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Oral Lichen Planus- of treatment Modalities

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Abstract

Lichen planus (LP) is one of the most common mucocutaneous disease that manifests itself in the oral cavity and is of worldwide distribution. Its management continues to challenge even the most experienced oral physician. Interplay of host, lifestyle and environmental factors has been implicated in the etiopathogenesis of LP. It is believed that LP is caused by cell mediated immunity initiated by endogenous or exogenous factor. Oral discomfort is the cause of concern in patients with oral lichen planus (OLP). Symptoms can vary from mucosal sensitivity to continuous debilitating pain. As large no. of agents have been used to treat OLP but still search is going on for complete solution for this disease. Oral health care professionals can play a vital role in identifying patients with OLP and should provide appropriate preventive and therapeutic measures that will help to preserve a person's health function and quality of life. The purpose of this review is to discuss various treatment modalities available, which will assist the clinician to manage the OLP patients.

Keywords: - Oral lichen planus; oral mucous membrane.

Introduction

Different conditions of local and systemic origin are manifested in the oral cavity; many of them with controverted and or multifactorial etiology.[1]

Oral Lichen Planus (OLP) is a chronic inflammatory condition that affects the oral mucous membranes with a variety of clinical presentations.[2] The oral eruptions usually have a distinct clinical morphology and characteristic distribution but may also present a wide array of patterns and forms.[3] The cause of the disease is unknown, but the possibility that immunologic factors are involved has been considered.[4] Speculated cofactors in causation such as stress, diabetes, hepatitis C, trauma and hypersensitivity to drugs and metals have varying degree of support.[5]

Oral lichen planus (OLP) can be defined as a common chronic immunologic inflammatory mucocutaneous disorder that varies in appearance from keratotic (reticular or plaque like) to erythematous and ulcerative lesions.[5]

Although the disease was described over 100 years ago, the etiology of lichen planus still remains a mystery involving a possible interaction between genetic, environmental and life style factors.[6] It is still unclear whether OLP represents a single disease or manifestation of

several closely related conditions.[9] The importance of this disease related to its degree of frequency of occurrence and its occasional painful nature.[10] The possible malignant transformation risk still remains controversial.[9]

The disease poses challenge for both the dentist as well as patient. As it is a chronic disease, complete remission are either non existent or infrequent especially in patients with erosive disease. Unpredictable and frequent exacerbations are common and in rare instances continuous pain can be disabling.[11]

Currently, there is no cure for OLP. A large number of agents studied for this disease reflect the inadequacy of any one agent to control the symptoms in all patients. A more thorough understanding of etiology, pathogenesis, clinical presentation and possible malignant transformation may lead to treatment protocol that are accepted uniformly and effective universally in each form of OLP.[11]

Review of Treatment modalities of OLP

To date, no cure for OLP or its dermal counterpart exists.[13, 14] The aim of current OLP therapy are to eliminate mucosal erythema and ulceration, alleviate symptoms and reduce risk of oral cancer.[15, 16]

A large number of agents used in management of the disease reflects the inadequacy of any agent to control symptoms in all patients and indicative of continuing search for solution.[3,12]

General Considerations

Oral Hygiene Maintenance

Due to difficulty in maintaining oral hygiene, accumulation of dental plaque and calculus takes place and may influence the course of LP. Kovesi G, Banoczy J (1973)[13] and Holmstrup P, Schiotz AW, Westergarrd J (1990)[17] found significant improvement in symptoms of OLP after adequate plaque control.

Other Factors

Mechanical trauma of dental procedure, friction from sharp cusps, rough dental restoration and poorly fitting dental prosthesis can be exacerbating factors of OLP and should receive attention.[18]

Various treatment modalities have been designed to improve management of symptomatic oral LP and they are ;

1) Corticosteroids

They are the main stay of treatment of OLP because of their activity in dampering cell mediated immune activity and can be administered topically, intralesionally or systemically.[16]

a) Topical Corticosteroids

They are the most commonly used agents for the treatment of lichen planus and may be applied as ointments, pastes, lozenges, mouth washes or through inhalers with special adaptors.[19]

Different agents like Hydrocortisone hemisuccinates, Betamethasone valerate, Triamcinolone acetonide, Fluocinolone acetonide, Fluocinonide and Clobetasol propionate have been used.[11,16,20,21,22,23]

In recent years fluorinated and so called "super potent" corticosteroids (Fluocinolone acetonide, Fluocinonide) due to their high anti-inflammatory property have become popular for oral vesiculo erosive diseases including OLP.[11]

Thongprasom K, Luangjarmekorn L, Sererat T, Taweesap W (1992)[23] conducted a study to find out relative efficacy of fluocinolone acetonide compared with triamcinolone acetonide in treatment of OLP. Fluocinolone was found to be effective in a majority of cases without serious side effects and was better than triamcinolone.

b) Intralesional corticosteroid

Intralesional injection of steroids have been found effective and can reduce the symptoms in OLP patients.[76] Eisen D[11] reported that Sleeper (1967) supplemented therapy with intralesional triamcinolone acetonide suspension. 7 patients received 5-7 mg of intralesional acetonide. All patients experienced relief of symptoms within 2 weeks, 3 showed complete healing of lesion and 4 showed dramatic clinical improvement.

