Journal Homepage: - www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI: 10.21474/IJAR01/3105
DOI URL: http://dx.doi.org/10.21474/IJAR01/3105

*RESEARCH ARTICLE*

# -PREVALENCE OF THYROID DISORDERS IN ORAL LICHEN PLANUS PATIENTS AMONG KASHMIRI POPULATION.

**Farooq Ahmad Naikoo[1], Altaf Hussain Chalkoo[2], Mirzada Bilal Ahmad[3], Nusrat Nazir[4] and Saima Tariq[4].**

1. MDS Oral Medicine and Radiology.
2. Professor OMAR GDC Srinagar.
3. MDS Oral Medicine and Radiology,department of health services Kashmir.
4. Post Graduate students Department of Oral Medicine and Radiology GDC Srinagar.

*Manuscript Info*

*Manuscript History*

Received: 10 September 2016
Final Accepted: 18 October 2016
Published: December 2016

*Abstract*

**Background:** Many systemic disorders have been seen in association with OLP and have been attributed to the causation of OLP. Recently hypothyroidism has been associated with OLP. The aim of the present study was to evaluate the association between OLP and hypothyroidism by measuring the thyroid hormone levels in OLP patients.

**Materials and methods:** 100 OLP patients were selected from the outpatient clinic of oral medicine and radiology with 100 controls which matched the cases in all demographic characters except the absence of disease were also selected.

**Results:** There was statistically significant association between OLP and hypothyroidism in the present study when compared with the controls.

**Conclusion:** From the present study it is concluded that thyroid profile should be routinely done in OLP patients to rule out hypothyroidism among kashmiri population.



## Introduction:-

The term Lichen planus is derived from greek word leichen which means tree moss and latin word planus which means flat[1]. It is a chronic mucocutaneous disease affecting skin, nails, mucous membranes and scalp[2]. Oral lichen palnus is believed to be result of T-cell mediated autoimmune disease in which auto cytotoxic CD8 T-cells mediate apoptosis of basal cells of squamous epithelium[3]. An initial event in the disease progression involves keratinocytes antigen expression or unmasking of an antigen that may be self peptide or heat shock protein[4]. In most of the patients of oral lichen planus there is no associated skin lesions so they may be called isolated oral lichen planus[5].

Etiology and pathogenesis has not been fully elucidated however oral lichen planus has been associated with multiple disease and agents such as viral and bacterial infections, autoimmune diseases, systemic medication, vaccinations and dental restorative materials[6, 7, 8].

In recent studies correlation has been found between hypothroidism and oral lichen planus and cutaneous lichen planus[9, 10].

**Corresponding Author: - Farooq Ahmad Naikoo.**
**Address: -** MDS Oral Medicine and Radiology.

Based on these studies, thyroid dysfunction may be more prevalent in the patients with lichen planus also from our clinical experience of frequent occurrence of thyroid dysfunction in oral lichen planus, a study was conducted to elucidate the possible association between oral lichen planus and thyroid dysfunction. We conducted prospective case control study in our department to examine this hypothesis among kashmiri population.

