Review Article

IJCRR
Section: Healthcare
Sci. Journal
Impact Factor
4.016

ORAL LICHEN PLANUS: AN UPDATE

Md. Asad Iqubal[1], Mobeen Khan[2], Umesh Chandra Chaudhary[3], Swetarchi[4], Bushra Farhat[5], Nazish Akhtar[6]

[1]MDS, Department of Oral medicine and Radiology, Institute of Dental Sciences, Bareilly, Uttar Pradesh, India; [2]Post Graduate Student, Department of Oral medicine and Radiology, Institute of Dental Sciences, Bareilly, Uttar Pradesh, India; [3]Senior lecturer, Department of Pedodontics and Preventive Dentistry, Chandra Dental College and Hospital Lucknow, Uttar Pradesh, India; [4]Post Graduate Student, Department of Oral medicine and Radiology, Institute of Dental Sciences, Bareilly, Uttar Pradesh, India; [5]Post Graduate Student, Department of Oral medicine and Radiology, Institute of Dental Sciences, Bareilly, Uttar Pradesh, India; [6]Post Graduate Student, Department of Oral medicine and Radiology, Seema Dental College and Hospital, Rishikesh, Uttarakhand, India.

ABSTRACT

Lichen planus is a mucocutaneous disease affecting approximately 1.5 to 2% of the world population. Oral lichen planus (OLP) is a chronic mucosal condition. It has various oral manifestations, the reticular form being the most common. The course of the disease is usually unpredictable with bouts of remission and exacerbation being common. The most widely accepted treatment for lesions of OLP involves topical or systemic corticosteroids to modulate the patient's immune response.

Key Words: Lichen planus, Mucocutaneous disease, Oral lichen planus, Lichenoid reaction, Corticosteroids

INTRODUCTION

It is a chronic, inflammatory disease that affects mucosal and cutaneous tissues. Oral lichen planus (OLP)occurs more frequently than the cutaneous form and tends to be more persistent and more resistant to treatment.[1] lichen planus is a relatively common disorder, estimated to affect 0.5% to 2.0% of the general population.[2]Thereis a strong preference for the female sex[3] Sousa & Rosa (2005) surveyed 79 oral lichen planus cases diagnosed between 1974 and 2003, and found that women are nearly four times more affected by this condition than men, and that white individuals are five and a half times more likely to develop this disease compared to other races.[4] Clinically, oral lichen planus has specific and clearly identifiable features,[5] usually presenting in one of two main forms - the reticular and the erosive forms – although other forms are not rare.[6] In fact, according to Mollaoglu (2000), four other forms were originally described: the papular, "plate-like", bullous and atrophic forms.[7] The management of OLP should begin by taking the proper history and clinical examination. Elimination of any form of irritants-like malocclouded teeth, ill-fitting dentures, amalgam fillings should be removed. Incisional biopsy should be done to confirm the diagnosis. The patients with erosive or atrophic forms particularly should be observed periodically as it has malignant transformation potential varying between 0.3% and 3%. For the effective management of OLP, one has a wide range of drugs to choose from. When a patient with OLP presents with a burning sensation, usually as a first line of treatment one can prescribe a topical preparation of steroid and retinoids. As a second line of treatment in cases of steroids resistant, we may prescribe immunomodulatory drugs such as levamisole and dapsone. In resistant cases, where it is not responding to topical preparations or in a severe form of OLP tacrolimus, and systemic corticosteroids in conjunction with immunosuppressive like azathioprine can be given. So, it is essential to choose appropriate drug, mode of administration and dosage regimens individually and equal importance should be given for stress management.[8]

ETIOLOGY

The cause of OLP is unknown. It is said some certain factors mention below may trigger an inflammatory disorder.

- Hepatitis C infection and other types of liver disease.
- Allergy-causing agents (allergens), such as foods, dental materials or other substances.
- Genetic background.
- Immunodeficiency disorder.
- Some bacterial and viral diseases.
- Certain medications for heart disease.

