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Thyroid profile in lichen planus patients from kashmir valley

Sheikh Manzoor, Seema Qayoom, Javaid Sultan and Yasmeen J Bhat

Department of Dermatology, STD & Leprosy, SKIMS Medical College, Srinagar.

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Correspondence: Dr Sheikh Manzoor

e-mail: drsheikhmanzoor@yahoo.com

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Abstract

Objective: The aim of this study was to investigate the thyroid function status among patients of lichen planus.

Methods: Fifty (27 males and 23 females) consecutive patients of lichen planus, and an equal number of age and sex matched controls were evaluated for thyroid function status.

Results: Out of 50 lichen planus patients the thyroid function tests were deranged in 7(14%); 4(8%) females and 3 (6%) males while in the control group, thyroid function tests were deranged in 1(2%) female.

Conclusions: The results of our study show that a significant percentage of lichen planus patients have deranged thyroid function especially hypothyroidism. As the sample size in our study was small, this calls for further studies involving larger number of patients.

Introduction

Lichen planus (LP) is an inflammatory dermatosis of varied clinical manifestations affecting the mucocutaneous surfaces [1]. It most commonly affects middle-aged people, frequency being equal in men and women with a of prevalence of 1 to 2% in the general population [1,2,3,4]. The exact pathogenesis of LP in not known, however the main event is the recruitment of activated T lymphocytes; both CD4+ and CD8+ T lymphocytes, to the dermal–epidermal junction which induces apoptosis in the basal keratinocytes [5,6,7]. Although its etiology and pathogenesis are not fully understood, LP has been associated with multiple disease processes and agents, such as viral and

bacterial infections, autoimmune diseases, medications, vaccinations and dental restorative materials [1,8,9,10,11,12,13].

Materials And Methods

The study was conducted in the department of Dermatology, STD & Leprosy SKIMS Medical College Srinagar. Fifty patients of Lichen planus and an equal number of age and sex matched controls were included in the study. After signing an informed consent all cases were recorded on a standard pro-forma. A detailed medical history and physical examination was carried out for all patients with special emphasis on age of onset, duration, sites involved, and any associated systemic or cutaneous disorder. In both the groups, thyroid function was assessed by means of thyroxine (T_4), triiodothyronine (T_3) and thyroid-stimulating hormone (TSH) levels measured by radio-immunoassays.

The statistical analysis of the data was done using Student's *t*-test for difference of means and the chi-squared test. with *P*-value of less than 0.05 taken as significant.

Results

Fifty consecutive patients of lichen planus were included in the study comprising of 27 (54%) males and 23 (46%) females. The age of the patients ranged from 15 to 54 years with 80 % (40) of the patients belonging to the 20 to 40 years age group ***(Table 1)***. The mean age and SD was 30.18±7.94 years. The duration of the disease varied from 3 months to 8 years, with a mean and SD of 2.07±2.064 years. Cutaneous involvement was present in 44 (88%); oral mucosal involvement in 15 (30%), nails affection in 11 (22%), scalp lesions in 3 (6%) and the genitalia in 2 (4%) ***(Table 2)***. The mean age and SD of the control group (total 50) was 31.12±7.956 years.

	10 - 20	21 - 30	31 - 40	41 - 50	> 50
Males	5	13	6	2	1
Females	0	9	12	2	0
Total	5	22	18	4	1

Table 1: Age distribution

Sites involved	No of patients
Cutaneous	44 (88%)
Oral mucosa	15 (30%)
Nails	11 (22%)
Scalp	3 (6%)
Genital mucosa	2 (4%)

Table 2: Involvement of different sites

In the LP group, the thyroid function tests (TFT's) were abnormal in 7 (14%) patients; 4 females and 3 males ***(Table 3)***. Among these 7 patients, cutaneous involvement was present in all (14%), oral mucosa in 3 (6%), genital mucosa in 1

(2%) and nails in 1 (2%) patient. The duration of LP in these patients varied from 1 to 7 years with a mean and SD of 3.0±2.16 years. The TFT's were indicative of hypothyroidism in 6 (12%) and hyperthyroidism in 1 (2%) patient.

S. No	Age	Sex	Sites involved	Duration	Abnormality
1	33	F	Cutaneous, oral	4	$T_3\downarrow$,$T_4\downarrow$, TSH↑
2	23	M	Cutaneous	1	$T_3\downarrow$,$T_4\downarrow$, TSH↑
3	45	M	Cutaneous, oral	7	$T_3\downarrow$,$T_4\downarrow$, TSH↑
4	34	M	Cutaneous, genitals	4	$T_3\downarrow$,$T_4\downarrow$, TSH↑

Table 3: Characteristics of patients with abnormal TFT's

In the control group, TFT's were abnormal in one female only (2%), indicative of hypothyroidism ($T_3\downarrow$,$T_4\downarrow$, TSH↑).

When the two groups were compared ***(Table 4)***, it was found that the number of LP patients with deranged TFT's (seven) was significantly higher (chi-squared test:λ^2 = 4.89, *P* = 0.0269) from the number of control group individuals with deranged TFT's (one). Further, the TFT's were indicative of hypotyroidism in most (6, 85.71%) LP patients with deranged thyroid function (total 7).

