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Original Research

Effects of Intralesional corticosteroids injection in the treatment of oral lichen planus: A clinical and histopathological approach

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ABSTRACT:
Intralesional corticosteroid injection is known to be one of the successful treatments for OLP. This study includes 20 patients suffering from oral lichen planus. Pain and burning sensation was recorded using VAS score (0- 10 scoring for each). Histopathological confirmation and Severity score of lesion of all the cases were recorded. Intralesional triamcinolone acetonide injection (tricad-40) 40 mg/mL aqueous suspension along with local anesthetic agent was administered directly into the subepithelial tissue. A marked improvement in signs and symptoms associated with oral lichen planus is seen with remarkable change in histopathological features. The therapeutic effects triamcinolone injection has fewer side effects than systemic Corticosteroids.
Key words: Triamcinolone Acetonide, intralesional injection, visual Analogue scale.

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INTRODUCTION:
Oral lichen planus (OLP) is one of the most common chronic inflammatory mucocutaneous diseases that involve skin and oral mucous membrane. The most common clinical features of patients having oral lichen planus is burning sensation, pain and discomfort in oral cavity. Burning sensation on eating lead to inability to intake proper food.[1] The exact etiology of OLP is unknown but etiopathogenes is closely related to cell-mediated immunity in which cytokines, tumor necrosis factor-α, interleukin-8, and interferon-γ play a major role which cause increased activity of lymphocytes and apoptosis of keratinocytes.[2,3]Treatment of oral lichen planus with systemic as well as local corticosteroid therapies showed positive response.[4] Although other treatment modalities like retinoic acid, cyclosporine, and photochemotherapy are also used now a days but corticosteroids therapy is still most widely used treatment. Out of both types routes of administration (systemic and local)of corticosteroids, topical corticosteroids always considered as first-choice agent.[5] Intralesional corticosteroid injection leads to high concentration of drugs at lesion sites with minimal systemic absorption and side effects. Triamcinolone acetonide (TA) is a synthetic corticosteroid and has been known to be a successful Treatment for OLP as per several studies.[6-9]

AIM: - The aim of this study is to record the efficacy of intralesional corticosteroid injection in patients with oral lichen planus (OLP).

MATERIALS AND METHODS:
Inclusion Criteria:-

- Patients who had been diagnosed with OLP by means of clinical and histopathologic examination.

- Unilateral / bilateral presence and any type of oral lichen planus.

Exclusion Criteria:-

- Topical or systemic corticosteroid usage for treating OLP in the past 3months.
- Lichenoid reactions
- Patients with history of immunosuppression.
- Pregnancy and lactating patients.
- Patients who are unwilling to participate in the study

Study design:

- This study includes 20 patients (13 females and 7 males) suffering from oral lichen planus.
- A complete history of patient's symptoms had been taken. History of pain and burning sensation was recorded using VAS score (0- 10 scoring for each).
- Examination of the lesion had been done and the type of OLP had been recorded.
- Biopsy of the lesion has been taken and sent for histopathological confirmation of all the cases. Histopathological features of all the cases have been recorded.
- Intralesional triamcinolone acetonide injection (tricad-40) 40 mg/mL aqueous suspension along with local anesthetic agent administered directly into the subepithelial tissue just underlying the lesion adjacent to the normal mucosa. (0.5 cc each site)and repeated once a week for 4–6 weeks.(Fig 1:a,b,c)
- Severity score of lesion recorded according to Malhotra et al (2008)[10]. Five intraoral sites are taken i.e. buccal mucosa, tongue, lips, gingival and palate. Area involves <50% scored as 1 and >50% scored as 2.this is applicable for buccal mucosa (right and left side) and tongue. For gingiva, lips and palate, 0 for uninvolved and 1 for involved was used. Total score was obtained by summation of all the sub scores and based on this a grade was assigned. Grade 0(0 score), grade I (1-3 score), grade II (4-6 score) and grade III (7-12 score).
- The subjective as well as objective data after every week was recorded properly.
- Post treatment biopsy after 6 weeks was taken from the previous lesion site and sent for histological examination. All the collected data then sent for statistically analysis.

