



The prevalence of precancerous oral lesions. Oral lichen planus

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Lichen planus is a relatively common mucocutaneous disease of unknown etiology. Varying prevalence rates of oral lichen planus have been reported in different parts of the world. Because of the propensity for malignant development it requires management by the dental practitioner. The aim of this study was to show the prevalence of oral lichen planus in a selected population, distribution according to age, sex, clinical types and intraoral locations. The study material comprised 2,385 patients referred to the Department of Oral Diseases and Periodontology at the Clinic of Stomatology in Novi Sad. Oral lichen planus was diagnosed and grouped according to internationally accepted criteria. Oral lichen planus was found in 1.6%; 2.6% and 0.8% for women and men respectively. The highest prevalence for women was found in the age group 50-59 years. Reticular lichen planus was the most common types, found in 71.8%. No examples of the plaque and papular forms were identified. The most prevalent intraoral location of lichen planus was the buccal mucosa, which was affected in 82%. Oral lichen planus was significantly more prevalent among women as compared to men. The buccal mucosa was involved most often and reticular form was most common.

KEY WORDS: Lichen Planus, Oral; Precancerous Conditions; Prevalence

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Archive of Oncology 2001,9(2):107-109©2001,Institute of Oncology Sremska Kamenica, Yugoslavia

INTRODUCTION

Lichen planus is a relatively common disease of unknown etiology that occurs on the skin and oral mucosa. Compared with skin lesions, the mucosal affections have a far more chronic nature and often persist for many years (1). Because of the morbidity associated with these oral lesions and their propensity for malignant development (2), oral lichen planus occupies an important place in dental practice. Varying prevalence rates of oral lichen planus have been reported in different parts of the world, with ranges from 0.12 to 2.4%.

The variety of clinical features of lichen planus presents a classification issue for epidemiologic studies. No standardised classification scheme has been developed, other than a general agreement on the importance of Wickham's striae in clinical diagnosis.

The purpose of this study was to show the epidemiological status of oral lichen planus in a selected population in order to obtain such data as prevalence, distribution according to age, sex, clinical types and intraoral locations.

MATERIALS AND METHODS

The study population comprised 2,385 patients referred to the Department of Oral Diseases and Periodontology at the Clinic of Stomatology in Novi Sad, between 1988 and 1990. All patients were examined in modern dental clinics equipped with excellent illumination. All clinical examinations were performed by one of the authors (MB).

The following clinical criteria for oral lichen planus were used: white pinhead-size papules or distinct striae, forming linear, reticular or annular patterns or, alternatively, white plaque-like lesions with papules or striae at the margins. Atrophies, ulcerations and bulla isolated or in combination, were diagnosed as lichen planus only if these signs were seen concomitant with white lichen planus structures or if a biopsy was strongly indicative of that diagnosis. Atrophy of the tongue papillae was included if it was diffusely delimited and white lichen planus structures were present elsewhere in the mouth.

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The manuscript was received: 26. 02. 2001.

Provisionally accepted: 10. 04. 2001.

Accepted for publication: 28.05. 2001.

Biopsies for histologic analysis were taken from patients to resolve clinical uncertainties.

Lesions were recorded on the WHO standard recording form for oral mucosal diseases (3).

Localization was registered using the topographic division of the oral mucosa modified after Roed-Petersen & Renstrup (3).

The standard Chi-square test with Yates's correction was used for statistical analysis. The critical value for statistical significance was considered to be $p < 0.05$.

RESULTS

The prevalence of oral lichen planus was 1.6%; 2.6% and 0.8% for women and men respectively, a difference that was statistically highly significant ($p < 0.001$).

The distribution according to age and sex is shown in Table 1.

Table 1. Sex and age distribution of 39 patients with oral lichen planus

Age group (year)	n	MEN		WOMEN		TOTAL lichen planus
		n	lichen planus	n	lichen planus	
1. 20 - 29	53	2		114	3	5
2. 30 - 39	398	3		472	2	5
3. 40 - 49	345	0		156	8	8
4. 50 - 59	267	1		166	10	11
5. 60 - 69	153	2		160	6	8
6. 70 >	72	2		29	0	2
Total	1288	10	(0.8%)	1097	29	39
					(2.6%)**	(1.6%)

* $p < 0.05$ Men:1.-2.:NS; 2.-4.:NS; 4.-5.:NS; 4.-6.:*; 1,2.-4,5,6.:NS;
 ** $p < 0.001$ Women:1.-2.:NS; 2.-3.:**; 2.-4.:**; 2.-5.:**; 3.-4.:NS;1,2.-3,4,5.:**;
 NS not significant

Significant differences were found among women over and under 40 years of age ($p < 0.001$). The highest prevalence for women was found in the age group 50-59 years, 6%.

