

ORIGINAL ARTICLE

Assessment of prevalence of lichen planus in patients with diabetes mellitus

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ABSTRACT:

Background: Lichen planus is a chronic inflammatory dermatologic lesion with characteristic oral mucosal changes. The present study was conducted to assess prevalence of lichen planus in patients with diabetes mellitus. **Materials & Methods:** 120 patients of diabetes mellitus of both genders were included. Patients with clinically confirmed oral lichen planus were subjected to incisional biopsy. Assessment of diabetes mellitus was made with fasting, random blood glucose and glycated hemoglobin level. **Results:** Out of 120 diabetes patients, males were 50 and females were 70. There were 35 type I and 85 type II DM patients. 2 (5.7%) type I and 5 (5.8%) type II DM patients had lichen planus. **Conclusion:** There was high prevalence of lichen planus in patients with diabetes mellitus.

Key words: Lichen planus, Diabetes mellitus, hormonal disease

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INTRODUCTION

Diabetes mellitus is a metabolic and hormonal disease in which the carbohydrate metabolism is impaired with defective endocrine secretion of insulin from pancreas and this disease is characterized by hyperglycemia, glycosuria, polyuria, polydipsia and polyphagia due to the failure in utilization of sugar in the cellular metabolism.¹ The conversion of sugar in the cell into energy and water is brought out by insulin. The association between diabetes mellitus (DM) and oral lichen planus (OLP) has received much attention in the literature.² The prevalence of DM in patients with OLP has been reported to range from 10% to 85%. It has been proposed that the endocrine dysfunction in DM may be related to an immunologic defect that may also contribute to the development of LP. However, others have reported that the prevalence of DM in OLP patients does not differ from that of DM in the general population.³

Lichen planus was first described by Erasmus Wilson in 1869. Lichen planus is a chronic inflammatory dermatologic lesion with characteristic oral mucosal changes. LP may affect only the skin, only the oral mucosa, or both.⁴ The oral lesions are frequently found on the buccal mucosa, tongue, soft palate, gingiva, and lips, and they may have a variety of

clinical appearances. Oral lichen planus (OLP) has reticular, papular, plaque-like, atrophic, erosive, and bullous forms.⁵ The lesions may appear in only one form or in a combination of forms. The atrophic, erosive, and bullous forms may have associated symptoms ranging from mild discomfort (especially during the consumption of hot or spicy foods) to severe pain or a burning sensation.⁶ The present study was conducted to assess prevalence of lichen planus in patients with diabetes mellitus.

MATERIALS & METHODS

The present study comprised of 120 patients of diabetes mellitus of both genders. The consent was obtained from all patients.

Data such as name, age, gender etc. was recorded. A thorough oral and general physical examination was carried out. Patients with clinically confirmed oral lichen planus were subjected to incisional biopsy. The biopsy specimen was subjected to histopathological analysis to confirm oral lichen planus. Assessment of diabetes mellitus was made with fasting, random blood glucose and glycated hemoglobin level. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 120		
Gender	Male	Female
Number	50	70

Table I shows that out of 120 diabetes patients, males were 50 and females were 70.

Table II Type of diabetes mellitus status

Type	Number	P value
Type I DM	35	0.01
Type II DM	85	

Table II, graph I shows that there were 35 type I and 85 type II DM patients. The difference was significant ($P < 0.05$).