RESULTS:-

The results of our study showed that the reticular type of lichen planus is the most common in both males and females followed by erosive type. Table 1 showed the distribution of type of OLP in both gender.

TABLE 1: DISTRIBUTION OF TYPE OF ORAL LICHEN PLANUS IN BOTH THE GENDER

MALES					
N	Reticular	Erosive	Atrophic	Bullous	plaques
7	5(72%)	2(28%)	0	0	0
FEMALES					
N	Reticular	Erosive	Atrophic	Bullous	plaques
13	9(70%)	3(23%)	1 (7%)	0	0

VAS scoring system was used to measure pain/discomfort and burning sensation at every week of treatment (from 0 week to 6th week) as shown in table 2. The mean VAS score for pain/discomfort decreases from 8.3 to 0.6(<1) and mean VAS score for burning sensation of oral cavity decreases from 8.8 to 0.4(<1). Our study showed marked improvement in symptoms after every treatment sitting. The recorded severity score of lesion according to Malhotra et al (2008) was grade III (means severe) at 0week which gradually decreases with the course of treatment to grade 0 at 6th week.

Histological features of OLP had been recorded before the treatment and after the completion of treatment at 6th week by taking biopsy. Subepithelial lymphoid infiltrate, acanthosis, hyperortho/Para keratosis, hydropic degeneration, erosion, atrophy and Civatte bodies are the features which were keenly analysed and evaluated for their presence/absence before and after treatment.

TABLE 2:- MEAN VAS SCORES FOR PAIN AND BURNING SENSATION AT WEEKLY INTERVAL

WEEK	PAIN/DISCOMFORT	BURNING SENSATION	LESION SEVERITY SCORE
0 WEEK	8.3	8.8	GRADE III
1 WEEK	6.4	7.1	GRADE III
2 WEEK	5.5	6.0	GRADE II
3 WEEK	4.4	3.5	GRADE II
4 WEEK	2.7	2.4	GRADE II
5 WEEK	1.7	1.6	GRADE I
6 WEEK	0.6(<1)	0.4(<1)	GRADE 0

TABLE 3:- HISTOPATHOLOGICAL FEATURES OF ALL THE CASES BEFORE AND AFTER TREATMENT

S.No.	Histopathological features	Before intralesional injection		After intralesional injection
		No. of cases	Degree	Change
1.	Subepithelial lymphoid infiltrate	20/20	Abundant (juxtaepithelial)	Fewer (juxtaepithelial)
2.	Hydropic degeneration	12/20	Focal	Less remarkable
3.	Erosion	05/20	Multi-Focal	Absent
4.	Atrophy	01/20	Remarkable	Less remarkable
5.	Acanthosis	11/20	Remarkable	Less remarkable
6.	Hyperorthokeratosis	09/20	Thicker	Thinner
7.	Hyperparakeratosis	11/20	Abundant	Less remarkable
8.	Aggregate of Civatte bodies	06/20	Remarkable (At the basement membrane)	Less remarkable