Table 2. Distribution according to clinical types

Clinical type	Patients		Sex	
	n	%	F	M
Reticular	28	71.8	19	9
Ulcerous	6	15.4	6	-
Atrophic	4	10.2	5	1
Bullous	1	2.6	1	-
Total	39	100.0	29*	10

The prevalences of the different clinical type are shown in Table 2. The reticular type was most prevalent followed by the ulcerous and the atrophic types. The bullous type was far less prevalent. The prevalences of four clinical types were significantly higher in women than in men ($p < 0.001$).

Table 3 shows the numbers and frequencies of registered lesions in different oral locations in 39 patients with lichen planus.

The buccal mucosa was involved in 82%. The tongue and the alveolar ridges were affected in 59% and 25.6%, respectively. Lesions were most frequently seen at the dorsal surface of the tongue.

Table 3. Distribution according to oral locations. Percentage referring to frequencies of affected locations among individuals showing lichen planus in any location. Total number of individuals with lichen planus: 39

Location	Number	%
Vermillion		
upper lip	1	2.5
lower lip	2	5.1
Total	3	7.7
Labial mucosa		
upper	3	7.7
lower	2	5.1
Total	5	12.8
Buccal mucosa		
left	29	72.0
right	30	77.0
Total	32	82.0
Alveolar ridge		
upper	1	2.5
lower	8	20.5
labial	6	15.4
lingual	4	10.2
Total	10	25.6
Tongue		
margins	3	7.7
dorsal surface	18	46.1
ventral surface	5	12.8
Total	23	59.0
Palate	2	5.1
Pharyngeal arches	5	12.8
Floor of the mouth	4	10.2

DISCUSSION

The clinical appearance and histopathologic features do not always provide an unequivocal diagnosis of oral lichen planus. Clinical criteria often include the recognition of Wickham's striae (3). In the present study lichen planus was registered even if striae not present in all locations, but if there was atrophy or ulceration of lichen planus type and striae were simultaneously found in other locations of the oral cavity. Biopsies for histologic analysis were taken from 7 patients to resolve clinical uncertainties.

The prevalence of oral lichen planus in this study was 1.6%, which is higher than the rates of 0.08% (4), 0.36% (5) and 1.2% (6,7) in general population and 0.22% (6), 0.5% (9) and 1% (10) in selected population. However, our findings is in agreement with findings in previous investigations from general populations (11) as well as from selected ones (12).

On the other hand, higher prevalence figures have been reported in previous studies. Studies from Sweden in general population showed prevalences of 1.9% (13) and 2.4% respectively (14). The prevalence of oral lichen planus in Croatia was 2.2% in general population (15). In a selected population, Salem (16) found a prevalence of oral lichen planus of 1.7%, Petrou and coworkers (17) a prevalence of 1.8%, Ikeda and coworkers (18) a prevalence of 1.8%. Axel and coworkers (19) reported prevalence rates of 3.8% and 2.1% in Thai and Malaysian out patients, respectively. In the present study lichen planus was significantly more prevalent among women as compared to men. This is in agreement with findings from previous studies (12,14,15,16,19,20) but contradictory to the findings by Pindborg and coworkers (11) who reported absence of a sex predominance and Ikeda and coworkers (9) who found lichen planus only in women.

No examples of the plaque and the papular forms were identified

in this study. This is in agreement with earlier studies (16,21). The reticular form dominated in this study (71.8%), and this is in accordance with findings from general population (6,10,11,13,15) and with findings from selected clinic materials (22). The findings in the present study with domination of the reticular form are contradictory to the most findings of selected clinic materials (12,16,21) in which erosive form dominated. This difference can be attributed to poor knowledge of general dental practitioners in making the diagnosis, since the reticular form seldom cause the patients to seek treatment and to be referred to the clinic.

The ulcerous form accounted for 15.4% of all the cases of lichen planus in this study, while in most of the reported material (12,16,21) it was the type most frequently seen.

The atrophic form was the next most common form in this study (10.2%), while the bullous form was the one least encountered (2.6%).

Oral manifestations of lichen planus were by far the most prevalent in the buccal mucosa. Pindborg and coworkers (11) registered 84.3% of all lesions located to the buccal mucosa, Salem (16) found lesions in this location in 86% of the cases, Silverman (12) found in 79% of the cases and Bagan (10) in 88.2% of the cases. These figures are in good agreement with the findings in the present study since buccal lesions were found among 82% of the individuals with lichen planus.

CONCLUSION

The present study showed that the prevalence of oral lichen planus was 1.6% in selected character of screened population. Oral lichen planus occurred more frequently in women. The highest prevalence for women was found in the age group 50-59 years. Reticular lichen planus was the most common type, found in 71.8%. The buccal mucosa was the most frequently involved site, followed by the tongue and alveolar ridge.

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