Original Article

Clinical and Laboratory Findings of a Group of Iranian Patients with Oral Lichen Planus

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ABSTRACT

Statement of Problem: Lichen planus (LP) is a chronic disease that affects skin and mucous membranes. Lesions of oral lichen planus (OLP) can persist for a long time. Varying prevalence rates of oral lichen planus have been reported in different parts of the world, while information regarding the epidemiology of this disease in Iran is incomplete.

Purpose: This study was designed to evaluate the characteristics of oral lichen planus in a group of Iranian patients and compare the results with similar conducted studies in other populations.

Materials and Method: In this descriptive study data were collected from charts of 158 patients In Kerman, Iran (1997-2005) over 8 consecutive years. For each patient, age at presentation, gender, chief complaint, duration of chief compliant, previous treatment, current medications, skin involvement and a complete medical history has been recorded. A number of possible etiologic factors and possible presence of diabetes or liver disease also analyzed. Laboratory evaluations consisted of glucose tolerance test (GTT) and liver function tests (LFT). This data were analyzed by SPSS version 12 statistical software.

Results: The mean age of study population was 41.16 years. Subjects were predominantly female (65.1%). Liver function tests (LFT) were abnormal in 19.6% of cases. Disturbance of glucose metabolism and fasting blood sugar was also higher than normal limit in10.8% and 2.9 % of cases respectively. Atrophic-erosive lesions were found in 17 of the cases. In 50 patients the lesions were exclusively keratotic and in 91 the lesions were atrophic-erosive and keratotic. Most oral lesions were multifocal (88.6%), with the buccal mucosa being the most common location in each clinical form (87.3%). Duration of oral lesions ranged from 0.4 to 20 years with a mean of 1.54 year.

Conclusion: This study showed that epidemiological and clinical features of the disease in Kerman are similar to those mentioned in literature. Also, in this study LFT and GTT were abnormal in 19.6% and 10.8% respectively.

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Introduction

Lichen planus (LP) is a disease of the skin and mucous membranes that frequently involves the oral mucosa [1]. The prevalence of this disease in the general population is 2% [2]. It is estimated that about 50% of the patients with skin lesions manifest oral lesions, and 25% of patients with oral lichen planus (OLP) present only oral lesions. Oral lichen planus (OLP) particularly involves the buccal mucosa, and varies in appearance from keratotic to erythematous,

and/or ulcerated manifestation [2-3]. OLP is usually observed in the fifth to sixth decades of life, and is twice as common in women than in men [2]. In as much as certain OLP (particularly atrophic/ erosive/ ulcerative lesions) have increased risk of transformation to oral squamous cell carcinoma.

The diagnosis of OLP should not be assessed on the histopathologic picture alone, but should also be based on distinct clinical criteria. Therefore diagnosis of OLP has been confirmed by characteristic clinical findings (bilateral reticular white lesions, white striations, white papules, white plaques, erythema, erosions or blisters) and/or histologic features including hyperkeratosis, liquefaction degeneration of basal cells, and band-like infiltration of chronic inflammatory cells in all cases [3].

Although etiology of LP has not been exactly determined, but, it may be provoked by viral infection, stress, drugs, diabetes and hepatic diseases [4-5]. A number of studies have assessed the association of lichen planus with liver complaints and with known etiological factors of liver diseases. These studies suggested that hepatitis C virus (HCV), may play an important role in the pathogenesis of LP [4, 6-7]. The result of a Meta analysis in 2009 showed that there is an important association between LP and HCV [4].

Little evidence supports a connection between diabetes mellitus and oral lichen planus. In a study in Turkey in 2004 co-associations between diabetes and LP has been found [8].

Varying prevalence rates of oral lichen planus have been reported in different parts of the world [2], while information regarding the epidemiology of this disease in Iran is incomplete. In an attempt to overcome this gap, we performed a study about the prevalence of oral lichen planus, its clinical characteristics, and associated findings in patients attending the oral medicine department of dental school in Kerman, a province in Iran.

Materials and Method

This is a descriptive and retrospective study in which the study population consists of 158 patients with oral lichen planus (LP), who have been seen over 8 consecutive years from March 1997 to March 2005. Clinical appearance of the lesions has been diagnosed by two specialists in oral medicine. Diagnosis of OLP has been confirmed by characteristic clinical findings (bilateral reticular white lesions, white striations, white papules, white plaques, erythema, erosions or blisters) and/or histologic features including hyperkeratosis, liquefaction degeneration of basal cells, and band-like infiltration of chronic inflammatory cells in all cases [3]. In many patients, taking biopsy was necessary for definite diagnosis. Patients who refused to do biopsy excluded from the study.