	Thyroid function tests		Total
	Abnormal	Normal	
LP group	7 (14%)	43 (86%)	50
Control group	1 (2%)	49 (98%)	50
λ^2 = 4.89, P = 0.0269			

Table 4: Comparison of two groups

Discussion

Lichen planus is a chronic inflammatory condition affecting the mucocutaneous surfaces [1]. Ever since the first report indicating an association between chronic liver diseases and lichen planus in 1978 [8], it has been associated with multiple other disease processes and agents, such as viral and bacterial infections, autoimmune

diseases, vaccinations, dental restorative materials and a variety of drugs [1, 8,9,10,11,12,13]. In recent years, many other associations have been reported especially dyslipidemia and glucose metabolism disturbance [14,15].

Not many studies have been carried out to test the association between lichen planus and thyroid dysfunction. Siponen et al [16] carried out a retrospective case-control study to test the association of oral lichen planus with thyroid disease in a Finnish population. They used data from the medical records of 152 oral lichen planus (OLP) patients and 70 oral lichenoid lesions (OLL) patients and 222 age- and sex-matched controls. Their study revealed thyroid gland dysfunction in 15% (22) of cases with OLP, in 13% (9) of cases with OLL, and in 8% (18) of the control subjects. Among patients with thyroid disease, hypothyroidism was found to be more common, found in 10% (15) of the OLP cases, 9% (6) of the OLL cases, and 5% (11) of the controls.

Our study revealed thyroid gland dysfunction in 14 % (7) of patients with lichen planus which was significantly higher in comparison to the control group. None of these patients gave history of thyroid disease in the past nor history of any cutaneous or systemic autoimmune disorders. Out of the 44 patients with cutaneous involvement, thyroid dysfunction was detected in 15.91% (7) while out of the 15 patients with oral mucosal involvement, thyroid function was deranged in 20 % (3). Further, among the 7 patients with thyroid gland dysfunction, the thyroid function tests were indicative of hypothyroidism in the majority (85.71%, 6) of them. The results of our study were comparable to those of Siponen et al [16], although the sample size was small in our study.

In conclusion, the results of our study revealed that a significant percentage of patients with lichen planus, both oral as well as cutaneous, had associated thyroid gland dysfunction. However, further studies need to be carried out involving larger populations to test this association and the possible mechanisms behind this.

References

1. Lehman JS, Tollefson MM, Gibson LE. Lichen planus. *International Journal of Dermatology* 2009, 48, 682–694.

2. Bhattacharya A, Kaur I, Kumar B. Lichen planus: a clinical and epidemiological study. *J Dermatol* 2000; 27: 576–582.

3. DeRossi SS, Ciarrocca KN. Lichen planus, lichenoid drug reactions, and lichenoid mucositis. Dent Clin North Am 2005;49:77–89.

4. Nagao Y, Sata M. Hepatitis C and lichen planus. J Gastroenterol Hepatol 2004;19:1101–13.

5. Ismail SB, Kumar SKS, Zain RB. Oral lichen planus and lichenoid reactions: etiopathogenesis, diagnosis, management and malignant transformation. J Oral Sci. 2007; 49:89-106.

6. Scully C, Beyli M, Ferreiro MC. Update on oral lichen planus: etiopathogenesis and management. Crit Ver Oral Biol Med. 1998;9:86-122.

7. Canto AM, Müller H, Freitas RR, da Silva Santos PS. Oral lichen planus (OLP): clinical and complementary diagnosis. An Bras Dermatol. 2010;85(5):669-75.

8. Rebora A, Patri P, Rampini E. Erosive lichen planus and cirrhotic hepatitis. Ital Gen Rev Dermatol 1978;15:23–31.

9. Nagao Y, Sata M. Hepatitis C and lichen planus. J Gastroenterol Hepatol 2004;19:1101–13.

10. Hernando-Harder AC, Booken N, Goerdt S, Singer MV, Harder H. Helicobacter pylori infection and dermatologic diseases.Eur J Dermatol 2009; 19 (5): 431-44.

11. Agrawal A, Shenoi SD. Lichen planus secondary to hepatitis B vaccination. *Indian J Dermatol Venereol Leprol* 2004; 70: 234–235.

12. Akay BN, Arslan A, Cekirge S, *et al*. The first reported case of lichen planus following inactivated influenza vaccination. *J Drugs Dermatol* 2007; 6: 536–538.

13. Thompson DF, Skaehill PA. Drug-induced lichen planus. *Pharmacotherapy* 1994; 14: 561–571.

14. Dreiher J, Shapiro J, Cohen AD. Lichen planus and dyslipidaemia: a case-control study. Br J Dermatol. 2009 Sep;161(3):626-9.

15. Seyhan M, Ozcan H, Sahin I, Bayram N, Karincaoğlu Y. High prevalence of glucose metabolism disturbance in patients with lichen planus. Diabetes Res Clin Pract. 2007 Aug;77(2):198-202.

16. Siponen M, Huuskonen L, Läärä E, Salo T. Association of oral lichen planus with thyroid disease in a Finnish population: a retrospective case-control study. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2010 Sep;110(3):319-24.