

Effectiveness of Aloe Vera Mouthwash in Comparison with Triamcinolone Acetonide 0.1% in Patients with Oral Lichen Planus at A Tertiary Care Hospital

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ABSTRACT

Objective: To compare the efficacy of Aloe Vera Mouthwash versus 0.1% Triamcinolone Acetonide in patients presenting with oral lichen planus at a tertiary care hospital.

Introduction: Oral lichen planus is a chronic immune mediated dermatosis with periods of remissions and relapses. There are many treatment options to treat this condition; aloe vera mouth wash is one of the newer and safer options.

Methodology: A total of 100 patients with oral lichen planus (OLP) were randomly divided into two groups (group A and B, each having 50 patients). The patients in group A were given aloe vera mouth wash and in group B were given triamcinolone acetonide paste (0.1%). Efficacy was observed after 2 months of treatment completion.

Results: Overall Efficacy was noted in 58(58%) of all study cases. In group A 37 patients (74%) showed efficacy and in group B 21 patients (42%) showed efficacy. More efficacy was noted in female patients (87%) treated with Aloe Vera Mouth wash than those of treated with triamcinolone acetate paste (45%). Patients belonging to old age group (36-50 year) showed more efficacy (75%) to aloe vera mouth wash than that of triamcinolone acetonide paste (36%).

Conclusion: In our population Aloe vera mouth wash is more efficacious than triamcinolone acetonide (0.1%) in the treatment of oral lichen planus

Keywords: Oral lichen planus, Aloe vera, Triamcinolone acetonide

INTRODUCTION

Lichen planus is an immune mediated chronic illness that involves both skin and mucosae¹. Various disturbances in immune system play a key role in its pathogenesis; however its exact etiology still remains unclear². It may affect various mucosal (e.g. Mouth, pharynx, esophagus, stomach, anus, larynx, genitals, ear, nose, bladder and peritoneum) or cutaneous surfaces (i.e. nails, skin and scalp)^{3,4}. Oral lichen planus (also called as mucosal lichen planus) may involve buccal mucosae, inner aspects of lips, tongue, palate and pharynx and it may co-exist with other clinical variants of lichen planus⁵. Various clinical forms of oral lichen planus include Reticular, Erosive, Papular, Plaque like, Atrophic and Bullous⁶. Many times these different clinical forms may coexist in the same patient. Clinically oral lichen planus may present as white lesions (wickham's striae) bilaterally on inner cheeks. Patients usually complain of pain and/or discomfort, burning sensation and soreness in the mouth⁷. Oral lichen planus has been reported to occur in association with many systemic comorbidities such as metabolic syndrome, hypertension, diabetes mellitus, thyroid diseases, psychosomatic diseases, chronic liver disease, gastrointestinal illness, and genetic susceptibility to cancer⁸.

Common therapeutic remedies for oral lichen planus include systemic corticosteroids, immune-suppressives, retinoids, oral antibiotics phototherapy, topical steroids and topical tacrolimus⁹.

Corticosteroid treatment (systemic and topical) is regarded as one of the first-line therapy for oral lichen planus¹⁰. However its use is associated with various side effects such as tingling sensations, local irritation, taste alteration, nausea, iatrogenic Cushing and hypothalamic pituitary axis deviation¹¹.

Aloe Vera plant contains various active ingredients like polysaccharides, anthraquinone, lectin, superoxide dismutase (an antioxidant enzyme), glycoprotein, amino acids, vitamin C, vitamin E and minerals¹². Because of its antioxidant and anticancer properties, it can be used in various diseases. Aloe Vera does not have immunosuppressive and other adverse effects as that of other treatment modalities available for oral lichen planus. As oxidative stress is thought to be a newly explored etiology of oral lichen planus, anti-oxidative effects of Aloe Vera mouth wash open

a new window of opportunity in treatment of these patients¹³.

In our population triamcinolone acetonide (0.1%) paste is most commonly used therapy for the treatment of oral lichen planus¹⁰. Triamcinolone acetonide (TAC) is a moderately potent corticosteroid and it has dampening effect on cell-mediated immunity, thereby modulating the immune function. This therapy has various side effects and limitations¹⁴. So we compared the efficacy of aloe vera mouth wash vs triamcinolone acetonide paste (0.1%) in the treatment of oral lichen planus. Aim of this study was to find a more efficacious treatment modality in terms of patient visits, cost and side effects.

