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A Case Control Study of Thyroid Profile In Chronic Urticaria Patients At Sms Hospital And Jaipur, Rajasthan

[1]Dr. Himmat Singh Kharra , [2]Dr. Punnet Agarwal , [3]Dr. U. S. Agarwal

Department of Dermatology, Venereology and Leprology, S.M.S. Medical College & attached hospitals, Jaipur, Rajasthan

Corresponding Author: Dr. Himmat Singh Kharra , Department of Dermatology, Venereology and Leprology, S.M.S. Medical College & attached hospitals, Jaipur, Rajasthan

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Abstract

Background: To study the Thyroid profile in chronic urticaria patients.

Methods: Hospital based case control study conducted at Department of Dermatology, Venereology and Leprology of Swai Man Singh Medical college and attached hospital, Jaipur, Rajasthan.

Results: In our study mean serum level of T4 in case group was 1.17 ± 0.41 and in control group was 1.16 ± 0.23, but statistically this is not significant(p value-0.753). In our study mean serum level of TSH in case group was 4.25 ± 11.19 and in control group was 3.06 ± 1.42, but statistically this is not significant(p value-0.152).

Conclusion: We concluded that all patients with CU should be evaluated thyroid functions test should be done which may be useful in management of treatment resistant cases.

Keywords: T4, T3, TSH, Chronic urticaria

Introduction

Clinically, urticaria is classified into: Acute <6weeks ,Chronic>6 weeks(2) Chronic urticaria includes physical urticaria (cold, pressure, vibratory, UV light and others) and both chronic idiopathic urticaria (CIU) and autoimmune urticaria.[1]

The autoimmune origin is the most accepted hypothesis advanced to explain inappropriate activation and degranulation of mast cells in urticaria. This theory is supported by the clinical association of CU with various autoimmune disorders, the frequent detection of circulating autoantibodies, positive association with HLA subtypes DRB*04 and DQB1*0302 and therapeutic response to plasmapheresis and intravenous immunoglobulin [2-4]

An association between chronic spontaneous urticaria and autoimmune thyroid disease was first reported by Leznoff and Sussman [5] and confirmed subsequently by many others. The association is particularly strong at 30% for patients with a positive basophil histamine release test as a marker of functional autoantibodies. [6] There also appears to be a higher frequency of

autoimmune disease in patients with autoimmune urticaria [7]

Materials And Methods

Study type: Hospital based study

Study design: Case control

Study location: Department of Dermatology, Venereology and Leprology of Swai Man Singh Medical college and attached hospital, Jaipur, Rajasthan

Study duration: 2018-2019

Inclusion criteria

Patients with chronic urticaria at skin OPD SMS Hospital Jaipur.

Patient gives written informed consent to participate.

Controls- age and sex matched cases of healthy control from staff/case other than chronic urticaria at skin OPD willing to give consent.

Exclusion criteria

Urticaria < 6 weeks

Patients taking antihistaminics in past 1 week or steroids or any other immunosuppressive medications in past 2 weeks

Pregnant or lactating women

Severely ill patients and immunocompromised patients

Data collection

Eligible patients who meet the inclusion and exclusion criteria included in study.

Both newly diagnose and old cases of chronic urticaria after giving informed consent will be randomly divided in two groups.

Their demographic profile, clinical history and dermatological examination (site of involvement, size of plaque and previous treatment history) will be noted in a predesigned proforma.

Statistical analysis

Continuous data would be summarized in the form of mean and standard deviation. The difference in mean would be analysed by using student't'test. Categeroical data would be expressed in form of proportion difference would be analysed by using chi square test. The level of significance would be kept as $P<0.05$ for all statistical analysis.

Observation and Results

Table 1: Age and sex distribution amongst case group

Age Distribution	Case		Control	
Age (yr)	No.	%	No.	%
6-30	120	65.22	116	63.04
31-40	34	18.48	33	17.93
41-50	20	10.87	27	14.67
>50	10	5.43	8	4.35
Total	184	100.00	184	100.00
Mean±SD	29.65±11.51		30.11±11.41	
P value	0.739 (NS)			

Above table shows that majority of patients were aged between 6 -30 year in both study groups. Application of Chi square test reveals that the study groups did not vary significantly in their age composition (P>0.739).

Table 2: Comparison between triiodothyronine(T3) level

T3 level	Case (N=184)		Control (N=184)	
N- 2.3 to 4.2 pg/ml	No.	%	No.	%
<2.3	18	9.78	5	2.72
2.3-4.2	164	89.13	179	97.28
>4.2	2	1.09	0	0
Mean±SD	2.97±0.69		3.01±0.55	
P value	0.460(NS)			

Above table shows that the mean serum levels of T3 2.97 pg/dl, and 3.01 pg/ml in case and control group respectively. In case group 9.78% patients were hypothyroid and 1.09% patients were hyperthyroid, while in control group 5% patients were hypothyroid and 0 % patients were hyperthyroid. Application of ANOVA showed that the difference in thyroid hormones level among the study groups was not statistically significant(P>0.460).