Graph I Type of diabetes mellitus status

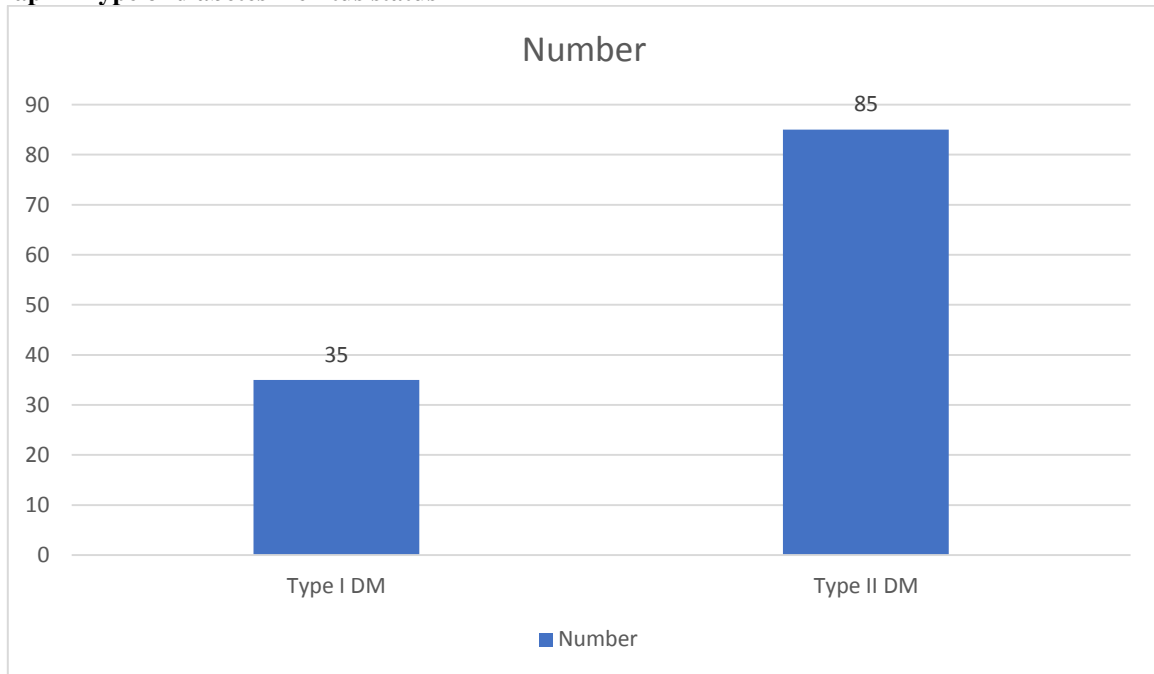
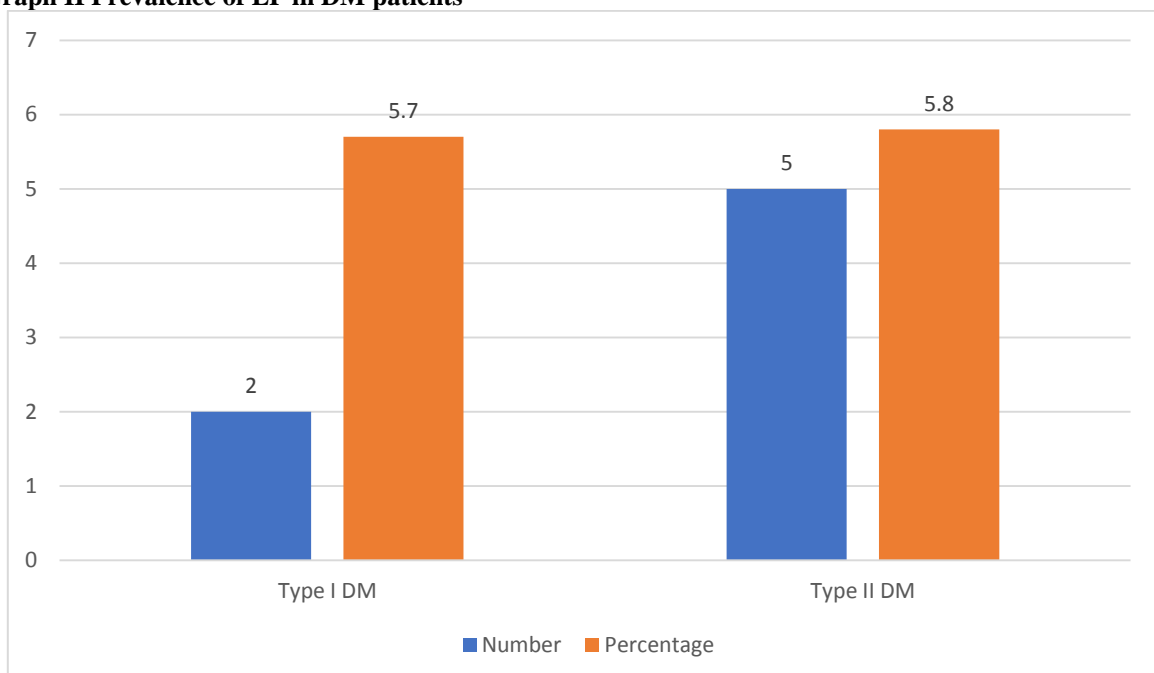


Table III Prevalence of LP in DM patients

Type	Number	Percentage
Type I DM	2	5.7
Type II DM	5	5.8

Table III, graph II shows that 2 (5.7%) type I and 5 (5.8%) type II DM patients had lichen planus.

