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Correlation Of Clinical Severity Of Oral Lichen Planus With Treatment Prognosis - A Retrospective Institution Based Study

Research Article

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Abstract

Lichen planus is an immunologically mediated mucocutaneous disease that is triggered by varied aetiological agents. Lichen planus shows many clinical features affecting skin, oral cavity, genital organ, nail and scalp. Lichen planus has well documented clinical findings and histological findings that aid in diagnosis.The objective of this retrospective study was to assess the clinical severity of oral Lichen Planus (OLP) with the treatment prognosis of the patients visiting Saveetha dental College and hospital. In the present study a total of 60 clinically diagnosed Lichen planus patients were included. Clinical and treatment details were recorded. All the collected data were analysed by appropriate statistics using SPSS software. The results revealed 60% of the cases to be females with 58.3% accounting for erosive type of lichen planus. 60% had involvement of bilateral buccal mucosa. Erosive variant showed 8 months duration of treatment using systemic steroids. Within the limitations of the study we can conclude thatfemales are more commonly affected than males with erosive lichen planus being the most common variant which has shown maximum treatment duration using systemic steroids. Follow up is advocated for these patients.

Keywords: Lichen Planus; Females; Buccal Mucosa; Steroids.

Introduction

Oral Lichen Planus (OLP) is defined as a chronic mucocutaneous inflammatory disease of immune origin [7, 28]. There are various factors which play a major role in the progression of the disease [28, 34]. These factors include stress, anxiety, hormonal imbalance, menopause, drugs [7, 28]. It is the most common type of mucocutaneous lesion affecting 2 to 5% of the general population [7, 28]. Females are more commonly affected [28]. Its onset is in the 4th to 5th decade of life [28]. Intraorally it involves the buccal mucosa, tongue although more commonly and also other sites such as floor of the mouth are rarely affected [28]. It presents clinically as a wide range from asymptomatic white keratotic lesions to painful erosions and alterations [5, 6]. It is clinically seen in various forms such as reticular, papular, plaque like, erosive, atrophy, bullous [6, 17]. The most common types are reticular and erosive form [6]. The epidemiological distribution of the type of OLP varies in each geographical region depending on their lifestyle, habits and other associated immune related factors [11, 23].

OLP is a T-cell mediated autoimmune disease in which the cytotoxic CD8+ cells triggers apoptosis of the basal cells of the oral epithelium [2, 19, 30, 31]. Further the T cells migrate into the epithelium either due to random encounter of antigen during routine surveillance in the basal keratinocyte [2, 19, 30, 31]. These migrated T cells directly bind to the MHC1 on keratinocyte or via the activated CD4 positive lymphocytes [2, 19, 30, 31]. This releases various factors such as IL2, IFN gamma, TNF alpha which in turn destroys the basal keratinocytes [2, 19, 30, 31].

Histopathological OLP is characterised by hydropic degeneration of basal epithelial cells with intra epithelial and dense subepithelial lymphocytes infiltrate [4, 13, 24, 39]. The WHO classified OLP as a potentially malignant disorder with a malignant transforma-

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tion rate of approximately 1.37% [4, 35, 36].

Many studies have been done on the pathogenesis of OLP, risk factors, treatment, disease characteristics and its rate of malignant transformation. This is the first kind of study done at an institutional level to assess the clinical severity of OLP mainly based on the symptoms and the type of OLP and also to correlate this with the treatment prognosis. Thereby it helps us to identify the association of clinical severity with the duration of treatment of OLP with steroid therapy. This study could serve as a basis to understand the pattern of disease with its treatment. Hence it could help the clinician in emphasising the need for treatment to the patient and also to predict the duration of treatment of OLP.

Materials And Methods

A cross-sectional, observational retrospective study was conducted. This study was approved by the scientific review board of Saveetha dental College and Hospital, Chennai. The sample consisted of patients with a diagnosis of OLP which had been followed up between July 2019 to February 2020 consisting of 60 patients. The clinical data of the patients visiting the institution were retrieved from the DIAS online patient portal. The following data were obtained: age, gender, symptoms, clinical presentation, Habits, treatment done and duration of treatment done with associated skin lesions were also evaluated.

The descriptive variables are quantified using bar graphs and frequency tables. Chi-square test was done for further clinical presentation, treatment done and duration of the treatment. $P<0.05$ was considered to be statistically significant.

