

PREVALENCE OF DIABETES IN PATIENTS OF LICHEN PLANUS OF SOUTH KARNATAKA POPULATION

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Received : 06/06/2022
Received in revised form : 08/07/2022
Accepted : 21/07/2022

Keywords:
LP (LP) Diabetes Mellitus (DM),
Histo-pathological, Idiopathic

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DOI: 10.47009/jamp.2022.4.3.23

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm,
2022; 4 (3); 102-104



Abstract

Background: Lichen Planus (LP) is a chronic inflammatory muco-cutaneous disease which is represents a typical and characteristic lichenoid dermatosis. This exact incidence and prevalence of LP is yet to known. Studies have shown strong association between LP and Diabetes Mellitus (DM). **Materials and Methods:** Out of 85 patients with LP 55 females and 30 males were studied. Detailed history with clinical and dermatological examination was done. The fasting blood sugar was done in addition to routine blood examination. HbA1C was done in all cases found to be diabetic to confirm duration of DM. 5 mm punch biopsy was performed in all clinically diagnosed LP patients and of tissue was sent for histo-pathological. Study for confirmation of LP. Patients with fasting blood sugar higher than 125 mg/dl were considered as diabetic. **Result:** Highest number of LP 25 (29.41%) in DM was observed in age between 36-45 years and least number 6 (7%) was observed in > 65 years of age, 28 (32.9%) patients had > 100 mg/dl Fasting blood sugar and 57 (67%) had < 100 mg/dl fasting blood sugar was noted. **Conclusion:** The present pragmatic study confirmed the higher prevalence of DM LP and it is a clinical challenge to endocrinologist and dermatologist as well.

INTRODUCTION

LP (LP) is chronic muco-cutaneous inflammatory disease, characterized by flat topped, pruritic purpuric, polygonal papules and plaques with an overall prevalence of 2 to 3 % globally.^[1] It occurs more frequently among women than men, with an approximate ratio of 2:1, being more prevalent in the middle aged population.^[2] Although aetiology is unknown, it is widely accepted that, it is an auto-immune disease. Diagnosis of LP is initially made by the clinical appearance of the lesions. However histological study must be carried out in order to confirm the clinical diagnosis as well as to differentiate it from other entities of similar clinical appearance.^[3]

Diabetes Mellitus (DM) is a chronic metabolic disorder characterised by increase in the blood glucose levels resulting from defect in insulin secretion, insulin action, or both.^[4] Un-controlled DM leads to increased susceptibility to development fungal infection, bacterial infections.^[5]

The relationship of LP and DM was described for the first time by Grinspan et al. in 1966 but the exact aetiology is yet to be elucidated.^[6] An attempt was made to study the association of diabetes with

diabetes in the both sexes to assess if diabetes is one of the predisposing factors for LP. Present study may be a guide line to dermatologist, who treats such LP patients.

MATERIALS AND METHODS

85 consecutive consenting patients LP (30 male and 55 females) visiting the OPD of the department Dermatology, Vydevi Institute of Medical Sciences and research centre white field Bangalore-560066, Karnataka, were studied between 1st January 2022 to 30th April 2022.

Inclusive Criteria

Patients already diagnosed as LP previously and newly detected cases on the basis of clinical and histo-pathological features were included in the study.

Exclusion Criteria

Patients below 16 years of age and those who are already under treatment for 6 months or more for LP with agents such as corticosteroids (since patients do not show characteristic lesions), pregnant and lactating women, patients with lichenoid drug

eruption and immune-compromised patients were excluded from study.

Method

Detailed history with clinical and dermatological examination was carried out. Fasting blood sugar of the patient was done, apart from routine blood examination. Patients with blood sugar levels of more than 125 mg/dl on two separate occasions were considered diabetic. HbA1C test was done in all the diabetic patients to confirm the duration of Diabetes Mellitus. 5 mm punch biopsy of skin lesion was done on all patients and sent for histopathological examination confirmation of LP.

The duration of study was January-2022 to April-2022.

Statistical Analysis

Distribution of age groups in both sex and different fasting blood sugars levels were classified with percentage. The statistical analysis was carried out in SPSS software. The ratio of male and female was 1:2.