Table 3: Comparison between tetraiodothyronine(T4) level

T4 level	Case (N=184)		Control (N=184)	
N- 0.89 to 1.76 ng/ml	Mean	SD	Mean	SD
<0.89	14	7.61	2	1.09
0.89-1.76	166	90.22	180	97.83
>1.76	4	2.17	2	1.09
Mean ±SD	1.17±0.41		1.16±0.23	
P value	0.753(NS)			

Above table shows that the mean serum levels of T4 1.17 ng/dl, and 1.16 ng/ml in case and control group respectively. In case group 7.61% patients were hypothyroid and 2.17% patients were hyperthyroid, while in control group 1.09% patients were hypothyroid and 1.09 % patients were hyperthyroid. Application of ANOVA showed that the difference in thyroid hormones level among the study groups was not statistically significant(P>0.753).

Table 4: Comparison between level of thyroid stimulating hormone(TSH)

TSH level	Case (N=184)		Control (N=184)	
N- 0.35 to 5.5 IU/ml	Mean	SD	Mean	SD
<0.35	4	2.17	0	0.00
0.35-5.5	150	81.52	178	96.74
>5.5	30	16.30	6	3.26
Mean ±SD	4.25±11.19		3.06±1.42	
P value	0.152 (NS)			

This table shows that the mean serum levels of TSH 4.25 IU/dl, and 3.06 IU/ml in case and control group respectively. In case group 16.30% patients were hypothyroid and 2.17% patients were hyperthyroid, while in control group 3.26% patients were hypothyroid and 0 % patients were hyperthyroid. Application of ANOVA showed that the difference in thyroid hormones level among the study groups was not statistically significant(P>0.152).

Discussion

Chronic urticaria (CU) is defined as urticaria persisting daily or almost daily for more than six weeks(15). The pathophysiology of CU is not completely understood, although most agree that the central event is activation of cutaneous mast cells. The autoimmune origin is the most accepted hypothesis advanced to explain inappropriate activation and degranulation of mast cells in urticaria.

During the last decade various studies have been done to gain insight into the pathogenesis of CU. The concept of autoimmune urticaria has evolved over the past decade as evidence for histamine-releasing autoantibodies and their relationship to disease activity has accrued. This subset of urticaria patients have autoantibodies directed against either the high affinity IgE receptor (Fc∈RI), or less commonly against receptor bound IgE itself (28).

In our study mean serum level of T3 in case group was 2.97 ± 0.69 and in control group was 3.01 ± 0.55 , but statistically this is not significant(p value- 0.460).

In our study mean serum level of T4 in case group was 1.17 ± 0.41 and in control group was 1.16 ± 0.23, but statistically this is not significant(p value- 0.753).

In our study mean serum level of TSH in case group was 4.25 ± 11.19 and in control group was 3.06 ± 1.42, but statistically this is not significant(p value- 0.152).

CONCLUSION

We concluded that all patients with CU should be evaluated thyroid functions test should be done which may be useful in management of treatment resistant cases.

References

1. Bernstein JA, Lang DM, Khan DA, Craig T, Dreyfus D, Hsieh F, et al. The diagnosis and management of acute and chronic urticaria: 2014 update. J Allergy Clin Immunol. 2014;133:1270–1277.
2. O'Donnell BF, O'Neill CM, Francis DM, Niimi N, Bar RM, Barlow RJ, et al. Human leucocyte antigen class II associations in chronic idiopathic urticaria. Br J Dermatol. 1999;140(5):853–8.
3. Grattan CE, Francis DM, Slater NG, Barlow RJ M, Graves MW. Plasmapheresis for severe, unremitting, chronic urticaria. Lancet. 1992;339(8801):1078–80.
4. O'Donnell BF, Barr RM, Black AK, Fransis DM, Kermani F, Niimi N, et al. Intravenous immunoglobulin in autoimmune chronic urticaria. Bri J Dermatol. 1998;138(1):101–6.
5. Leznoff A, Josse RG, Denburg J, Dolovich J. Association of chronic urticaria and angioedema with thyroid autoimmunity. Arch Dermatol. 1983;119:636–40. Gruber BL, Baeza ML, Marchese MJ, Agnello V, Kaplan AP. Prevalence and functional role of anti-IgE auto antibodies in urticarial syndromes. J Invest Dermatol. 1988;90:213–7.
6. Wai YC, Gordon LS. Evaluating chronic urticaria patients for allergies, infections, or autoimmune disorders. Clin Rev Allergy Immunol. 2002;23:185–93.
7. OED Online. 2nd ed. Oxford: Oxford University Press; 2000. "Urticaria" The Oxford English Dictionary. 1989.