

ORIGINAL ARTICLE

Comparative Evaluation of Treatment of Oral Submucous Fibrosis with Intralesional Injections of Dexamethasone and Hyaluronidase with Triamcinolone Acetonide and Hyaluronidase

Patel TL¹ and Surjeet Singh²

1- Associate Professor, Department of ENT, Late BRK Memorial Govt Medical College, Jagdalpur, CG State

2- Assistant Professor, Department of ENT, Late BRK Memorial Govt Medical College, Jagdalpur, CG State

Abstract

Background: Oral submucous fibrosis is premalignant condition affecting oral cavity and pharynx. There is no specific treatment is available till date for oral submucous fibrosis. This study was planned to compare treatment of oral submucous fibrosis with intralesional injections of dexamethasone and hyaluronidase with triamcinolone acetonide and hyaluronidase.

Materials & Methods: The study was carried out on 84 oral submucous fibrosis patients, divided into 2 equal groups of 42 patients each. Group I was given intralesional treatment of dexamethasone and hyaluronidase, while group II was given intralesional treatment of triamcinolone acetonide and hyaluronidase. The efficacy of these treatment regimens were checked by comparing improvement in mouth opening with the help of Vernier caliper and relief of burning mouth sensation was assessed with the help of visual analog scale (VAS), having score ranging from 1 to 10. Scores were recorded, tabulated and compared using statistical analysis done with the help of IBM SPSS statistics version 20 using student's t test. **Results:** Results showed that the improvement in mouth opening and also improvement in the burning sensation was better with the intralesional injections of triamcinolone acetonide and hyaluronidase as compared to that of dexamethasone and hyaluronidase. (Student's t test, $p < 0.001$). **Conclusion:** The results of intralesional injections of triamcinolone acetonide and hyaluronidase were superior as compared with the group receiving dexamethasone and hyaluronidase, which indicates that they should be preferred for treatment of OSMF in this group of population.

Keywords: Hyaluronidase, Intralesional injection, Oral submucous fibrosis, Triamcinolone acetonide

Address for correspondence: Dr. T. L. Patel. Associate Professor, Dept of ENT. Late BRK Memorial Government Medical College, Jagdalpur, CG State. **Email:** drtlpatel@yahoo.co.uk

DOI: [10.18049/jcmad/337](https://doi.org/10.18049/jcmad/337) Revised : 10/12/2015

Received on : 08/12/2015 Accepted : 12/12/2015

Introduction

Oral submucous is a chronic disease of the oral cavity found predominantly in Asian subcontinent. It is a premalignant condition of the oral cavity characterized by progressive build-up of collagen in the cheeks and other parts of the oral cavity and pharynx, which causes problems with speech and swallowing and in later stages restricted mouth opening and decreased tongue movements.^{1,2} Microscopically, it causes fibroelastic change, inflammation of the oral mucosa, accumulation of the collagen fibers in the juxtaepithelial

region of the oral mucosa and along with concomitant muscle degeneration.^{3,4}

The greatest risk is that it is a precancerous condition, and there is a positive correlation between it and the development of leukoplakia and carcinoma of the oral cavity.⁵ The treatment of the oral submucous fibrosis includes the cessation of the habit of betel quid and areca nut chewing, control of other local irritants, spicy and hot foods. The main concern in oral submucous fibrosis is the management of the burning sensation of the oral mucosa and trismus. A large number of treatment modalities have been tried by non-surgical and surgical

approach. The most effective medical treatment had been the use of intralesional steroids in its various forms.⁶ The present study was carried out to compare intralesional use of drug in 2 regimens i. e. dexamethasone and hyaluronidase with triamcinolone acetonide and hyaluronidase in combination; given to two different groups.

Materials and Methods

This comparative study was carried out on 84 patients clinically diagnosed as oral submucous fibrosis. The patients were from the age group between 20 to 45 years.

Inclusion Criteria

1. Patients with positive history of chewing of areca nut or one of its commercial preparations.
2. Patients with clinical diagnosed of having oral submucous fibrosis.

Exclusion Criteria

1. Patients undergoing any surgery or any drug therapy.
2. Patients with reduced mouth opening due to any other reasons like TMJ problems, Pericoronitis of lower third molars etc.
3. Coexisting lesions
4. Patients previously treated for the OSMF.
5. Allergic conditions.