Results And Discussion

Among 60 patients diagnosed during the period of June 2019 to February 2020 60% of the affected individuals with females and 40% were males. 72% of the affected were not associated with any habit and 28% had the habit of smoking and chewing. The common site was buccal mucosa (8.3%) followed by tongue (8.3%) and Gingiva (3.3%). Most of the patients, 58.3% had erosive type of lichen planus followed by reticular type which accounts for 35%. Pigmented lichen planus accounted for 6.7 % of the population. All these details are described in Table 1, Figure 1 and 2 respectively. Burning sensation was the most common symptom seen in patients which accounts for nearly 60%. When the clinical variants of oral lichen planus was correlated with gender, it was not found to be statistically significant $P = 0.769$ (Figure 3). However, Occurence of erosive type of oral lichen planus was more among females than males. When duration of treatment was correlated with the type of OLP, it was not found to be statistically significant $P = 0.134$ (Figure 4). However erosive lichen planus exhibits maximum treatment duration when compared to reticular type. There was no evidence of malignant transformation in the OLP cases reported during the period of study.

The clinical characteristics of patients included in this study was similar to that of the previous studies, although few differences were noted. Retrospective studies have limitations and cannot be compared satisfactorily to prospective studies. However they are useful in evaluating patient populations.

According to the clinical and histopathological criteria of the WHO the results of the study revealed that OLP is seen in middle-aged patients around 40 to 60 years with sex predilection for

Table 1. Demographic data of the population.

	Demographics	Percentage
Gender	Female	60%
	Male	40%
Age	20-40 years	34%
	40-60 years	66%
Type	Erosive	58.30%
	Reticular	35%
	Pigmented	6.70%

Figure 1. Bar graph depicting the frequency of site of occurrence of oral lichen planus. X axis showing the site of occurrence and Y axis indicating the frequency. 90% of the cases were seen in the buccal mucosa , 8.3% were seen in the tongue and 1.7% were seen in the gingiva.

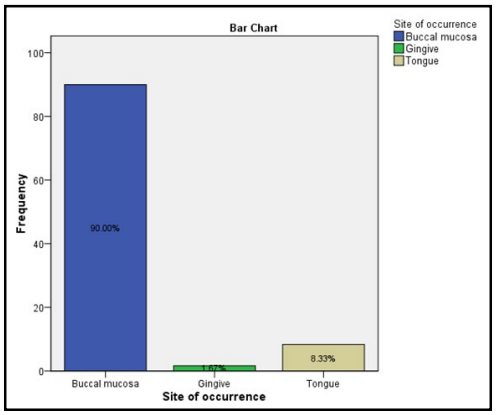


Figure 2. Frequency of occurrence of various clinical variants of oral lichen planus with X axis showing the clinical variants and Y axis showing the frequency. 58.3% of the cases were Erosive, 35% were Reticular and 6.7% were pigmented.

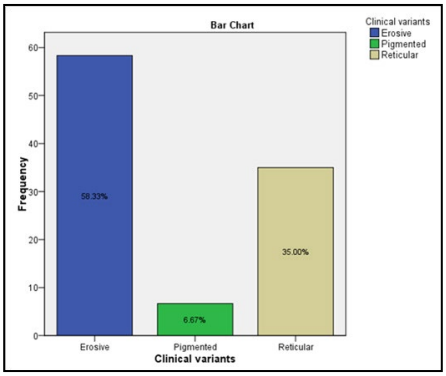


Figure 3. Correlation between gender and the different clinical variants of oral lichen planus with X axis depicting the clinical variants and Y axis depicting the frequency of occurrence in male and female. Erosivelichenplanus was more commonly seen among the females than the males. However, Chi square analysis shows no statistical significance with P = 0.769 (P>0.05).

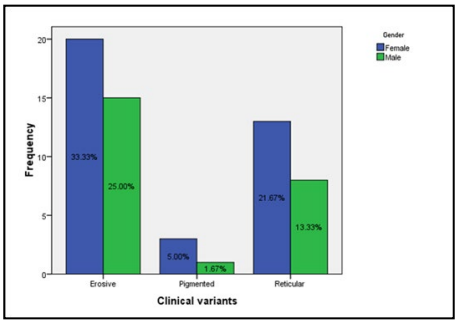
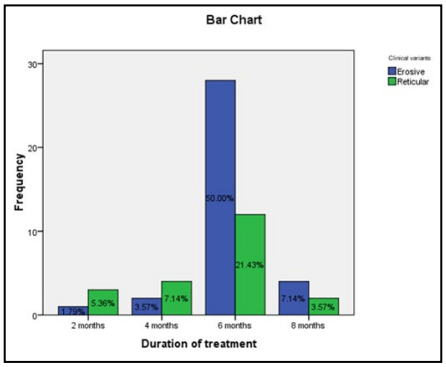