Zagarelli DJ (1983)[81] used both topical and weekly intralesional corticosteroid in 7 patients suffering from OLP. After 3 weeks 5 patients were graded as having 100% clinical improvement. A remission of several months was noted in most cases and recurrence was milder than original disease.

c) Systemic Corticosteroid

Systemic corticosteroids are of great value when there has been an acute exacerbation of symptoms and are often used in combination with topical corticosteroids.[18] Both methyl prednisolone and prednisone have been employed and used in high doses of 1.5 – 2 mg/kg/day.[18]

Vincent SD, Fotos PG, Baker KA, Williams TP (1990)[20] stated in their article that if systemic prednisolone is deemed necessary it is advisable to gain disease control by administering relatively high doses for upto 7 days. Prednisolone doses of 40 mg given upon arising as a single dose for 5-7 consecutive days seldom result in appreciable pituitary-adrenal suppression. No tapering is necessary at the end of "prednisolone burst" and alternate day morning therapy was initiated if systemic therapy was considered a necessity.

Carbone M, Goss E, Carrozzo M, Castellano L, Conrotto L, Broccoletti A et al (2003)[25] in their comparative study on systemic and topical corticosteroid treatment of OLP with long term follow up found that there was no significant difference in improvement of both signs and symptoms and in disease free period between 2 groups. They suggested that topical high potency corticosteroid should be mainstay treatment for most OLP patients and systemic corticosteroid should be used when topical approaches have failed.

2) Antifungals

Candida Albicans is present in about 37% of OLP lesions and symptoms of OLP may be exacerbated by candidal overgrowth or infection.[18] Various antifungal agents like Griseofulvin, Nystatin, Ketoconazole and Clotrimazole have been used to reduce the symptoms

Aufdemorte, DeVillez and Gieseker (1983)[26] in their case report reported 3 cases of severe erosive LP that were treated with 500 mg BD griseofulvin and showed remarkable

response, however the response interval varied with patients.

However Bagan *et al* (1985)[27] and Naylor GD (1990)[85] found that griseofulvin had little or no effect on pain, pigmentation changes, disappearance of lesion and did not protect patient from future recurrence.

Vincent *et al* (1990)[20] reported that out of 25 cases of OLP suffering from secondary candidiasis, 19 were treated with ketoconazole 200 mg for 14 days, 2 with nystatin ointment and 4 were treated with clotrimazole oral troches. 21 patients reported resolution of their discomfort and showed clinical evidence of remission after 2-6 weeks, 2 had partial remission and 2 continued to have oral symptoms.

3) Cyclosporin

Due to its property of suppressing T cell cytokine production it may be useful in treatment of OLP.[18]

Voute *et al* (1994)[29] conducted an open trial in which cyclosporine A in an adhesive base was used for treatment of recalcitrant OLP. Out of 9 patients included in the study 4 showed partial response but none of patients had complete remission.

Harpenau *et al* (1995)[31] conducted a study on 24 OLP patients to examine the efficacy of low dose cyclosporine 500 mg/day in treatment. All experimental sites exhibited enhanced healing and decreased pain score as compared to control sites over a period of 4 weeks.

Jungell and, Malmstrom (1996)[31] conducted a study on 7 patients with long standing atrophic or erosive LP who were treated for 4 weeks with cyclosporine A as mouth wash (1 mg solution containing 100 mg per ml cyclosporine). At the end of 3 months of treatment no improvement was noticed.

4) Retinoids

The retinoids have anti-inflammatory properties, perhaps through their interactions with arachidonic acid cascade; they stimulate macrophage activation and antibody dependent cell mediated cytotoxicity. Retinoids may also reduce the CD4 lymphocyte infiltrate and increases the macrophages in OLP thus accelerating the healing process. For this reason synthetic and natural analogues (retinoids) may be useful in treatment of OLP.[89]

Camisa and Allen (1986)[33] conducted a study to evaluate the effectiveness of isotretinoin 10-60 mg/day in treatment of symptomatic oral erosive LP for 8 weeks in 6 patients. Improvement was seen in 5 (83%) patients at completion of therapy but no patient was completely cured and within 2 months on stopping isotretinoin 4 patients had relapses.

Baudet-Pommel *et al* (1991)[34] conducted a study on 25 patients to compare different proportions of inflammatory cell subpopulation before and after treatment with 2 types of aromatic retinoids, topical tretinoin and systemic etretinate as compared to untreated controls. The results suggested that progression under two retinoids was similar to spontaneous evolution. However retinoid treatment resulted in accelerated healing with faster renewal of cellular population and greater deterrence of the lesion.