RESULTS

[Table 1] Distribution of sex and age of diabetes in lichen patients (28 out of 57)

- 11 females and 4 males total 15 (17.6%) cases were age between 16-25 years
- 9 females and 6 males total (15 (17.6%) were age between 26-35 years
- 19 females and 6 males total 25 (29.4%) were age between 36-45 years
- 3 females and 8 males total 11 (12.9%) were age between 46-55 years
- 9 females and 4 males total 13 (15.2%) age between 56-65 years
- 4 females and 2 males total 6 (7%) in age > 65 years (more than 65).

[Table 2] 28 (32.9%) cases had > 125 Fasting blood sugar, 57 (67%) had < 125 Fasting blood sugar.

Table 1: Distribution of age and Sex of DM in LP patients

Age	Female (55)	Male (30)	Total	Percentage (%)
16 – 25	11	4	15	17.6
26 – 35	9	6	15	17.6
36 – 45	19	6	25	29.4
46 – 55	3	8	11	12.9
56 – 65	9	4	13	15.2
> 65	4	2	6	7
Total	55 (64.7%)	30 (35.2%)	85	100 %

55 females and 30 males, Highest number of LP 2 (29.4%) in Diabetes mellitus was observed in age 36 – 45 year and least in > 65

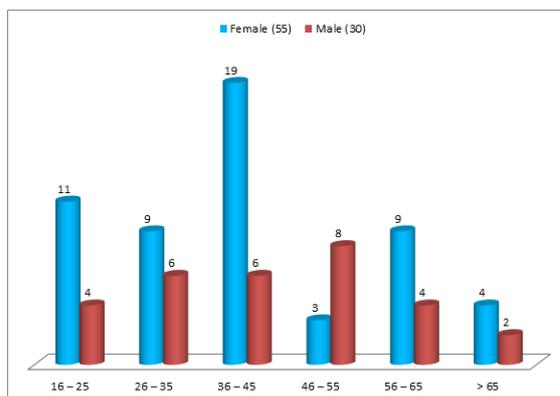


Figure 1: Distribution of age and Sex of lichen planus in DM patients.

Table 2: Status of Diabetes Mellitus in LP patients Total No. of patients: 85

Fasting Blood Sugar Mg/dl	Patients (85)	Percentage (%)
> 125	28	32.9
< 125	57	67

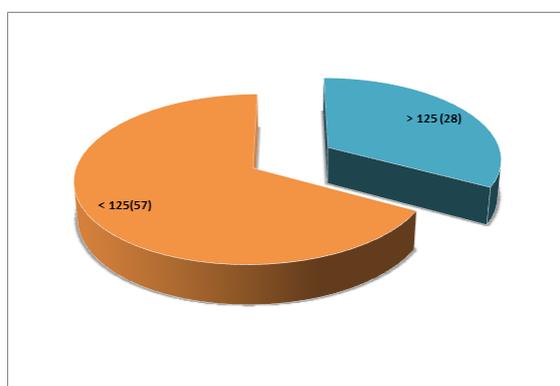


Figure 2: Status of Diabetes Mellitus in LP patients

DISCUSSION

Present study shows prevalence of 32.9 % of Diabetes Mellitus in LP patients 55 (64.7%) females and 30 (35.2%) males were studied. 25 (29.4%) patients were age between 36-45 were the highest and 6 (7.1%) were more than (>65), 65 where the least number were studied [Table 1]. 28 (32.9%) had > 125 Fasting blood sugar mg/dl and 57 (67%) had < 125 Fasting Blood sugar mg/dl. showing prevalence of 32.9 %. These findings are more or less similar to previous studies. [7,8,9]

It has been proposed that, endocrine dysfunction in DM patients may be related to the immunological changes which also contribute to the development of LP. However this association has not been proved. Hence it can be hypothesized that there is a positive relationship between patients with higher prevalence of DM in patients with LP. [10] It is reported that 38% LP patients have high prevalence of DM especially in middle age group. It is also suggested that control of DM is mandatory in addition to the medication used in the treatment of LP. [11] The prevalence of LP is more in women than men certainly indicates that LP is due to variation in the hormonal balance

because it is more pronounced in middle age group women. It is also reported that LP can be a reaction, clinically induced by anti-hyperglycaemic and anti-hypertensive drugs.^[12]

LP is also associated with variety of systemic disorders such as Alopecia Areata, Vitiligo, Myasthenia Gravis, active Chronic Hepatitis, Sjögren Syndrome, Lupus Erythematosus or Thyroid Pathology in certain cases hence LP can be defined as immunological disease.^[13,14]

CONCLUSION

Present study has shown increased prevalence of DM in LP which is in line with the other studies. With the ever increasing prevalence of diabetes mellitus in india and associated complications, it is prudent to screen all the patients of LP for diabetes mellitus. This study demands further genetic, hormonal, nutritional, patho-physiological aspects in LP, because the etio-pathological factors for the increased association of Diabetes Mellitus in patients of LP are not conclusively established.