Corresponding Author:
Mobeen Khan, Post Graduate Student, Department of Oral medicine and Radiology, Institute of Dental Sciences, Bareilly, Uttar Pradesh, India.
E-mail: drmkhan26@gmail.com

Received: 04.06.2016 **Revised:** 07.07.2016 **Accepted:** 17.08.2016

- High blood pressure or arthritis.
- Certain drugs like ibuprofen and naproxen.
- Stress.
- Graft versus host disease.[9,10]

CLINICAL FEATURES

Lichen planus affects primarily middle-aged adults, and the prevalence is greater among women.[11] Children are only rarely affected.[12] The classic skin lesions of the cutaneous form of lichen planus can be described as purplish, polygonal, planar, pruritic papules and plaques. These skin lesions commonly involve the flexor surfaces of the legs and arms, especially the wrists. The nail beds may also be affected, with resultant ridging, thinning and subungual hyperkeratosis.[13] Scalp involvement, if untreated, can lead to scarring and permanent hair loss.

Since 30% to 50% of patients with oral lesions also have cutaneous lesions, the presence of these characteristic cutaneous lesions can aid in the diagnosis of OLP. Several types of OLP have been described, the 2 main types being reticular and erosive OLP.[1] It is not uncommon for the same patient to present with multiple forms of OLP.

HISTOLOGY

Lichen planus has a unique microscopic appearance that is similar between cutaneous, mucosal and oral. A Periodic acid-Schiff stain of the biopsy may be used to visualise the specimen. Histological features seeninclude: [14]

- Thickening of the stratum corneum both with nuclei present (parakeratosis) and without (orthokeratosis). Parakeratosis is more common in oral variants of lichen planus.
- Thickening of the stratum granulosum
- Thickening of the stratum spinosum (acanthosis) with formation of colloid bodies (also known as Civatte bodies, Sabouraud bodies) that may stretch down to the lamina propria.
- Liquefactive degeneration of the stratum basale, with separation from the underlying lamina propria, asa result of desmosome loss, creating small spaces(Max Joseph spaces).
- Infiltration of T cells in a band-like pattern into the-Dermis[12] “hugging” the basal layer.
- Development of a “saw-tooth” appearance of therete pegs, which is much more common in non-oral forms of lichen planus.

CLINICAL SIGNIFICANCE OF ORAL LICHEN PLANUS

OLP is one of the most common mucosal conditions affecting the oral cavity.[15]Therefore; dentists in clinical practice will regularly encounter patients with this condition. Because patients with the atrophic and erosive forms of OLP typically experience significant discomfort, knowledge of the treatment protocols available is important. The similarity of OLP to several other vesiculoulcerative conditions, some of which can lead to significant morbidity, makes accurate diagnosis essential.

TREATMENT

Topical steroids are the mainstay of palliative treatment of OLP but alternative therapeutic approaches are highly regarded given the lack of strong evidence on any available treatment modality.[16,17] Various new agents have been recently suggested to treat OLP.

Corticosteroids

Corticosteroids are the first line of treatment for OLP because of their activity in dampening cell mediated immune activity there by modulating the immune function. The drugs are administered either topically, intralesionally or systemically. The mild to moderate symptomatic lesions are treated using topical corticosteroids. Eg. Triamcinolone acetonide 0.1%, 0.05% flucinonide, 0.025% clobetasol propionate etc.[18] Patients are instructed to apply a thin layer of the prescribed topical corticosteroid upto 3 times a day for 2 weeks. The advantage of topical steroid application is that side effects are fewer than with systemic administration. Adverse effects like secondary candidiasis, thinning of the oral mucosa and discomfort on application are seen with the use of these drugs. Prolonged use of potent topical corticosteroids with occlusal dressing can cause adrenal suppression.

