Chronic Idiopathic Urticaria and its association with antithyroglobulin antibody

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ABSTRACT

INTRODUCTION: Chronic Idiopathic Urticaria is one of the common skin disorders encountered in dermatological practice. Association of chronic urticaria and thyroid autoimmunity has been seen in various studies. Autoimmune phenomena have been regularly associated with chronic urticaria in adults but data are sparse. The objective of this study is to find out the relationship of chronic idiopathic urticaria with antithyroglobulin antibody and autoimmune thyroid disease.

METHODS: Over period of one year 102 patients with chronic idiopathic urticaria were enrolled and they were sent for determination of antithyroglobulin antibody. For those patients who showed antithyroglobulin antibody test positive, thyroid function test was done.

RESULTS: Antithyroid (antithyroglobulin) antibody was found to be positive in 7 patients (6.86%) out of 102 and all of them were females. Among 7 female patients with positive antithyroid antibody, hypothyroidism was seen in only 1 (14.2%) case and rest 6 (85.7%) had euthyroid. Majority of the patients were females (67.64%), the incidence was high among the young adult group aged between 20-29 yrs (30.4%). Most of the patients presented with urticaria (75.5%) and others with urticaria and angioedema (23.5%), angioedema alone (1%) and dermographism was found in 15 (14.7%).

CONCLUSION: Antithyroglobulin antibody is found to be associated with chronic idiopathic urticaria, more frequently in females. Some of the patients may develop thyroid disease in future inspite of their initial thyroid function being normal.

KEY WORDS: Chronic idiopathic urticaria, antithyroglobulin antibody, hypothyroidism

INTRODUCTION

Urticaria is a frequent dermatosis observed in 15-25% of general population and 25% of them suffer from Chronic Urticaria (CU). It is a term used to describe an eruption of weals (hives/nettle rash) which are evanescent, well demarcated, superficial, erythematous or pale swellings of the dermis, usually associated with itching. They occur anywhere in the body including scalp, palms and soles. Weals generally last a few hours and resolve within 24 hours, passing through a macular erythematous phase, but nearly always leaving the skin with a normal appearance.

Urticaria / angioedema is considered to be acute if lasts less than 6 weeks. Episodes of urticaria /angioedema persisting beyond 6 weeks are considered chronic and most likely represent idiopathic urticaria or urticaria that is autoimmune. Despite extensive investigations, no cause is identified in majority of patient. However, autoimmunity may be a contributing factor. In the past there have been reports of association of CIU with Autoimmune Thyroid Disease (AITD) and thyroid auto antibodies such as antithyroglobulin antibodies could
be found in some patients with CU. In one study, the frequency of CU was higher in patients with thyroid disease and thyroid auto antibodies than in patients without thyroid auto antibodies. This suggests a relationship between CU and thyroid autoimmunity.

It is important to determine whether there is an association between thyroid autoimmunity and chronic idiopathic urticaria because CIU represents a large number of patients in our outpatients departments and is difficult to treat. Patients can benefit if the exact relationship (if any) is found out and accordingly guidelines regarding routine antithyroid antibody testing of patients with chronic idiopathic urticaria can be developed.

METHODS

This study was conducted at National Academy of Medical sciences, Bir Hospital in the department of Dermatology for a period of 1 year from August 2007 to July 2008. Any patient presenting with typical features of urticaria, angioedema or both (urticaria and angioedema) were included in the study while those patients with urticaria <6 weeks duration, physical urticaria and urticarial vasculitis and patients taking steroid were excluded from the study. Patients were enrolled only after a written informed consent had been obtained.

Demographic data such as age, gender and duration of illness, relation to food and drugs, familial association and symptoms of patient were collected using a checklist and the patient’s profile was recorded in pre designed Proforma. Then they were referred to National Central Lab, Teku for determination of antithyroglobulin antibody. For those patients who showed positive anti-thyroid antibody test, thyroid function test (Free T3, T4 and TSH) was done.

The data analysis was done using appropriate statistical methods.

RESULTS

Hundred and two diagnosed cases of Chronic idiopathic urticaria were enrolled in the study in the period of one year. Out of this 67.64% (69) patients were female while 32.35% (33) were male with the mean age of 34.1 years and 29.46 years respectively. Most of the patients presented with urticaria (75.5%) followed by urticaria and angioedema (23.5%), and angioedema alone (1%) as shown fig 1.

A positive family history of CIU was found in 24.5% (25), association with food (egg, red meat, fish and prawn, nuts and beans etc) in 21.5% (22), history of systemic illnesses (peptic ulcer diseases, rheumatoid arthritis, diabetes etc) in 13.75% (14) and association with drugs (Aspirin, Penicillins, ACEIs etc) in 4.9% (5) cases. (table 1).

On examination of antithyroid (antithyroglobulin) antibody, seven patients (6.86%) out of 102 were found to be positive and all of them were females with p value 0.05. Among these patients with positive antithyroid antibody, hypothyroidism was seen in only 1(14.2%) case and rest 6 (85.7%) were found to be euthyroid (table 2).