MATERIAL AND METHODS

Inclusion criteria: Age: 18-50 year

Gender: Both male and female

Site: Oral lichen planus (accessed clinically)

Duration of disease: Any

Exclusion criteria: Patient with previous history of any systemic disease including heart disease, renal disease, and pre-existing cases of hypertension, Diabetes mellitus and neurological disorders.

Patient using any treatment for oral lichen planus or any immunosuppressive drug during the 4 weeks preceding the study.

Patients with lichenoid lesions (due to contact with amalgam restorations, with previous history of allergy to other dental materials and having dysplastic lesions).

The approval of this randomized comparative study was taken from ethical review committee. A total of 100 patients with oral lichen planus assessed clinically visiting outpatient department (OPD) of Dermatology, Sheikh Zayed Hospital Rahim Yar Khan were included in this study. These 100 symptomatic patients were randomly divided in 2 groups by draws method (group A and group B). The patients in group A were asked to rinse the mouth with 2 tablespoons of Aloe Vera mouthwash for 2 minutes, 4 times a day and expectorate. The patients in the group B were instructed to apply a thin layer of triamcinolone acetonide 0.1% paste on the oral lesions, 4 times daily and patients were advised not to eat, drink or smoke for 20 minutes after each application. The study

and follow up period for both groups was 3 months (one month for treatment and 2 months for follow up). The patients in both groups were asked to take treatment for one month and to report immediately if there was any side effect during or after the study (in follow up period i.e. 2 months). Patients were evaluated on day 8, 16 and after completing the course of treatment (visit 1–3). Efficacy was observed after 2 months of treatment completion. Patients were assessed for any possible side effects at each appointment. All of the patients were truly monitored and checked for their compliance to drugs.

The data was entered and analyzed using computer program SPSS-22. Frequencies and percentages were calculated for the qualitative variables. Effect modifiers like age, gender, site of Oral Lichen Planus and type of Oral Lichen Planus were controlled by stratification. Post stratification chi-square test was applied to see the effect of these on outcome (50% reduction in size of lesion with complete resolution of pain). P value equal or less than 0.05 was considered as significant.

RESULTS

Total 100 cases were enrolled in this study which was divided in group A and B, each having 50 patients. Out of total 100 cases, 37 were male and 63 were female. There were 18 male (36%) and 32 female (62%) in group A; and 19 male (38%) and 31 female (62%) in group B. Total 100 cases were divided into two age groups i.e. younger group (age 18-35 year) having 23 cases and older group (age 36-50 year) having 77% patients.

Table 1: Distribution of study cases by efficacy (n=100)

Efficacy (n=100)	Group A		Group B	
	Frequency	Percentage	Frequency	Percentage
Yes n=58 (58%)	37	74	21	42
No n=42 (42%)	13	26	29	58
Total	50	100	50	100

P=0.0012

Table No. 2: Stratification of efficacy with regards to gender in both groups (n=100)

Gender	Groups	Efficacy		P - value
		Yes (n=54)	No (n=46)	
Male (n=37)	Group A (n=18)	07	11	0.412
	Group B (n=19)	05	14	
Female (n=63)	Group A (n=32)	28	04	0.0003
	Group B (n=31)	14	17	

Table No. 3: Stratification of efficacy with regards to age in both groups (n=100)

Age groups	Groups	Efficacy		P - value
		Yes (n=49)	No (n=37)	
18 – 35 Years (n=23)	Group A (n=10)	04	06	0.096
	Group B (n=12)	09	03	
36 – 50 years (n=77)	Group A (n=40)	30	10	0.0006
	Group B (n=38)	14	24	

Efficacy was noted in 58 (58%) of all study cases. In group A 37 patients (74%) showed efficacy and in group B 21 patients (42%) showed efficacy. (Table 1)

7 male (38%) and 28 female (87%) patients from group A showed efficacy to treatment. 5 male (26%) and 14 female (45%) patients from group B showed efficacy to treatment. Female patients in group A showed superior efficacy (87%) as compared to female patients in Group B (45.16%). So more efficacy was noted in female patients treated with Aloe Vera Mouth wash than those of treated with triamcinolone acetate paste (Table no 2)

4 out of 10 patients (40%) from younger age group(18-35 year)in group A and 9 out of 12 in group B showed efficacy to treatment.30 out of 40 patients (75%) from older group (36-50) in group A and 14 out of 38 patients (36%) from group B showed efficacy to treatment. So, older patients(36-50 year) showed more efficacy to aloe vera mouth wash than that of triamcinolone acetate paste and younger patients showed more efficacy totriamcinolone acetate paste than that of aloe vera mouth wash (Table no 3).