Intra lesional steroid therapy

Local injection of up to 0.2 to 0.4 ml of triamcinolone acetonide containing 10 mg/ml is used to treat persistent localized lesions.

Systemic steroid therapy

Prednisolone is the most commonly prescribed systemic steroid to manage OLP. The approach to therapy is to prescribe a high-dose, short-course regimen to maximize therapeutic effect while minimizing side effects. A single daily morning dose of 40 to 80 mg of prednisone is prescribed for no more than 10 days.

The risk of the Hypothalamic-pituitary-adrenal axis (HPA-axis) suppression is negligible with such short-term bursts, thus tapering is not necessary. However, other possible adverse side effects may occur and include insomnia, diarrhea, mood swings, nervousness, fluid retention, muscle weakness, hypertension, and decreased resistance to infection. Another approach to reduce the amount of total prednisolone necessary is to concurrently prescribe a steroid-sparing agent such as the immunosuppressant drug azathioprine (50 to 100 mg/day) or levamisole (150 mg/day). Azathioprine appears to act synergistically with prednisone to reduce inflamma-

tion and allow for a lowering of the therapeutic prednisone dose. Possible side effects include nausea, vomiting, diarrhea, pancreatitis, bone marrow suppression, hepatotoxicity, arthralgias, and retinopathy. Levamisole in a dose of 150 mg/day and prednisolone25 mg/day for 3 consecutive days each week for 4-6weeks, showed improved results in the management of erosive OLP. Minor rashes, insomnia and head ache are few of the noted side effects.[19]

Prolonged use of any of the above modalities without supervision will result in undesirable systemic effects and adverse local effects including candidiasis and atrophy.

Immunosuppressant - Cyclosporine

Cyclosporine is an immunosuppressant and reduces the production of lymphokins. This drug may be used topically or in the form of mouth rinse. Cyclosporin can be used as an alternative therapy to conventional treatments for initial control of oral Lichen planus. The most common side effects of this drug are Hypertension and nephrotoxicity which limits its use in the treatment of oral lichen planus.[20]

Immunosuppressant - Tacrolimus

Tacrolimus is a macrolide immunosuppressant with a mechanism of action similar to cyclosporine, but is 10 to100 times more potent and with better mucosal penetrating properties.

Topical use of tacrolimus is a safe, well tolerated, and effective therapy for oral lichen planus lesions recalcitrant to traditional therapies.[21]

Retinoids

Retenoids have also been tried for the treatment of OLP. Previous studies revealed that side effects were common and troublesome with marginal improvement. Topical application of Fenretinide(4-HPR), a newer retinoid showed to have a positive result with minimal side-effects in the treatment of OLP.[22]

UV radiation

UV irradiation, especially in combination with psoaralens modulates the function of cells of the immune system. A study showed that PUVA with methoxypsoaralen which produced a marked improvement in 9 out of 18 patients, with common side effects such as nausea, dizziness and sun sensitivity.[23]

Griseofulvin

Griseofulvin has been advocated for the treatment of erosive-ulcerative lesions when steroid treatment is contraindicated or when the lesions are resistant to steroids.

Anti-malarials

Hydroxy-chloroquine sulphate showed positive results in management of OLP. 9 out of 10 patients showed excellent response to hydroxychloroquine when given in dosage of200 to 400 mg daily as a monotherapy for 6 months.[24]

Dapsone

Use of dapsone in the management of OLP has revealed some benefit, but disappointing results have been seen in gingival lesions. Generally the use of dapsone is precluded because of significant adverse effects like hemolysis, nausea and headache.[25]

Phenytoin

It is an anti-epileptic drug with immunomodulatory and wound healing properties.