Patients with other types of lichenoid lesions such as lichenoid contact reaction, lichenoid drug reaction, the patients who had discoid or systemic Lupus erythematosus, and graft versus host disease, excluded from the study. A data sheet was completed for each patient and information such as age, gender, the age at presentation, chief complaint, duration of the lesions, sites of oral as well as skin involvement were recorded.

OLP classified as reticular (lace-like keratotic mucosal configuration) and atrophic/erosive (with or without white lesions) types as mentioned by Bagan et al [9].

In addition, laboratory changes including liver function tests and presence or absence of diabetes or impaired glucose tolerance evaluated in patients. After collecting filled sheets, data were analyzed by SPSS version 12 statistical software.

Results

This study showed that lichen planus was more prevalent in patients between 20 and 30 years old. Most of patients were female (65.1%) and the mean age of involvement was 41.16 year. 8(6.7%) of our study population were illiterate, 39 (32.5%) had under diploma, 30 (25%) diploma and 43 (35.8%) post diploma degrees.

Out of 158 cases, 32 (21.2%) had a history of systemic disease and 15 (9.5%) had taken propranolol.

In our clinic we ordered FBS and L.F.T as routine screening tests for all of the patients who have definite diagnosis of oral lichen planus. LFT and fasting blood glucose (FBG) was abnormal in 20 (19.6%) and 3(2.9%) cases respectively. FBS and liver function enzymes were not assessed in 56 (35.4%) cases (Table 1).

Table 1 Incidence of distribution in laboratory test among 102 patients with oral lichen planus

Laboratory test	Number of patients	Percent
LFT	20	7.9
Glucose intolerance	11	10.8
FBS≥126	3	2.9

Five clinical forms of lichen planus were identified: retricular, papular, plaque like, erythematous, erosive. Atrophic-erosive lesions were seen in 17 cases. In 50 of patients the lesions were exclusively keratotic. In 91 of patients the lesions were atrophic-erosive and keratotic (Table 2).

Oral lesions in 140 (88.6%) patients were multi-focal and in 18 (11.4%) cases unifocal (table 2), with the buccal mucosa being the most common location in each clinical form (138 cases, 87.3%). Reticular lesions were seen most frequently, followed by erythematous, papuler, erosive, and plaque like.

Pain and burning sensation were reported by 89 (56.3%) patients, whereas roughening and itching sensation was mentioned by 8 (5.1%) cases (Table 3).

Out of 158 patients, 24 (15.3%) had skin lesions in addition to oral lichen planus. The location of the skin lesions was as follows: 2 cases (1.3%) in the head and neck, 8 cases (5.1%) in trunk and 13 cases (8.2%) in extremities.

The mucosal lesions were discovered in 25 (15.8%) patients incidentally during routine oral examination. Out of 158 patients, 119 (75.3%) came to our clinic because of oral mucosal lesions and 8 (5.1%) of patients were aware of some kind of mucosal lesions in their mouth, however they have ignored the lesions and came to our clinic for the reasons other than mucosal lesions. Duration of oral lesions ranged from 0.4 to 20 years with a mean of 1.54 year. Previous biopsy had been done in 6 (4.5%) patients. Medications have been prescribed for 76 (56.7%) patients and 41 (31.6%) patients haven't been seeking medical attention.

Discussion

Out of 158 cases, 17 had atrophic-erosive lesions, 50 had exclusively keratotic lesions and In 91 patients the lesions were in the form of atrophic-erosive and keratotic. Oral lesions were often multifocal, 140 (88.6%), with the buccal mucosa being the most common location in each clinical form (138 cases, 87.3%).

Several clinical appearances of oral lichen planus have been described. The diagnosis of OLP cannot be based only on clinical grounds, because other conditions such as leukoplakia, lupus erythematous, and even squamous cell carcinoma can have a similar clinical appearance [3]. Therefore, the use of histologic features of lichen planus is well documented, but the specimen may not show sufficient features to be considered diagnostic.

Because some potential of malignant transformation of this condition is well known, a correct diagnosis of OLP is of particular importance.

Our profile of patients with OLP was generally similar to that found in other studies [2, 9-13]. Oral lichen planus was more prevalent in women, most commonly on the buccal mucosa, and with an onset usually beyond middle age. The higher prevalence of OLP in women has been reported by most investigators. In a preliminary study conducted in Israel, out of 69 patients with OLP, 43(62%) were women [12].

