

ULTRAVIOLET INDUCED LIGHT ERUPTIONS AND ABNORMAL LABORATORY THYROID TEST REPORTS- IS THERE ANY CORRELATION

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ABSTRACT

BACKGROUND

Ultraviolet induced light eruptions (PLE) is the commonest disease due to photosensitivity prevalent globally. Clinically, it was observed that many patients presenting with PLE were either already diagnosed with some thyroid function abnormality or later during the course developed some derangement in Thyroid Function Tests (TFT).

The aim of this study is to study the association between Light eruptions and Thyroid Stimulating Hormone values.

MATERIALS AND METHODS

It was a prospective observational study comprising of 90 subjects. Patients presenting to Dermatological Outpatient Department (OPD) of Index Medical College, Indore, diagnosed as having Polymorphic Light Eruptions were included in the study. After taking informed consent, their TSH levels were analysed and the observations were systematically noted to see how frequently they coexisted.

RESULTS

Thyroid Stimulating Hormone level (TSH) was abnormal in 30% cases of patients with polymorphic light eruptions, out of which TSH was increased in 24.44% (n = 22) individuals and decreased in 5.55% (n = 5) cases.

CONCLUSION

Our study highlights the need to routinely assess thyroid function tests in all patients of PLE, so that an early detection of subclinical hypothyroidism be made. We suggest larger population based studies and detailed thyroid profile evaluation be performed to establish a causal association between the two if any.

KEYWORDS

Photodermatitis, Light Eruptions, TSH.

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BACKGROUND

Ultraviolet induced light eruptions, more commonly Polymorphic Light Eruptions (PLE) is a common disease of photosensitivity. These are usually of recurring nature and manifests due to an abnormal reaction to sunlight (importantly the ultraviolet spectrum of sunlight). The lesions resolve without scarring^{1,2} and any other secondary skin changes. Its association with various dermatological and non-dermatological conditions like Lupus Erythematosus,³ Actinic Prurigo,⁴ Photosensitive Psoriasis,⁵ Hepatitis C virus infections, etc., has been reported. Few reports have also described association of PLE with thyroid function test abnormalities, but as both these conditions are commonly prevalent so it has not been confirmed beyond doubt.^{6,7,8}

It was observed frequently that lot of patients who presented to the outpatient department with PLE were either already under treatment for thyroid disorders or later developed thyroid function test abnormalities leading to a doubt whether the two entities are related or not. Literature available for the same was also limited, so there was a need to find if any significant association between the two exists or not.

Hence, in this study we planned to find out if any correlation exists between PLE and TSH values. The patients who presented to the Skin and VD outpatient department of our facility after being diagnosed as having PLE (Clinically) were advised Thyroid Stimulating Hormone (TSH) test. After evaluating the report, the co-existence of the two was assessed. This study may help us in determining the need to evaluate patients with PLE for thyroid function test abnormalities as a standard procedure, so that subclinical thyroid abnormalities may not be overlooked and they can be timely referred to the physicians for prompt management.

MATERIALS AND METHODS

Sample Size

90 patients diagnosed clinically as having PLE.

Inclusion Criteria

Patients of either sex and any age presenting with Polymorphic Light Eruptions at the Dermatology Outpatient

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Department of Index Medical College Hospital and Research Centre, Indore were included into the study.

Exclusion Criteria

Following patients were excluded from the study -

- Pregnant females.
- Patients with any inflammatory photodermatosis.
- Diagnosed cases of autoimmune connective tissue disorders (DLE, SLE, Scleroderma, etc.) and porphyrias.
- Use of systemic or topical steroid or any drugs causing photosensitivity such as quinolones, tetracyclines, sulfonamides, antimalarials and phenothiazines in last 3 months.
- Patients not giving valid consent for blood test.

Methodology

Patients of either sex presenting to Skin and V.D. Outpatient Department of Index Medical College, Indore, from January 2013 to October 2013 were included and after detailed history and necessary clinical examination the diagnosis of PLE was to be established.

After obtaining an informed consent, patients of PLE were subjected to laboratory tests of Thyroid Stimulating Hormone (TSH) and values were duly noted looking for any abnormality.