Photodynamic therapy

Photodynamic therapy (PDT) uses a photo sensitizing compound like methylene blue which is activated at a specific wavelength of laser light PDT have immunomodulatory properties which may induce apoptosis in the hyperproliferating inflammatory cells present in diseases like psoriasis and lichen planus, there by reversing the hyperproliferation and inflammation of lichen planus.[26]

Surgical management

Surgical treatment is more applicable to the plaque-like lesions, because the affected surface epithelium can be removed easily. Surgical management is not suitable for the erosive and atrophic types because the surface epithelium is eroded. Cryosurgery and carbon dioxide laser therapies have been tried in management of OLP lesions.

NATURAL ALTERNATIVES

Lycopene is a potent antioxidant. Supplementing with 8 mg/day of lycopene for 8 weeks showed favourable results in OLP patients. Burning sensation was reduced by84% and lowered oxidative stress in a placebo-controlled trial.[27]Higher dosages of curcumin (up to 6,000 mg/day) helped a significant number of OLP patients control their symptoms. Minimal side effects like diarrhea and gastrointestinal discomfort may occur, which are usually dose related.[28]

Green tea (epigallocatechin-3-gallate) is known to have possessing anti-inflammatory and chemopreventive properties. Green tea is known to inhibit T-cell activation, migration, proliferation, antigen presentation and control other inflammatorymediators.[29]

DISCUSSION

Oral lichen planus (OLP) is a common chronic inflammatory disorder. Identification of the causative agent is essential for the treatment of the oral lichen planus. Relief form symptoms of oral lichen planus can be achieved by the topical application of corticosteroids alone or in combination with other immunomodulatory topical agents. Systemic corticosteroids are used to control the disease.

CONCLUSION

Oral lichen planus (OLP) is a chronic mucosal condition commonly encountered in clinical dental practice. Proper history and clinical examination is very important for diagnosis. Incisional biopsy should be done to confirm the diagnosis. For the effective management of OLP, one has a wide range of drugs to choose from. Continuous development in management protocol for OLP is required due to recent increase in the incidence of malignant transformation rate even in the non-risk population group.

ACKNOWLEDGEMENT

Authors acknowledge the immense help received from the scholars whose articles are cited and included in reference of this manuscript. The authors are grateful to authors / editors / publishers of all those articles, journal and books from where the literature for this article has been reviewed and discussed.