Although some of our patients had diabetes, the prevalence of diabetes in our study group (2.9%) was within the limits as expected in the general population (4.9%) [16-17]. This result is compatible with other studies [9, 12]. In an investigation by Salem, the number of patients in whom diabetes was diagnosed does not exceed that expected in the general population of Saudi Arabia [10]. A number of authors have suggested that patients with lichen planus have

Table 2 Clinical characteristics of 158 patients with oral lichen plan

Clinical form	Patients		Sex				Age (yr) Mean
	Number	%Of total	Male		Female		
			N	% Of male	N	%Of females	
Reticular	135	85.4	49	89.09	86	83.49	42.2
Papular	83	52.5	30	54.54	53	51.45	40.99
Plaque	76	48.1	34	61.81	42	40.77	42.66
Erythematous	112	70.9	35	63.63	77	74.75	42.66
Erosive	77	48.73	20	36.3	57	55.34	43.24
Total	483		168		315		

Table 3 Clinical sign and symptom to different form of oral lichen planus

Clinical sign & symptom	Reticular		Erosive or atrophic		Both		Total	
	Number	%	Number	%	Number	%	Number	%
No symptom	36	22.8	-	-	25	15.8	61	38.6
Pain& Burning	13	8.2	17	10.8	59	37.3	89	56.3
Roughening mucosa or itching sensation	1	6	-	-	7	4.4	8	5.1
Total	50	31.6	17	10.8	91	57.6	158	100

population. This has subsequently been demonstrated by others [8, 14]. Grinspan et al, suggest a link between OLP and diabetes. Some of studies have suggested that the oral lichenoid lesion in Grinspan syndrome (triad of oral lichen planus, diabetes mellitus, and hypertension) is probably an adverse effect of the drug therapy for diabetes mellitus and hypertension [16].

Some investigations have shown association between lichen planus and hypertension [9]. The number of patients with diagnosed hypertension in this study was 9(28%) which did not exceed of that expected in the general population [18].

In this study lesions in 140 (88.6%) patients were multifocal. Our findings are compatible with other studies [2, 14, 19]. These studies showed that most patients had multiple-site oral involvement.

As previously mentioned, 17 (10.8%) of our cases had exclusively atrophic-erosive lesions, whereas in 50 (31.6%) of patients the lesions were exclusively keratotic and 91 (57.6%) had both atrophic- erosive and keratotic form. These results are quite similar to those reported by Silverman [9].

Likewise, associations have frequently been described between lichen planus and certain liver diseases [4, 20-21]. Since we don't have any information regarding the prevalence of liver disturbance in normal population, assessment of association between oral lichen planus and liver disturbance was not possible.

In this study, 78.4% of the affected patients were over 20 year old. The average age was 41.99 years. The affected women outnumbered the men, in agreement with earlier reports [2, 9-13]. No examples of the bullous, or vesicular form, were identified in this study, in agreement with the findings of Silverman and colleagues [22]. In our study reticular lesions were seen most frequently, followed by erythmato, papuler, plaque like, erosive, pigmented and desquamative gingivitis.

In a study by Salem the erosive form was dominant (38.8%) [10]. In another study this form also accounted for 20% of all of the cases of oral lichen planus [23], whereas it accounted for only 7% in one study [24]. However, in a study by Silverman and colleagues 46% of the cases were of the erosive type. These investigators also showed that the atrophic form was the next most common form (30.6%), while the plaque (hypertrophic) form was the one least encountered (5.5%). The reticular form accounted for 25% of all the cases of lichen planus, while in most of the reported material it was the type most frequently seen [9].

Out of our 158 cases, the buccal mucosa being the most common location in each clinical form (87.3%), followed by the tongue (53.8%), gingiva (33.5%), lips (13.3%), palate (12%), vermilion border (7.6%), retro-molar (1.3%), ridge (1.3%) and floor of the mouth (1.3%).

Salem concluded that the cheek mucosa was common site for all forms of lichen planus and was involved in 86% of the cases in his study which is almost similar with our study. The tongue was involved in 42.7% of the cases and was a common site for lesions of both the atrophic and the erosive forms. The gingiva was involved in 16.5% of the cases, mostly by the reticular form. These findings are comparable with such rates reported earlier [10].

In this study skin lesions were found in 15.3% of patients whereas in mention the name of researches studies skin lesions were found in 44 and 25percent of patients with oral lichen planus [24-25]. Some investigators, however, had demonstrated that oral lichen planus may occur without any skin lesions [1].

Conclusion

This study showed that epidemiological and clinical features of the disease in an Iranian Population are similar to those mentioned in the literature. Also, in this study LFT and GTT were abnormal in 19.6% and 10.8% respectively.

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