RESULTS

Hormones	Levels	PLE Group n (%)
TSH	Increased	22 (24.44)
	Decreased	05 (5.55)

Table 1. Altered Thyroid Stimulating Hormone in Polymorphic Light Eruption Patients

Table 1 shows number of cases with altered TSH levels among patients within PLE. TSH level was increased in 24.44% (n = 22) of PLE cases, whereas it was decreased in 5.55% (n = 5) of PLE cases.

Overall Thyroid Function Abnormalities	PLE Patients n (%)
Yes	27 (30.00)
No	63 (70.00)
Total	90 (100.00)

Table 2. Overall Thyroid Stimulating Hormone Abnormality in Polymorphic Light Eruption Patients

Table 2 shows overall prevalence of thyroid stimulating hormone abnormalities in PLE patients. The prevalence of overall thyroid function abnormalities in subjects was 30% (n = 27). Overall thyroid function abnormalities were not detected in 70% (n = 63) subjects in PLE patients.

DISCUSSION

In our study (Table 1) Thyroid Stimulating Hormone (TSH) abnormalities were found in 30% (n = 27) cases of PLE. These findings were consistent with earlier study by Lata Sharma et al,⁶ where abnormal Thyroid Function Test was seen in 25% in study group and 7% in control group. Similarly, in another study by Seetharam et al⁷ where they sought association of PLE with autoimmune thyroiditis, 25.9% cases reported with abnormal Thyroid Function Test (hypothyroidism only). In our study, Thyroid Stimulating

Hormone was found to be increased in 24.44% (n = 22) of PLE patients and was decreased in 5.55% (n = 5) cases.

Overall thyroid stimulating hormone test abnormalities (Table 2) were found in 30% of PLE patients. As discussed before the overall thyroid function test abnormalities were similar to previous reports, in which Researchers observed significant association with PLE. Among these are reports by Hasan et al,⁸ Seetharam et al⁷ and Lata et al⁶ where they found high prevalence of thyroid function test abnormalities in patients/individuals with PLE.

Limitations of Study

Sample size of 90 patients of PLE is small as both these conditions of PLE and thyroid function abnormalities are common in prevalence by themselves independently.

CONCLUSION

Thyroid Stimulating Hormone (TSH) test levels were frequently found deranged in our patients (in 30% of the cases) with polymorphic light eruptions, which is among the commonest disease of photosensitivity around the world. Among all the conditions, we observed striking association of PLE with increased thyroid stimulating hormone values (24.44%).

As it was clinically observed that many patients with PLE were either on treatment for thyroid disorders or developed them later, our study helps in further validating this association.

We suggest the need of more elaborate studies with large sample size involving larger population at different centres, so that a definite causal relationship between PLE and thyroid function abnormalities can be established.

If causal association is further validated it will help physicians and dermatologists to manage cases of both PLE and thyroid disorders in a better and prompt way, thereby making evaluation of patients coming in outpatient department with PLE for thyroid function abnormalities as a standard procedure, so that no subclinical cases be missed and properly followed up.

REFERENCES

- [1] Clayton R, George S. Haemorrhagic polymorphic light eruption: two cases of a rare variant. *Photodermatol Photoimmunol Photomed* 2006;22(3):166-7.
- [2] Commens C. Polymorphic light eruption sine eruptione and brachioradial pruritus. *Br J Dermatol* 1988;119(4):554.
- [3] Millard TP, Lewis CM, Khamashta MA, et al. Familial clustering of polymorphic light eruption in relatives of patients with lupus erythematosus: evidence of a shared pathogenesis. *Br J Dermatol* 2001;144(2):334-8.
- [4] Grabczynska SA, McGregor JM, Kondeatis E, et al. Actinic prurigo and polymorphic light eruption: common pathogenesis and the importance of HLA-DR4/DRB1*0407. *Br J Dermatol* 1999;140(2):232-6.
- [5] Ros AM, Eklund G. Photosensitive psoriasis. An epidemiologic study. *J Am Acad Dermatol* 1987;17(5 Pt 1):752-8.

- [6] Lata S, Sachin L, Singh SK. Thyroid function tests in cases of polymorphic light eruption: a case-control study. *Indian Dermatology Online Journal* 2014;5(3):291-5.
- [7] Seetharam KA, Sridevi K. Association of polymorphic light eruption and autoimmune thyroiditis 2010;76(6)704-5.
- [8] Hasan T, Ranki A, Jansen CT, et al. Disease associations in polymorphous light eruption. A long-term follow-up study of 94 patients. *Arch Dermatol* 1998;134(9):1081-5.