FIGURE 1

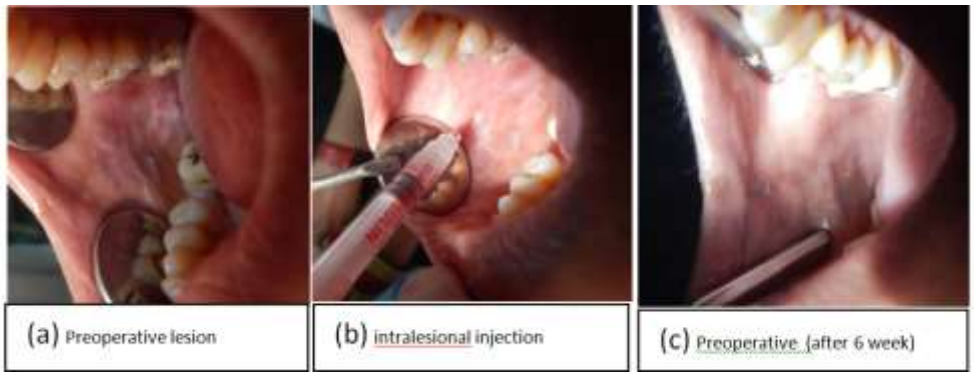
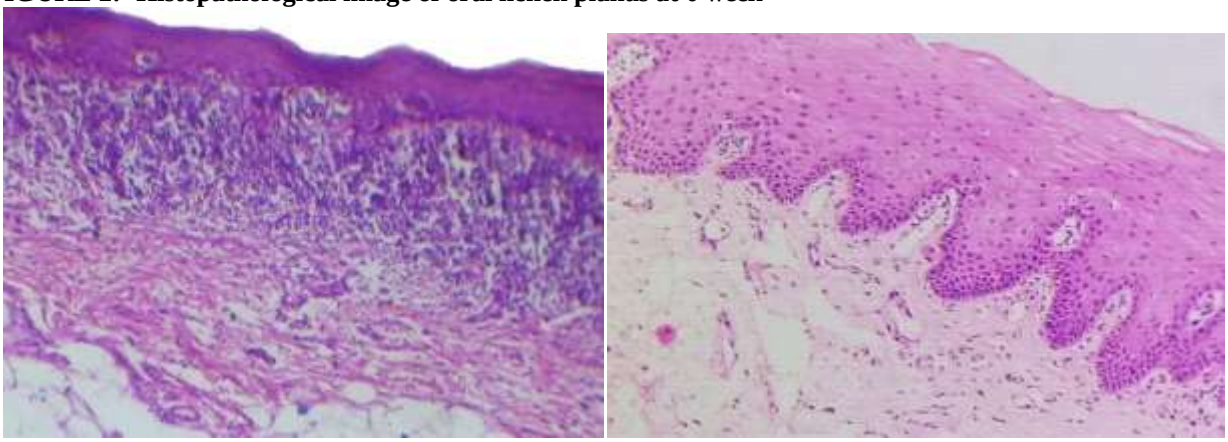


FIGURE 2:- Histopathological image of oral lichen planus at 0 week



DISCUSSION:

The pathogenesis of OLP is immunological in which the cell-mediated immunity and cytokines such as tumor necrosis factor-α, interleukin-8, and interferon-γ cause apoptosis of basal keratinocytes and histopathologically there is jutraepithelial band like deposition of lymphocytes. Hence fore OLP has a good response to corticosteroids (systemic and local cortico-steroid) therapies.[4]

Our study showed a marked improvement in signs and symptoms associated with oral lichen planus. In this study, the mean VAS score for pain/discomfort decreases from 8.3 to 0.6 and mean VAS score for burning sensation of oral cavity decreases from 8.8 to 0.4, which described that intralesional Triamcinolone decreases in symptoms of patients with the treatment coarse. The severity score of lesion decreases from severe to unremarkable and asymptomatic.

Treatment for OLP using TA revealed successful results in several studies Xiong C (2009)[9], Xia *et al(* 2006)[8] and Lee *et al (*2013),which[7] showed significantly improve in pain and burning mouth and reduction in size. Young Chan Lee et al (2018)[11] showed symptoms improved in 80.6% of total patients after treatment with TA (40 mg/mL), although patients with lip lesion of OLP might not be effective in treating with intralesional corticosteroid injection. Although the local corticosteroids are the mainline treatment of OLP as it is believed to be of autoimmune origin, but there are number of other systemic diseases such as hepatic and connective tissue diseases. Hepatitis C is most commonly taken into consideration for co-existing with OLP especially resistant/recurrent cases. Therefore it is now recommended to advice routine screening laboratory investigation to patients with OLP for hepatitis C and other liver abnormalities.[12-14]

CONCLUSION:

Corticosteroid therapy is the mainstay treatment of OLP. The effectiveness of triamcinolone acetonide aqueous suspension for many oral mucosal lesions is satisfactory. Intra- and sublesional injections of triamcinolone acetonide in oral lichen planus lesions results in improvements of patient suffering with very less systemic side effects.

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