REFERENCES

1. Scully C, Carrozzo M. Oral mucosal disease: Lichen planus. Br J Oral Maxillofac Surg 2008; 46:15-21.
2. McCreary CE, Mc Cartan BE. Clinical management of lichen planus. Brit J Oral Maxillofacial Surg 1999; 37(5):338-43.
3. Gorsky M, Epstein JB, Hasson-Kanfi H, Kaufman E. Smoking habits among patients diagnosed with oral lichen planus. Tobacco Induced Diseases 2004; 2(2):103-8.
4. Sousa FACG, Rosa LEB. Perfil epidemiológico dos casos de líquen plano oral pertencentes aos arquivos da Disciplina de Patologia Bucal da Faculdade de Odontologia de São José dos Campos - UNESP. Cienc Odontol Bras 2005; 8(4):96-100.
5. Eisen D, Carrozzo M, Sebastian J-VB, Thongprasom K. Oral lichen planus:clinical features and management. Number V. Oral Dis 2005; 11(6):338-49.
6. Edwards PC, Kelsch R. Oral lichen planus: Clinical presentation and management. J Can Dent Assoc 2002; 68(8):494-9.
7. Mollaoglu N. Oral lichen planus:a review. Br J Oral Maxillofac Surg 2000; 38(4):370-7.
8. Gujjar P, Zingade J, Patil S, Hallur J. Recent Update on Treatment Modalities of Oral Lichen Planus- A Review. IJSS Case Reports & Reviews 2015; 2(4):40-44.
9. Ismail SB, Kumar SKS, Zain RB. Oral lichen planus and Lichenoid reactions; etiopathogenesis, diagnosis, management and malignant transformation. J Oral Sci 2007; 49:89–106.
10. Sumairi B. Ismail, Satish K. S. Kumar and Rosnah B. Zain. Oral lichen planus and lichenoid reactions: etiopathogenesis diagnosis, management and malignant transformation. Journal of Oral Science, 2007; 49(2):89-106.
11. Brown RS, Bottomley WK, Puente E, Lavigne GL. A retrospective evaluation of 193 patients with oral lichen planus. J Oral Pathol Med 1993; 22(5):69-72.
12. Jungell P. Oral lichen planus: a review. Int J Oral Maxillofac Surg 1991; 20(3):129-35.
13. Katta R. Lichen planus. Am Fam Physician 2000; 61(11):3319-28.
14. Thongprasom, K; Carrozzo, M; Furness, S; Lodi, G (Jul 6, 2011). "Interventions for treating oral lichen planus."The Cochrane database of systematic reviews (7): CD001168. doi:10.1002/14651858.CD001168.pub2. PMID 21735381.
15. Pynn BR, Burgess KL, Wade PS, Mc Comb RJ. A retrospective survey of 2021 patients referred to the Toronto Hospital Mouth Clinic. Ont Dent 1995; 72(1):21-4.
16. Sahebjamee M, Arbabi-Kalati F. Management of oral lichen planus. Arch Iran Med 2005; 8:252-6.
17. Cheng S, Kirtschig G, Cooper S, Thornhill M, Leonardi-Bee J, Murphy R. Interventions for erosive lichen planus affecting mucosal sites. Cochrane Database Syst Rev 2012; 2: CD008092.
18. Plemons J, Ree T, Zachariah N. Absorption of topical steroid and evaluation of adrenal suppression in patients with erosive lichen planus. Oral Surg Oral Med Oral Pathol. 1990; 69:42-44.
19. Lu SY, Chen WJ, Eng HL. Response to levamisole and low-dose prednisolone in 41 patients with chronic oral ulcers: a 3-year open clinical trial and follow-up study. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1998; 86:438-45.
20. Harpenau LA, Plemons JM, Rees TD. Effectiveness of a low dose of cyclosporine in the management of patients with oral erosive lichen planus. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1995; 80:161-67.
21. Stoopler ET, Sollecito TP, DeRossi SS. Oral lichen planus. Update for the general practitioner. N Y State Dent J. 2003; 69:26-28. PMID: 13677863
22. Tradati N, Chiesa F, Rossi N, Grigolato R, Formelli F, Costa A, et al. Successful topical treatment of oral lichen planus and leukoplakias with fenretinide (4- HPR). Cancer Lett. 1994:76:109-11. PMID: 8149338
23. Lundquist G, Forsgren H, Gajecki M, Emtestam L. Photochemotherapy of oral lichen planus: A cotrolled study. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 1995; 79:554-58.
24. Eisen D. Hydroxychloroquine sulfate (Plaquenil) improves oral lichen planus: An open trial. J Am Acad Dermatol. 1993; 28:609-612.
25. Falk DK, Latour DL, King LE Jr. Dapsone in the treatment of erosive lichen planus. J Am Acad Dermatol. 1985; 12:567-70. PMID: 3989015
26. Aghahosseini F, Arbabi-Kalati F, Fashtami LA, Fateh M, Djavid GE. Treatment of oral lichen planus with photodynamic therapy mediated methylene blue: A case report. Med Oral Patol Oral Cir Bucal. 2006; 11:E126-9.
27. Saawarn N, Shashikanth MC, Saawarn S, Jirge V, Chaitanya NC, Pinakapani R. Lycopene in the management of oral lichen planus: A placebo-controlled study. Indian J Dent Res. 2011; 22:639-643.
28. Chainani-Wu N, Collins K, Silverman S Jr. Use of curcuminoids in a cohort of patients with oral lichen planus, an autoimmune disease. Phytomedicine. 2012; 19(5):418-423.
29. Zhang J, Zhou G. Green tea consumption: an alternative approach to managing oral lichen planus. Inflamm Res. 2012; 61:535-9.