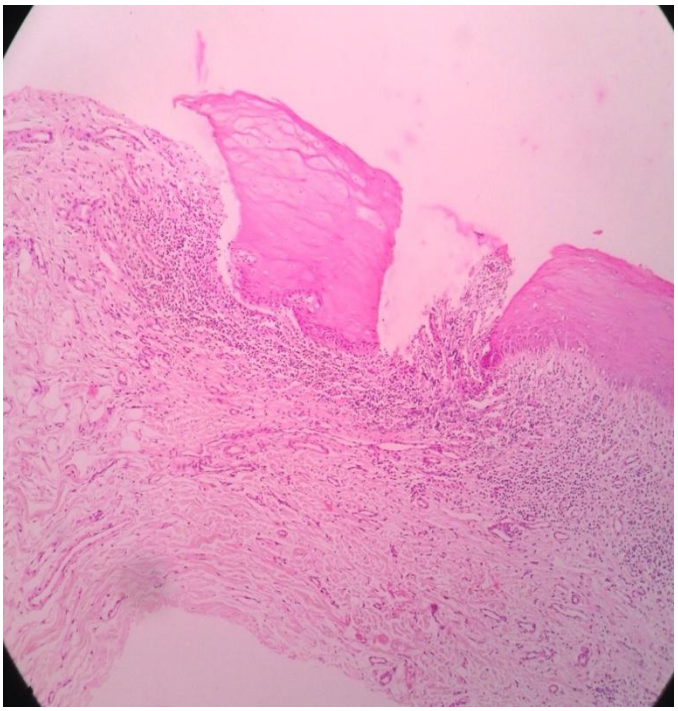
## Materials and methods: -

This prospective case control study was conducted in the department of oral medicine and radiology government dental college Srinagar .100 consecutive cases with OLP were selected from the outpatient clinic over a period of 2 years. Cases were selected on the basis of recognized clinical features as most cases can be diagnosed clinically according to revised WHO criteria of 2003 however in case of suspected lesions biopsy was taken to confirm the diagnosis. Controls were also selected from the outpatient clinic were matched to the cases in age, sex and other demographic characters except the abscence of disease. Adequate consent was taken from both the groups by signing an informed consent proforma. A detailed history and examination were taken with emphasis on chief complaint and its duration, general health of the patient, past medical history, previous drug history ill healthy habits (pan chewing, cigarette smoking, and alcohol consumption), dietary habits, oral hygiene status. A thorough clinical examination was carried out noting the type of lesion, site of involvement, extent of involvement any other skin lesion or mucous membrane involvement. In both the groups thyroid function were assessed with throxine, triiodothyronine and thyroid stimulating hormone measured by radioimmunoassay.

**Statistical analysis:-**

Statistical software SPSS (version 20.0) and Microsoft Excel were used to carry out the statistical analysis of data. Descriptive Statistics of data including the means and standard deviations for numerical variables and the percentages of different categories for categorical variables was obtained. A P-value of less than 0.05 was considered statistically significant.

Clinical photograph showing bilateral reticular and plaque pattern of OLP



Photomicrograph of oral lichen planus with chronic subepithelial inflammatory infiltrate

## Results:-

The age wise distribution of the subjects is shown in the table 1. Maximum number of patients was in the age group of 40-49. The mean age of the OLP patients was 43.8 years with standard deviation of 9.58 years.

Table 1 showing age wise distribution in cases and controls

| Age (years) | Cases [n=100] | | Controls [n=100] | |
|---|---|---|---|---|
| | No. | %age | No. | %age |
| 18-29 | 6 | 6% | 6 | 6% |
| 30-39 | 26 | 26% | 23 | 23% |
| 40-49 | 45 | 45% | 46 | 46% |
| 50-59 | 16 | 16% | 18 | 18% |
| ≥60 | 7 | 7% | 7 | 7% |
| Mean±SD | 43.8±9.58 | | 44.9±8.87 | |

Out of total no of patients number of females was 61 and the number of males was 39. Hence the male female ratio was 1.56:1 as shown in table no. 2.

Table 2 showing sex wise distribution of cases and controls

| Gender | Cases [n=100] | | Controls [n=100] | | P-value |
|---|---|---|---|---|---|
| | No. | %age | No. | %age | |
| Female | 61 | 61% | 61 | 61% | 1.000 |
| Male | 39 | 39% | 39 | 39% | |
| Female : Male=1.56:1 | | | | | |

When the cases and controls were compared for thyroid function tests there was statistically significant difference in thyroid function tests in cases as compared to controls when subjected to statistical analysis as shown in table 3 below.

Table 3 Thyroid function in cases and controls

| | | Thyroid function test | | |
|---|---|---|---|---|
| Abnormal | | **Normal** | Total | % |
| Cases | 16 | 84 | 100 | 16 |
| Controls | 5 | 95 | 100 | 5 |
| | | P value 0.021* | | |

*Statistically Significant Difference (P-value<0.05)

## Discussion:-

Lichen planus is a chronic mucocutaneous disease of unknown etiology. Altered cell mediated immune response, stress, anxiety, genetic predispositions are considered to be the etiological factors[11].

In the present study there was statistically significant difference thyroid profile in patients with oral lichen planus than control subjects. This was in consistent with the studies of siponen et al (2010)[10], Dreiher J etal[9], and Hirota et al (2011)[12]. In their retrospective case control study by Siponen et al in finnish population they used the data from the past medical records of oral lichen planus and oral lichenoid reaction patients, they found that thyroid pathosis was present in 15 % of 152 OLP patients and 13% of 70 cases of OLL and in 8% of controls. Hypothyroidism was present in 10% of OLP patients, 9% of OLL patients and 5% of controls in their study. However in our study all the patients were hypothyroid and none of them were hyperthyroid or suffering from goiter contrary to their study. This may be due to very high prevalence of hypothyroidism or it may be due to different genetic factors involved. Also geographic factors may play role. Of all the hypothyroid patients, 7 patients were having the past history of hypothyroidism and were on regular levothyroxine sodium, 9 of them were unaware of their thyroid status. According to the retrospective case control study conducted by J Robledo-Sierra et al (2013)[13]by using the past medical records they found OLP patients used thyroid medication more frequently than the controls they concluded that use of levothyroxine may be associated with OLP which in turn is attributed to hypothyroidism. It is still doubtful whether hypothyroidsm is the cause of OLP or the medication taken for the disorder is the culprit for OLP, so further studies needed to be conducted. Furthermore this might be coincidence of occurrence of OLP and hypothyroidism as later has high prevalence in this part of the world. Females were more commonly affected in our study by hypothyroidism than males. In order to eliminate the confounding factors only those controls were selected which matched the cases in all aspects except the abscence of disease.

