Incidence and treatment outcome of oral lichen planus in southeast Serbia in a 10-year period (1997–2007)

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Abstract

Background/Aim. Lichen planus is a chronic, immunologic, mucocutaneous disease with a wide range of clinical manifestations. The aim of this retrospective study was to evaluate the most common forms of oral lichen planus (OLP) and its symptoms and to describe treatment responses in patients during 10-year period. Methods. The study was conducted on 163 OLP patients who came in the Department of Oral medicine and Periodontology between 1997 and September 2007. Each case was classified into one of four clinical subtypes: reticular, atrophic, erosive-ulcerative, bullous. Results. There was no significant difference in patients age. Women were found to be significantly more likely to have OLP (p < 0.001). Corticosteroids were effective in reducing symptoms, erythema and healing ulcers. Improvement was shown over a long term in 61.35% patients. Over the long term 38.65% patients maintained the same type of OLP or it became a more severe type. Two patients (1.22%) developed a more severe type. Two patients (1.22%) developed a more severe type. Two patients (1.22%) developed a more severe type. Two patients (1.22%) developed a more severe type. Conclusion. The response of patients with erosive OLP to a short course of systemic corticosteroids often was quite remarkable. However, symptoms and signs tended to recur after this treatment. Periodic examinations, patient education, medical treatment, monitoring of side-effects as well as follow-up biopsies are necessary for management of OLP patients.

Key words: lichen planus, oral; mouth neoplasms; drug therapy; treatment outcome.

Introduction

Lichen planus is a chronic, immunologic, mucocutaneous disease with a wide range of clinical manifestations. The oral mucosa commonly is involved and may be the only site of involvement. Oral lichen planus (OLP) is a relatively common disorder, estimated to affect 0.5% to about 4.0% of the general population. Oral lichen planus is found more frequently in women, and the onset occurs often after the fourth decade of life. The major types of OLP are the...
Oral lichen planus can develop on any mucosal surface, including the lips, but most frequently develops on the buccal mucosa. The lesions are often bilateral and develop on more than one mucosal surface. However, the presentation can be limited to one site. Although OLP seldom goes into remission, progression of erosive-ulcerative form to cancer is infrequent.

Many retrospective and prospective studies, have suggested that OLP has potential for malignant development. Since OLP is considered a premalignant condition, a recall system for OLP patients has been recommended to facilitate the early diagnosis of oral cancer. The aim of this recall system was to reduce morbidity and mortality from oral cancer arising in OLP patients.

Treatment is administered primarily to control symptoms, since there is no established cure. Symptoms can range from none, with the patient being unaware of the presence of intraoral lesions, to extremely painful lesions, which may interfere greatly with eating and thus significantly affect the quality of life. Close follow-up is suggested, not only to monitor medications for discomfort, but because of an established risk of squamous-cell carcinoma developing in areas of OLP. Systemic and topical corticosteroids have been the most reproducibly effective medications to control symptoms and signs of the disease. Localized oral lesions are treated with topical corticosteroids, applied two or four times daily after meals. Generalized oral lesions are often treated effectively with a steroid mouth rinse twice daily after meals. Candida albicans superinfection, which may accompany any immunosuppressive therapy, should be controlled with topical antimycotics, especially in risk groups such as xerostomias.

The OLP diagnosis was based on clinical (Figures 1 and 2) and histopathologic findings (Figure 3). The histopathologic features of OLP include several epithelial changes: epithelial hyperkeratosis, atrophy or hyperplasia, acantosis, saw-toothed rete ridges, liquefaction degeneration of basal cells, and single-cell keratinization. A homogeneous cell-free zone is frequently present in the basement membrane zone. The subepithelial connective tissue shows a band-like inflammatory infiltrate dominated by lymphocytes and macrophages. Biopsy is an important tool in the diagnostic process for OLP, but a diagnosis of OLP based solely on histopathology in some cases leads to wrong results. Due to this we combined biopsy (histopathologic results) and clinical criteria.

The aim of this retrospective study was to evaluate the most common forms of OLP and its symptoms and describe treatment responses in patients with OLP who were referred and examined in our oral medicine department during a 10-year period.

**Methods**

A total of 163 OLP patients were seen by the two doctors in the Department of Oral medicine and Periodontology, Dental Clinic, School of Medicine Niš, Serbia, between 1997 and 2007. The examined patients originated from southeast Serbia which includes Vranje, Leskovac, Pirot, Dimitrovgrad, Prokuplje and smaller towns and villages in this area. The group included patients who were being seen for the first time, as well as the patients attending for a follow-up visit.