Figure 4. Correlation between the clinical variants of oral lichen planus and the duration of treatment. X axis depicts the duration of treatment and Y axis depicting the clinical Variants. Maximum duration of treatment is for erosive lichen planus when compared with reticular type. Chi square analysis shows no statistical significance with P=0.134 (P>0.05 statistically not significant).



females. The most commonly affected sites were buccal mucosa, gingiva and tongue. The male to female ratio is 2:3 which is in agreement with the other studies. Most of the studies in the other parts of the world had also a similar female predominance [12, 26-28, 37]. This could be attributed to hormonal imbalance, frequent use of medications such as paracetamol for pain, allergy to dentifrices [16]. OLP was more prevalent in the fourth decade of life in our study (mean age was 42.1 years) which is lower than the mean age group reported in central China (50.4 years), UK (52 years), Spain (56.4 years) and Italy (56.7 years) [12, 26-28, 37]. This was probably due to the ethnic population and geographic differences in our study when compared to previous studies. OLP in minor juveniles or children is uncommon and in our study childhood form of OLP was not observed [3, 16]. This could be attributed to the rarity of associated autoimmune conditions, exposure of drug and dental restorative materials, infective agents and other environmental triggers that have been known to initiate lichen planus (Thapa and Malathi 2016).

As previously mentioned, the lesions of OLP were bilateral, symmetrical and buccal mucosa was the most commonly affected site [3, 14, 16, 37]. Buccal mucosa concomitant with gingiva was the most common multiple oral site [27, 40]. Isolated lesions on the floor of the mouth and palate were rare [28]. Erosive was the most common form and was present in 58.3% of the patients which was predominant in females. This could be attributed to hormonal imbalance due to menopause as most of the women were between 45-60 years of age and use of allergic dentrifice and application of clove oil for relief of burning sensation [37]. These findings were inconsistent with the previous studies in which the reticular type of OLP was most common among females [27, 28].

The association of pigmentation of the oral mucosa was a prominent feature of reticular form of OLP [3, 16]. It was noted to be 6.7%. This could be attributed to various factors such as race, skin type and habits such as chewing tobacco, smoking [16]. The pigmentation was diffuse or in patches which ranged from brown to black in colour and was especially seen in the buccal mucosa. This was similar to other Indian studies (S, Anandan and Prasanthi, 2013; Hartanto and Kallarakal, 2017; Institute and National Cancer Institute, 2020).

The majority of the patients (60%) complained of some degree of oral discomfort in the form of burning sensation as reported in other studies [3]. Nearly 75% of the erosive lichen planus was treated using systemic steroids like Prednisone for a maximum period of eight months. During the later follow up, it was noted that the patients responded well with systemic steroid therapy when compared to topical steroid therapy. This could be because of the recalcitrant nature of OLP to topical steroids therapy [1, 8, 20, 21, 25].

Even though there is no specific treatment for OLP, symptomatic treatment is indicated [8, 21]. Corticosteroids provide relief and are the first drug of choice [1, 38]. Reticular type has better response to steroids when compared to erosive form [3, 16]. This can be related to the chronicity and refractory course of erosive lichen planus (Romero et al. 2016). The Spontaneous remission is seen in 40% of oral lichen planus [16].

To overcome this remission, use of ultraviolet A (PUVA) and laser can be used as an alternative therapy [29]. Small and accessibility solutions can be treated by the use of adherent paste in the form of a custom tray which allows accurate control over the contact time it ensures that the entire regional surface is exposed to the drug [9-11]. Local drug therapy can provide a more targeted and efficient drug delivery option than systemic delivery for the disease of oral mucosa [11, 33]. However potential for novel drug delivery systems in dentistry has not yet been fully developed and further research is still needed to improve the treatment outcomes [9-11].

Conclusion

OLP accounts for nearly 28.4% of the OPMD reporting to Saveetha dental College and Hospital with erosive type of lichen planus being the largely reported type of OLP which has an increased rate for malignant transformation. Hence it is necessary to follow up the OLP patients regularly and to provide a precise treatment which prevents the remission of the disease in these patients.

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