Next we tried to correlate the type of OLP in hypothyroid patients. It was found that hypothyroidism was associated with aggressive type of OLP lesions like erosive and ulcerative pattern. Raised thyroid stimulating hormone (TSH) levels were associated aggressive form of OLP than with normal levels of TSH. Reticular pattern was most common followed by erosive pattern. There was no case of bullous type of OLP, while plaque type of lesions was least common.

In our study females were affected more commonly than males in ratio of 1.56:1.Majority of the studies has revealed female predominance. In their study by Thorn JJ et al[12] in 1988 they found male to female ratio of 1:2; while silverman et al[14] found 67% of their patients to be females. These are in confirmation with our study.

The mean age of OLP patients was 43.8+ 9.58 years at the time of presentation, where in females it was 44.1+9.59 and 43.3+9.68 in males. 71% of the patients belonged to age ranging range of 30-49 years. The overall age range in our study was 18- 70 which is similar to result of the study by Drore Eisen[15].

## Conclusion: -

It is evident from our study that a significant percentage of OLP patients are suffering from the hypothyroidism. We recommend routine thyroid profile should be done in patients with oral lichen planus. Further studies need to be conducted to evaluate the cause of hypothyroidism also common immune mechanism might be involved in the progression of the both disorders. Also further studies needed to be conducted on larger samples to support the hypothesis.

## References:-


1. Boyd AS, Neldner KH. Lichen planus. J Am Acad Dermatol 1991; 25: 593-619.
2. Sugerman PB, Savage NW, Walsh LJ, Zhao ZZ, Zhou XJ, Khan A, et al. The pathogenesis of oral lichen planus. Crit Rev Oral Biol Med. 2002; 13:350-65.
3. Eversole LR. Immunopathogenesis of oral lichen planus and recurrent aphthous stomatitis. Semin Cutan Med Surg1997;16:284‑94.
4. Zhou XJ, Sugarman PB, Savage NW, Walsh LJ, Seymour GJ. Intra‑ epithelial CD8+T cells and basement membrane disruption in oral lichen planus. J Oral Pathol Med 2002; 31:23‑ 7.
5. Al-Hashimi I, Schifter M, Lockhart PB, Wray D, Brennan M, Migliorati CA, et al. Oral lichen planus and oral liche-noid lesions: diagnostic and therapeutic considerations. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2007; 103 Suppl: S25.e1-12.
6. 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.
7. Rebora A, Patri P, Rampini E. Erosive lichen planus and cirrhotic hepatitis. Ital Gen Rev Dermatol 1978; 15: 23–31.
8. Nagao Y, Sata M. Hepatitis C and lichen planus. J Gastroenterol Hepatol 2004; 19: 1101–13.
9. Dreiher J, Shapiro J, Cohen AD (2009). Lichen planus and dyslipidaemia: a case–control study. Br J Dermatol 161: 626– 629.
10. Siponen M, Huuskonen L, Laara E, Salo T (2010). 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 110: 319–324.
11. A Konidena, BV Pavani,. Hepatitis C virus infection in patients with oral lichen planus. Nigerian Journal of Clinical Practice •Apr-Jun 2011 • Vol 14 • Issue 2.
12. Hirota SK, Moreno RA, dos Santos CH, Seo J, Migliari DA. Analysis of a possible association between oral lichen planus and drug intake. A controlled study. Med Oral Patol Oral Cir Bucal. 2011;16:750–756
13. Thorn JJ, Holmstrup P, Risdun J, Pindborg JJ course of various forms of oral lichen planusa follow up studyof 611patients j oral pathol. 1988;17:213-218.
14. Silverman S, Gorkey M, Lozada Nur F. A prospective follow up study of 570 patients with oral lichen palnus: persistence, remission and malignant association. Oral surg oral med oral pathol. 1985; 60:30-34.
15. Eisen D. The evaluation of cutaneous, genital, scalp, nail, esophageal, and ocular involvement in patients with oral lichen planus. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1999; 88:431–436.