At the first clinic visit, the following information from each patient were collected: age, sex, medical history, family history and social history, initial clinical presentation, treatments rendered, responses to treatment, side effects and changes in clinical presentation over time. Each case was classified into one of four clinical subtypes: reticular, atrophic, erosive-ulcerative, bullous.

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**Fig. 1 – Oral lichen planus reticular form.**

**Fig. 2 – Oral lichen planus erosive-ulcerative form (ulcerative lesion surrounded with reticular white striations, on the left buccal mucosa).**
Atrophic (> 0.05) and atrophic (< 0.01) types of OLP were predominant in women (Table 1). Overall, the reticular type of OLP was dominant, significantly more than atrophic, erosive-ulcerative and bullous type of OLP (< 0.001). Both men and women, were found to be significantly more likely to have the reticular type of OLP than atrophic (< 0.01) and bullous types (< 0.001).

Associated diseases at the initial clinic visit were as follows: diabetes 4.9%, history of hypertension 22%, immunopathic diseases 2%. Family history was known for 28% patients; of these 3% had blood relatives with known OLP, and the rest did not know of any relatives who had OLP.

The patients reported taking the following medications: 3.8% anti-diabetic drugs, 22% antihypertensive drugs, 9% antidepressants. Totally 48% of the patients reported in their medical history that they had some type of allergy, including sensitivities to foods, drugs, pollen, gold, iodine, nickel.

The treatment was offered to control the symptoms, and in the case of erosive-ulcerative OLP, to heal ulcers. For topica1 corticoid application we used a liquid medicament form (solution Dexason-Neomycin) or spray (spray Kenalog S, spray Geocorton). The patients were instructed to apply this medicament to the lesions three to four times daily for 1–2 days (depending on severity of lesions). Prednisone was a systemic corticosteroid used, which we administered in one or two doses a day, for a total daily dosage ranging from 20 to 80 milligrams. These were administered primarily for erosive-ulcerative OLP and severe pain.

We followed short- and long-term responses to treatment. Short-term response (one to two weeks after starting the treatment) was: treatment was effective in reducing symptoms of OLP and in healing ulcers and reducing enanthema. However, symptoms and signs tended to recur after this treatment. Improvement was shown over long term in 61.35% of the patients, especially in reducing symptoms of OLP. The patients emphasized the improved quality of life during medicament therapy (topical steroids occasionally). Complete spontaneous remission (no symptoms and no clinical evidence of disease) without treatment was not noticed. Over a long term 38.65% patients maintained the same type of OLP or it became a more severe type. Namely, 24 (15.12%) patients had the same reticular type of OLP, 22 (13.86%) showed the atrophic type, as well as 15 (9.45%) had a more severe type – erosive-ulcerative. Two patients (1.22%) developed oral carcinoma during the follow-up period. The sites of oral carcinoma were at buccal mucosa in OLP lesions.

Table 1

<table>
<thead>
<tr>
<th>OLP type at first clinical visit</th>
<th>Women n (%)</th>
<th>Age (year) ± SD</th>
<th>Men n (%)</th>
<th>Age (year) ± SD</th>
<th>All patients n (%)</th>
<th>Age (year) ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reticular</td>
<td>56 (70.00)</td>
<td>52.44 ± 16.78</td>
<td>24 (30.00)</td>
<td>50.95 ± 17.23</td>
<td>80 (49.08)</td>
<td>51.70 ± 16.24</td>
</tr>
<tr>
<td>Atrophic</td>
<td>32 (80.00)</td>
<td>56.24 ± 12.89</td>
<td>8 (20.00)</td>
<td>55.95 ± 13.61</td>
<td>40 (24.54)</td>
<td>56.10 ± 14.60</td>
</tr>
<tr>
<td>Erosive-ulcerative</td>
<td>25 (59.52)</td>
<td>55.64 ± 14.80</td>
<td>17 (40.48)</td>
<td>55.96 ± 16.22</td>
<td>42 (25.77)</td>
<td>55.80 ± 15.20</td>
</tr>
<tr>
<td>Bullous</td>
<td>1 (100.00)</td>
<td>58.00 ± 1.00</td>
<td>0 (0.00)</td>
<td>58.00 ± 1.00</td>
<td>0 (0.61)</td>
<td>58.00 ± 1.00</td>
</tr>
<tr>
<td>Total</td>
<td>114 (69.94)</td>
<td>54.26 ± 13.61</td>
<td>49 (30.06)</td>
<td>53.50 ± 15.20</td>
<td>163 (100.00)</td>
<td>53.90 ± 15.36</td>
</tr>
</tbody>
</table>