Graph II Prevalence of LP in DM patients



DISCUSSION

Diabetes mellitus is a metabolic disease in which the peripheral utilization of sugar is affected resulting in hyperglycemia, glycosuria, polyuria, polydipsia and polyphagia.⁷ The development of inflammatory dermatoses, the lichen planus in a metabolic disease like diabetes mellitus is surprising.⁸ Development of hypertension in diabetics is also not clearly explained. Lichen planus (LP) is a relatively common mucocutaneous disorder that affects approximately 0.1% to 2.0% of the general population.⁹ The prevalence rates may differ among races and geographic areas. For example, African-Americans have been reported to have a prevalence of 0.3%, Libyans only 0.08%, 1.6% in a particular area in India, whereas the prevalence in Scandinavian whites has been reported to range from 0.8% to 2.0%.¹⁰ Some investigators have reported a slight female predilection, whereas others have suggested the condition is somewhat more common in males. LP primarily affects adults, with the mean age of onset in the fourth to fifth decades of life.^{11,12} The present study was conducted to assess prevalence of lichen planus in patients with diabetes mellitus.

We found that out of 120 diabetes patients, males were 50 and females were 70. Narayan et al¹³ among 2000 diabetes mellitus patients participated in the study. They were examined for the presence of oral lichen planus and all relevant information was recorded in a proforma. Among 2000 diabetic patients 15 cases (0.75%) of oral lichen planus were seen and these patients are type II diabetic. The oral lichen planus was confirmed histopathologically. It was found that the prevalence of oral lichen planus among diabetics is 0.75% also they had hypertension, which suggests the existence of Grinspan's syndrome. It has been proved that psychosomatic factors like stress and anxiety also are attributed to lichen planus and the diabetic patients might have got exposed to such factors thereby developing lichen planus.

We found that there were 35 type I and 85 type II DM patients. 2 (5.7%) type I and 5 (5.8%) type II DM patients had lichen planus. Van et al¹⁴ determined the prevalence of oral lichen planus in a population of patients with diabetes mellitus compared with a control population and to determine if patient medications had any influence on the presence of such lesions. Two hundred seventy-three patients with diabetes and an identical number of age-, gender- and race-matched controls were examined for clinical evidence of oral lichen planus. Patient medication histories were also obtained from each group. Eleven diabetic patients (4%) and eight control patients (3%) had clinical evidence of oral lichen planus. Ingestion of nonsteroidal anti-inflammatory drugs or angiotensin-converting enzyme inhibitors was associated with the presence of oral lichen planus lesions in six patients. There was no apparent association of diabetes and oral lichen planus in this population, and the ingestion of medications known to

cause lichenoid mucosal reactions had no influence per se on the presence of oral lichen planus lesions ($p > 0.05$). However, the type of medication ingested by those patients who had oral lichen planus lesions was either nonsteroidal anti-inflammatory drug or angiotensin-converting enzyme inhibitor, which was a significant association.

Neither PoLLs et al¹⁵ or Robertson and Wray¹⁶ found any association between OLP lesions and the ingestion of antihypertensive medications. Four of the nineteen patients with OLP lesions in this study were taking ACE inhibitors. However, none of the other antihypertensive medications (furosemide, thiazide diuretics, propranolol) were implicated. None of the other authors specified which medications were included in the antihypertensive groups. It is possible that ACE inhibitors were not included in their studies. Ujpal et al¹⁷ saw that smoking diabetes patients are more susceptible to developing leukoplakia. However, tobacco as a confounding factor has not been identified in all studies. Saini et al¹⁸ only specified tobacco consumption in T1DM patients group.

CONCLUSION

Authors found that there was high prevalence of lichen planus in patients with diabetes mellitus.

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