Gorsky M, Raviv and (1992)[35] conducted a study on 6 patients to evaluate the maximum

permitted dose of etretinate (75 mg/day) as first mode of systemic treatment in patients with symptomatic OLP. But follow up of more than year showed that the patients had reverted to same frequency of recurrence as before the systemic use of etretinate.

5) Tacrolimus

Tacrolimus is a potent immuno-suppressive agent and can control symptoms and significantly improve refractory erosive LP.[18]

Olivier (2002)[36] and Kaliakatsou (2002)[37] conducted studies on OLP patients to investigate the efficacy and safety of 0.1% topical tacrolimus in erosive and ulcerative OLP and suggested that tacrolimus have rapid and significant effect in patients with erosive OLP that are refractory to other therapies.

6) Ultraviolet Irradiation

Ultraviolet irradiation, mainly in combination with psoralens, may suppress the cell mediated immune reactivity and thus forms the basis for use in lichen planus.[32]

Lundquist *et. al.* (1995)[38] in their controlled study investigated the treatment of severe oral lichen planus in 81 patients with 8 methoxypsoralen and long wave ultraviolet light. The result showed that 13 treated sites compared with 6 control sites responded significantly favorably to PUVA therapy.

7) MISCELLANEOUS TREATMENT

A) Antibiotics

Ronbeck *et. al.* (1990)[39] reported in their study that doxycycline monohydrate 100 mg/day for 6-8 weeks was used for the treatment of 14 patients suffering from desquamative gingivitis, out of which 6 were suffering from OLP. The group as a whole demonstrated a decreasing mucosal index and significant improvement after therapy.

Walchner (1999)[40] reported significant improvement in 1 patient treated with 250 mg capsule of tetracycline suspended in 100 ml of water and gargled for total of 15 minutes 2-3 times/day. After 6 weeks erosive lesion disappeared and reepithelization was seen.

B) Antimalarials

Eisen (1993)[41] treated 10 patients with OLP with hydroxychloroquine sulphate (Plaqunenil) an antimalarial agent. 7 of 10 patients improved by 50% or more. It was interpreted that hydroxychloroquine may be useful in treatment of OLP.

C) Azathioprine

Lozada (1981)[42] conducted a study to assess clinically the synergistic effect of azathioprine with prednisolone. Results of the study showed effective doses of prednisolone when combined with azathioprine were markedly lower and concluded azathioprine may be a successful steroid sparing adjunct.

D) Dapsone

Lodi *et. al.*(2005)[18] quoted in their study that dapsone has been used in treatment of erosive OLP with some benefits, but generally the use of dapsone is precluded.

E) Topical anesthetic

Dusek and Frick (1982)[6] in their article reported 40 ml of 0.01% synalar solution with 60

ml Benadryl elixir was found to be effective in relieving symptoms of the painful chronic lichen planus.

F) Interferon

They are being used as therapeutic agents because of their antiviral, antiproliferative and immunomodulatory effects.

Sato *et. al.* (1985)[43] conducted a pilot study on therapeutic effect of human fibroblast interferon on premalignant lesion (OLP and leukoplakia) arising in oral cavity and concluded that human interferon has a therapeutic effect on premalignant lesion.

Hildebrand *et. al.* (1995)[44] in their case report reported successful treatment of 3 patients suffering from generalized LP with recombinant interferon alfa 2b.

f) Levamisole

It has used as an immunomodulator in oral LP.[18]

Lu *et. al.* (1995)[45] found that levamisole 150 mg/day for 3 consecutive days in a week together with longer course of low dose systemic prednisolone 15 mg/day left patient symptom free for 6-9 months.

g) Mesalazine

Sardella *et. al.* (1998)[46] in his study found out that when topical mesalazine was compared with clobetasol propionate for treatment of symptomatic OLP, it was as effective as topical steroid.

h) Phenytoin

Bogaert and Sanchez (1990)[47] conducted a study on 30 OLP patients to evaluate systemic phenytoin as therapeutic modality on the basis of its ability to promote wound healing, moderate immune function and act as antipruritic agent. Phenytoin was given 100-200 mg daily. 40% had complete resolution of LP and 33% had substantial improvement. The result suggested a therapeutic role of phenytoin in OLP patients.

i) Surgery

Surgical excision has been recommended for isolated plaques or non healing erosions. Conventional surgical excisions, cryosurgery and CO_2 lasers all have been used.[18, 48, 49, 50]

CONCLUSION

Without adequate treatment the oral health declines along with person's quality of life. Diagnosis of OLP begins with careful medical history, examination of oral mucosa as well as skin. OLP can manifest without symptoms, therefore in routine examination oral mucosa should be thoroughly examined. Therapies are designed to prevent the recurrence and to relieve the symptoms of OLP. Current OLP treatment includes corticosteroids, antifungal, retinoid, tracrolimus, immunomodulators etc. However new research is required to find a complete cure of OLP. Efforts are going on but still in very early stage. Oral health professionals can play a vital role in identifying patient's with OLP and should provide appropriate preventive and therapeutic treatment that will help to preserve a person's health, function and quality of life.

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