Dermatology and Venereology, Kathmandu Medical College and Teaching Hospital, Kathmandu, Nepal
2. Medical Student, Kathmandu Medical College and Teaching Hospital, Kathmandu, Nepal
3. Associate Professor, Department of Pathology, Maharajgunj Medical Campus, Tribhuvan University Teaching Hospital, Maharajgunj, Kathmandu, Nepal

For Correspondence:
Dr Sabina Bhattarai
Associate Professor
Department of Dermatology and Venereology
Kathmandu Medical College and Teaching Hospital
Sinamangal, Nepal
Email: sabeenab@gmail.com
INTRODUCTION

Chronic urticaria (CU) is a common skin disorder affecting 15–20% of the people in the general population. It is a frequent disease which presents with wheals, angioedema or both and lasts for over six weeks or more.

CU can be classified into three clinical subgroups, spontaneous (80%), physical (10%) and special forms (10%) based on its duration, frequency and causes. Multifactorial etiologies have been implicated in the causation of CU, the autoimmune processes being the most common followed by intolerance to food or drugs and infectious diseases. Most patients with CU have no exogenous cause but for some it is extremely disabling. The search for correlating CU with different sources and trying to refrain from foods that are likely to implicate the disease is very demanding to few patients to cause an urticaria free life.

There are no prevalent studies on medline search to show the causative allergens which could implicate the causation of wheals in the Nepalese population using serum allergy test. Our study thus aimed to determine the causative etiology of IgE specific allergens in the causative of CU.

MATERIALS & METHODS

Patient Inclusion:

A prospective cross sectional study was carried out between November 2014-October 2016 on all patients diagnosed as having CU. The study protocol and all the amendments were reviewed and approved. The demographic data regarding age, gender and duration of the disease were taken and patients with history of inducible urticaria and other autoimmune diseases were excluded from the study.

The patients were advised to stop the antihistamine for 3 days prior to the serum allergy test and blood samples were taken after a written informed consent was given by all patients.

Laboratory Method:

RIDA AllergyScreen, manufactured by R-Biopharm AG in Germany, is an enzyme immunoassay done on a nitrocellulose membrane. It is used for semiquantitative determination of IgE antibodies against a panel of individual allergens. 250 microliters of serum is mixed with wash buffer, antibody, conjugate, and substrate for varying intervals respectively, for a total time of 130 minutes. Then, evaluation is done on the RIDA X-Screen with the help of software, and results are given in IU/ml. The test is valid when the background has disappeared and there is a strong positive control band.

Standard Panel 1 was used in our series to determine the causative allergens which includes 80 different allergens (Table 1)

Statistical Analysis:

Datas were compiled, entered and analysed using SPSS version 2.6. Continuous measures were expressed as means ± standard deviations for normally distributed data and medians and percentiles for non-normally distributed datas. Descriptive statistics were used to describe demographic datas.

RESULTS

Demographic Data:

Three hundred and fourteen patients were included in the study with 56% (175) being female and 44% (139) being male with a female : male ratio of 1.2:1. The age of the patients ranged from 5 years to 84 years with a mean of 37.33±14.39 years. The duration of the disease also ranged from 0.15 to 20 years with a female: male ratio of 1.2:1. The age of the patients ranged from 5 years to 84 years with a mean of 37.33±14.39 years. The duration of the disease also ranged from 0.15 to 20 years with a mean of 37.33±14.39 years. The duration of the disease also ranged from 0.15 to 20 years with a mean of 37.33±14.39 years.
Alergy test result:

Among the 314 patients, 279 (88.9%) patients showed a positive test to the allergens whereas 35 (11.1%) were negative to the test.

Among the people who tested positive for allergies, most were allergic to plants, of which weeds and grass were strongly allergic in 60 patients and slightly allergic in 92 patients. The allergic profile of the other allergens are shown in table 2 and table 3.

DISCUSSION

The prevalence of CU has been estimated to be around 0.5-5%. It is a common cause of distress to many patients and can severely affect the quality of lives in some. However the cause cannot be always identified in individuals with CU and the relapse occurs when the drugs are discontinued by the physician and sometimes by the patient themselves. This study tried to find the common allergies if any using the serum test for standard provided allergens.

Our study also showed a female preponderance and a similar average age of the patients enrolled as reported by Vohra S all and Zhong et al. 17 The average duration of the disease is said to be 2-5 years of which as reported by Gaig and Kozel et al, 70% of patients present with the disease duration of more than 6 months. Our study also showed the prevalence of more than 51.9% of patients with urtica of more than 1 year duration .

The factors that are reported to predict longer duration of the disease or the severity of the disease is very limited in the literature. The commonest implicated symptoms of food induced allergic reaction has been reported as urticariathough IgE-mediated food allergy is rarely the underlying cause of chronic spontaneous urticaria. 17

The positive test showing allergens causing food allergy and urticaria was found in 232 (73.8%) patients. The commonest reactions were to meat and sea food like crab, shrimp and haddock in 90 (28.66%) patients followed by common foods like egg white, milk powder, chicken, pork and legumes etc in 89 (28.3%) and fruit allergy to 53 (16.8%) patients. Ninety five (95.5%) of which showed slight allergy while 4.5% of the patients showed significant allergy.

Food allergy has been reported as 13.1% by Chung et al 17 while a Chinese study reported a 22% positivity in the Ig E specific test 17. Though the food tested were similar in both studies our study found a greater prevalence because of low availability and non sensitization of sea foods in a land locked country and hence more the allergic reaction.
CONCLUSION

CU thus can be controlled not only by specific elimination of diets but also by environmental control measures to reduce exposure to indoor allergens which in turn will contribute to symptom improvement in sensitized CU patients.

ACKNOWLEDGMENT:

A special thanks to BioMED reference Laboratory for conducting the tests and providing us with the results.

REFERENCES