Limitation of study

Our study population does not represent the general population owing to the tertiary location and the sample size was less. So, we have limited results.

REFERENCES

1. McCartan BE, Healy CM. The reported prevalence of oral lichen planus: a review and critique. *J Oral Pathol Med.* 2008;37(8):447-53. doi: 10.1111/j.1600-0714.2008.00662.x.
2. Wang J, van der Waal I. Disease scoring systems for oral lichen planus; a critical appraisal. *Med Oral Patol Oral Cir Bucal.* 2015;20(2):e199-204. doi: 10.4317/medoral.20524.
3. van der Meij EH, van der Waal I. Lack of clinicopathologic correlation in the diagnosis of oral lichen planus based on the presently available diagnostic criteria and suggestions for modifications. *J Oral Pathol Med.* 2003;32(9):507-12. doi: 10.1034/j.1600-0714.2003.00125.x.
4. Alberti KG, Zimmet PZ. Definition, diagnosis and classification of diabetes mellitus and its complications. Part 1: diagnosis and classification of diabetes mellitus provisional report of a WHO consultation. *Diabet Med.* 1998;15(7):539-53. doi: 10.1002/(SICI)1096-9136(199807)15:7<539::AID-DIA668>3.0.CO;2-S.
5. Artese HP, Foz AM, Rabelo Mde S, Gomes GH, Orlandi M, Suvan J, et al. Periodontal therapy and systemic inflammation in type 2 diabetes mellitus: a meta-analysis. *PLoS One.* 2015;10(5):e0128344. doi: 10.1371/journal.pone.0128344.
6. Grinspan D, Diaz J, Villapol LO, Schneiderman J, Berdichesky R, Palèse D, et al. Lichen ruber planus of the buccal mucosa. Its association with diabetes. *Bull Soc Fr Dermatol Syphiligr.* 1966;73(6):898-9.
7. Kumar SA, Krishnam Raju PV, Gopal KVT, Rao TN. Comorbidities in Lichen Planus: A Case-control Study in Indian Patients. *Indian Dermatol Online J.* 2019;10(1):34-37. doi: 10.4103/idoj.IDOJ_48_18.
8. Hashba H, Bifi J, Thyvalappil A, Sridharan R, Sreenivasan A, Mathew P. Prevalence of Metabolic Syndrome in Patients with Lichen Planus: A Cross-sectional Study from a Tertiary Care Center. *Indian Dermatol Online J.* 2018;9(5):304-308. doi: 10.4103/idoj.IDOJ_27_18.
9. Gupta R, Kastia S, Rastogi S, Kaul V, Nagar R, Enas EA. Lipoprotein(a) in coronary heart disease: a case-control study. *Indian Heart J.* 2000;52(4):407-10.
10. Chakrabarti S, Pal S, Biswas BK, Bose K, Pal S, Pathak S. Clinico-Pathological Study of Cutaneous Granulomatous Lesions- a 5 yr Experience in a Tertiary Care Hospital in India. *Iran J Pathol.* 2016;11(1):54-60.
11. Gorouhi F, Davari P, Fazel N. Cutaneous and mucosal lichen planus: a comprehensive review of clinical subtypes, risk factors, diagnosis, and prognosis. *ScientificWorldJournal.* 2014;2014:742826. doi: 10.1155/2014/742826.
12. Petrou-Amerikanou C, Markopoulos AK, Belazi M, Karamitsos D, Papanayotou P. Prevalence of oral lichen planus in diabetes mellitus according to the type of diabetes. *Oral Dis.* 1998;4(1):37-40. doi: 10.1111/j.1601-0825.1998.tb00253.x.
13. Xue JL, Fan MW, Wang SZ, Chen XM, Li Y, Wang L. A clinical study of 674 patients with oral lichen planus in China. *J Oral Pathol Med.* 2005;34(8):467-72. doi: 10.1111/j.1600-0714.2005.00341.x.
14. Baradaran A. Lipoprotein(a), type 2 diabetes and nephropathy; the mystery continues. *J Nephropathol.* 2012;1(3):126-9. doi: 10.5812/nephropathol.8107.