Discussion

In the last decade, there have been a number of follow-up OLP studies. In 1991, Silverman et al.32 reported a series of 214 patients with OLP followed up a mean period of 7.5 years, during which time 5 patients had developed squamous cell carcinoma in the OLP site. In 1993, Barnard et al.36 reported on a series of 241 patients with OLP followed up for 10 years, with 8 patients developing squamous cell carcinoma and another developing carcinoma in situ. In 1997, Silverman and Bahl13 reported that 3 of 95 patients followed up for a mean of 6.1 years developed squamous cell carcinoma. In another study, Silverman et al.37 reported malignant transformation in 3.2% of patients with OLP. Gandolfo et al.37 reported that 9 of 402 patients followed up for a mean of 4.9 years developed squamous cell carcinoma. Our findings are in accordance with these reports.

Our findings are in accordance with those of several authors who reported that malignant transformations are more
likely to occur in atrophic and erosive-ulcerose lesions, because all the malignancies in the present study developed in erosive and atrophic lesions. Because of all these reasons, periodic follow-up examinations (2–4 times annually) are important. Early detection of premalignant lesions and small oral cancers will allow patients to be treated earlier. Also, OLP patients should be instructed to report clinical changes in the condition and to come to regular follow-up appointments.

Because OLP is an incurable disease, treating symptoms is extremely important in addressing quality-of-life issues. Use of the required potent medications always involves a consideration of drug benefits weighed against potential adverse side effects. Therefore, systemic corticosteroids were used cautiously and with discretion. However, according to our objective assessments, the combination of systemic and topical corticosteroid regimens over time can offer significant benefits with minimal risk of unpleasant side effects.

The choice of treatment obviously depends on the severity of discomfort, the patient’s overall health and compliance issues. However, initial short course of systemic corticosteroids had the advantages of predictability, ease of compliance and patient optimism necessary for a positive long-term outlook in regard to living with erosive OLP. In some patients (17%), occasional short-term daily dosages of systemic prednisone were sufficient for adequate clinical control of symptoms. In other patients (83%), fairly regular topical applications were both necessary and effective for the desired control of discomfort. The schedule for using topical steroids in our study varied between patients since the goal of treatment was acceptable comfort and compliance with application regimens. Drug tolerance and eventual therapeutic ineffectiveness with daily use of topical steroids have not been found.

Medical considerations in patients receiving long-term systemic prednisone include calcium supplements to minimize bone loss, potassium for diuresis, glucose control, monitoring blood pressure and ophthalmogenic examinations. In this study, fungal overgrowth of normal oral flora by Candida leading to candidiasis was infrequent (24%), and was associated primarily with the use of topical corticosteroids. This can be explained by the local conversion of epithelial cell glycogen to glucose, which selectively nurtures candidal proliferation. Topical antifungals controlled this occasional problem.

Following the long-term outcomes for patients with OLP, it is clear that symptoms persist indefinitely. However, it is also evident that judicious use of systemic corticosteroids, topical steroids or both are more beneficial than detrimental in improving patients’ quality of life, which is often so diminished by pain and uncertainty associated with OLP. For example, after a long-term follow-up of our patients with the most severe form of OLP (erosive-ulcerative), the percentage with moderate-to-severe pain was reduced from 90 to 35%. It is also apparent that in 61.35% patients, the signs and form of OLP were reduced to less severe types as a result of corticosteroid treatment. Erosive-ulcerative and atrophic lesions can be converted into reticular lesions using topical steroids. Hence, treatment of erosive and atrophic lesions with topical steroids may reduce the risk of oral cancer. OLP patients should be advised that a nutritious diet including fresh fruit and vegetables (antioxidants) may help reduce the risk of oral cancer. Due to the potential role of Candida albicans in the development of oral cancer, fungal superinfection should be eliminated with topical antymycotics.

Conclusion

The response of patients with erosive OLP to a short course of systemic corticosteroids often was quite remarkable. However, symptoms and signs tended to recur after this treatment. Periodic examinations, patient education, medical treatment, monitoring of side-effects as well as follow-up biopsies are necessary for management of OLP patients.

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