<table>
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<tr>
<th>Association with</th>
<th>Total number of patients (n =102)</th>
<th>Male (n = 33)</th>
<th>Female (n = 69)</th>
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<td>Drug</td>
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<td>5 (7.2%)</td>
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<tr>
<td>Familial</td>
<td>8 (24.2%)</td>
<td>2 (6.1%)</td>
<td>12 (17.4%)</td>
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<tr>
<td>Systemic diseases</td>
<td>2 (6.1%)</td>
<td>1</td>
<td>12 (17.4%)</td>
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<table>
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<tr>
<th>Thyroid function test</th>
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<th>Male (n=33)</th>
<th>Female (n=69)</th>
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<tr>
<td>Hypothyroidism</td>
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<tr>
<td>Euthyroid</td>
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DISCUSSION

As there are many controversies regarding the exact etiology of Chronic Idiopathic Urticaria, this study was carried out to know whether there is any relation between CIU and Antithyroid (Anti thyroglobulin) antibody and to calculate the prevalence of Chronic Idiopathic Urticaria.

Out of total number of hospital attendances (33,675) in the out patient Department of Dermatology of Bir Hospital in the year 2007-2008, patients with urticaria constituted 2.65% (891) and CIU cases constituted 1.76 % (594).

Chronic urticaria is likely to be present at some time in about 25 % of patients with urticaria. In a retrospective study carried out at the Department of Dermatology, Siriraj Hospital, Bangkok, out of 450 patients with CU, 337 patients (75%) were diagnosed as CIU. In our context, out of 891 of urticaria patients, 594 (66.7%) were diagnosed as CIU in year 2007/08. This variation may be because of small sample size and geographical alteration.

CIU has strong predisposition for female sex. It is approximately twice as common in women as in men, especially of middle age. In the National Ambulatory Medical Care Survey data from 1990-1997 in the United States, women accounted for 69% of the patient visits. Our study also shows similar result. Out of 102 CIU patients enrolled, females represented large number 67.64% (mean age 13.49 yrs with standard deviation of 15.019). The presence of CIU predominantly in females could be due to the genetic factors, increased susceptibility to allergens, high oestrogen levels, less tolerance, and their frequent exposure to chemicals, detergents and allergens.

An association also exists between CIU and positive family history, systemic illness and drugs. Ghosh et al reported relation of CU, 5% with food and 2% with medication. Levy Y, Segal N, et al reported 4 patients of CIU with positive family history out of 187 patients in one study. We found 25.5% of our CIU patients had positive family history of urticaria. Probably environmental, racial and genetic factors may be responsible for this increased trend in our context.

Angioedema occurs concomitantly with CIU in approximately 50% of cases. Dermographism, a most common form of physical urticaria can be found in 22% of chronic idiopathic urticaria according to Soter NA, Kaplan AP. In this study 75.5% of the CIU patients presented with urticaria alone followed by urticaria and angioedema 23.5 %, angioedema 1 % and dermographism 14.7 %.

There are many reports/studies associating CIU with antithyroid antibodies but marked variation is found which may be due to environmental and genetic difference. Thyroid autoimmunity has been poorly correlated with CIU in some studies but there are many studies where thyroid autoimmunity has been implicated as a cause of CU, and anti-thyroid antibodies have been found in patients with CU. The association between thyroid autoimmunity and CIU has long been recognized, although prevalence rates differ in the studies reported to date (from 12 to 29%) for thyroid antibodies (anti thyroperoxidase and anti thyroglobulin) and when positive thyroid functional status assessment is advised.

A study was conducted by Kandeel AA et al which concluded coincidence of Hashimoto thyroiditis (HT) and CIU was a commonly observed phenomenon in Western New York. Gaig P et al in Spain reported 14.7% (25) of his CIU cases out of 170, had an antithyroglobulin or antiperoxidase antibody positive and all but three were women.

The key finding from this study is that our 7 (7.14%) patients with CIU out of 102 tested for antithyroglobulin antibody turned out to be positive and all of them were female. This finding is statistically significant with p value of less than 0.05. This outcome indeed can be correlated with the other similar type of the studies conducted in different countries. In Israel 4.3% of CIU patients had antithyroid antibody positive and all were females. Similarly in UK 3.64%, Turkey 11.7%, Denver 14.4% CIU cases had thyroid autoimmunity. In this study only antithyroglobulin antibody was tested (due to lack of lab facility and cost factor) whereas in most of other studies antithyroglobulin and antiperoxidase antibody were screened. If we had been able to investigate both the thyroid antibodies probably the outcome would have been much higher.

According to Zauli D et al most patients with urticaria who have associated thyroid autoimmunity are euthyroid. Monitoring of thyroid function is highly recommended because of the risk of hyperthyroidism, especially in the elderly.
In present study out of 7 CIU patients with positive antithyroglobulin antibody, 6 of them were euthyroid and 1 patient was found to have subclinical hypothyroidism which is consistent to other studies. The results of this study which shows a significant relation between chronic idiopathic urticaria and antithyroglobulin antibodies should be of interest to the practicing dermatologists since it provides evidence for a link between CIU and thyroid autoimmunity. Despite of expenses it is justifiable to screen all the cases with CIU especially females for antithyroid antibody. Furthermore thyroid function test is advised for patients with positive antithyroid antibodies. Even when the initial test shows an euthyroid picture they should be followed up regularly as they have risk of developing hyperthyroidism or hypothyroidism later.

REFERENCES