DISCUSSION

Lichen planus is a mucocutaneous disease characterized by nonspecific inflammation¹. It leads to the severe destruction of the epithelial basal layer². Oral lichen planus usually presents bilaterally on mucosae of inner cheeks and has various clinical patterns; with reticular, erythematous (erosive), plaque and ulcerative being the most common^{5,6}. These patterns may coexist in the same region or may alternate in time⁶. The most commonly affected sites are the buccal mucosa, the tongue and the gingiva^{4,5}. Involvement of the palate and lips is rare, and even rarer is the involvement of the oral floor⁵. Burning symptoms, itching and pain are particularly seen in the ulcerative and erythematous variants⁷. The diagnosis is based on clinical and histopathological examination. In classical lesions, only clinical diagnosis is possible⁷. In the absence of typical manifestations of the reticular pattern, other patterns may be difficult to diagnose. In these cases, a biopsy is indicated.

It is clear that oral lichen planus is an incurable disease⁹. However, the disease has periods of exacerbation and remission⁹. During exacerbation, both the erythematous/ulcerated areas and the pain increase. These periods may be related to stress, anxiety or mechanical trauma^{9,10}. Several protocols for monitoring the disease have been described. They are usually based on the clinical aspect, the number of areas involved and the severity of symptoms. Several studies report the malignant potential of oral lichen planus⁸. However, this topic is still quite controversial. The frequency of malignant transformation varies between 0 and 3.5%, and erythematous and erosive lesions show the highest index^{16,17}.

Common therapeutic options for oral lichen planus include systemic corticosteroids, immune-suppressives, retinoids, oral antibiotics, phototherapy, topical steroids and topical tacrolimus⁹. In our population triamcinolone acetonide 0.1% paste is most commonly used therapy for the treatment of oral lichen planus¹⁰. Triamcinolone acetonide (TAC) is a moderately potent corticosteroid and it has dampening effect on cell-mediated immunity, thereby modulating the immune function¹⁰. This therapy has various side effects and limitations¹¹.

Aloe Vera plant contains various active ingredients which have antioxidant and anticancer properties; so, it can be used in various diseases¹². Aloe Vera does not have immunosuppressive and other adverse effects as that of other treatment modalities available for oral lichen planus¹³. Because of its anti-oxidative properties aloe vera mouth wash can be used in the treatment of oral lichen planus^{12,13}.

According to Li C et al estimated overall pooled prevalence of oral lichen planus was 0.89% among the general population and 0.98% among clinical patients¹⁵. A higher prevalence of oral lichen planus was found in non-Asian countries, among women, and among people 40 years and older¹⁵. Werneck et al reported 66 % female patients having oral lichen planus¹⁷ and Chainani-Wu et al

reported 67% female gender predominance⁸. Similarly our study results shows that oral lichen planus is more common in female gender (63%) and in old age patients (77%).

Chauhan P et al and Arunkumar S et al noted clinically significant efficacy of triamcinolone acetonide paste in the treatment of oral lichen planus^{21, 22}. Whereas in our study results showed 42% efficacy of triamcinolone acetonide paste in the treatment of oral lichen planus; relatively higher efficacy was seen in younger age group (75%).

Choonhakarn C et al reported 81 % efficacy of aloe vera mouth wash in the treatment of oral lichen planus in his treated cases²³. Cheng S et al found that Aloe vera gel was 6 times more likely to result in at least 50% disease improvement compared to placebo in a study involving 45 mucosal erosive lichen planus participants²⁴. Similarly our study shows efficacy of aloe vera mouth wash in 74% of treated cases; with more efficacy were noted in female gender (87%) and in older patients of age above 36 years (75%).

Mansourian et al compared the efficacy of aloe vera mouth wash vs. triamcinolone acetonide paste in the treatment of oral lichen planus; efficacy was reported in 74 % cases with aloe vera and in 78% with triamcinolone acetonide paste¹⁹. Reddy et al reported superior efficacy of aloe vera mouth wash than triamcinolone acetonide in the treatment of oral lichen planus²⁰. Similarly our study results shows superior efficacy of aloe vera mouth wash (74%) than triamcinolone acetonide paste (42%) in the treatment of oral lichen planus; and aloe vera mouth was relatively more efficacious in older age group and in female gender. As discussed previously that aloe vera mouth wash has relatively fewer side effects and have no immunosuppressive effect as compared to other treatment modalities; so it is a newer, safer and cheaper option for the treatment of oral lichen planus.

CONCLUSION

In our population Aloe vera mouth wash is more efficacious than triamcinolone acetonide (0.1%) in the treatment of oral lichen planus

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