The study was carried out over a period of 2 years and treatment plan was followed for a period of 3 months for each patient. The patients were divided into 2 groups of 42 each. Patients in Group I receive, intralesional injection of dexamethasone (5mg/ml) and hyaluronidase (1500 IU) was given in the buccal mucosa bilaterally every 15 days interval upto 3 months. For patients in group II, intralesional injection of triamcinolone acetonide (10mg/ml) and hyaluronidase (1500 IU) was given.

First, fibrous bands were palpated at the various sites of the oral mucosa and 26 gauge needles were used to inject the particular drug submucosally at particular sites bilaterally. Measurement of the mouth opening was done with the help of Vernier caliper and burning mouth sensation was assessed with the help of visual analog scale (VAS), having score ranging from 1 to 10.

The participants were well explained about the study and informed consent was obtained from

all participants. Ethical clearance was obtained from the ethical committee of the institution before start of the study. Statistical analysis was performed with the help of student's t test, using IBM SPSS statistics 20. Descriptive statistics were calculated; mean scores and standard deviation were obtained.

Results

The improvement in the mouth opening was better in patients treated with triamcinolone acetonide and hyaluronidase as compared to patients treated with dexamethasone and hyaluronidase; and the difference was highly significant statistically (Student's t test, $p < 0.001$) table- 1. Also, the symptoms of burning sensation (VAS score) was decreased more in case of OSMF patients treated with triamcinolone acetonide and hyaluronidase as compared to patients treated with dexamethasone and hyaluronidase, and the difference was also found statistically highly significant (Student's t test, $p < 0.001$) table- 2.

Table- 1: Improvement in mouth opening

Group	Mean±SD	t value	p value
Group I	9.81±1.61	6.42	P<0.001*
Group II	12.19±1.78		

*p value is statistically significant

Table- 2: Decrease in burning sensation

Group	Mean±SD	t value	p value
Group I	3.71±0.77	3.91	P<0.001*
Group II	4.57±1.19		

*p value is statistically significant

Discussion

Though the etiology of oral submucous fibrosis is well known but the treatment is still not totally curative. Recently intralesional injections were came into focus for the treatment of oral submucous fibrosis.

The mechanism of action of steroids is by opposing the action of soluble factors generated by sensitized lymphocytes after activation by specific antigens. Steroids also act as an immunosuppressive agent and suppress inflammatory reactions. Thus prevents fibrosis by decreasing fibroblastic proliferation and collagen deposition. The initial relief of symptoms may be due to anti-inflammatory action of steroids, which clears the

juxtaepithelial inflammation.^{4,7} We found that patients in both the groups showed improvement in mouth opening, but group II, i.e. patients treated with triamcinolone acetonide and hyaluronidase showed better results as compared to group I, i. e. patients treated with dexamethasone and hyaluronidase.

Results of our study were in accordance to the study done by Sikdar SD⁶ which also showed combination of triamcinolone acetonide and hyaluronidase better in the treatment of OSMF. Triamcinolone acetonide has better local potency, longer duration of action and lesser systemic side effects.⁷ Hyaluronidase has specific action on hyaluronic acid, which plays an important role in the formation of the collagen. It causes breakage and dissolution of the fibrous bands providing relief from the restricted mouth opening.^{4,6}

Conclusion

As various treatment modalities are now been tried with varying success for the treatment of oral submucous fibrosis, intralesional injections were showing promising results. The intralesional injections of triamcinolone acetonide and hyaluronidase were superior as compared with the group receiving dexamethasone and hyaluronidase, which indicates that they should be preferred for treatment of OSMF in this group of population.

Conflict of Interest: None declared

Source of Support: Nil

Ethical Permission: Obtained

References

1. Krishnan AR, Jayakrishnan. Oral submucous fibrosis: A progressive debilitating oral web disease. *Global Journal of Medical Research: Journal of Dentistry and Otolaryngology* 2014;14(6):1-5.
2. Goswami R, Gangwani A, Bhatnagar S, Singh D. Comparative study of Oral Nutritional Supplements vs Intralesional Triamcinolone and Hyaluronidase in Oral Submucous Fibrosis. *Int J Med Res Rev* 2014;2(2):114-8.
3. Chatterji P, Mehrotra R. Oral Submucous Fibrosis: A Study of Patient Profile. *Int J Sci Stud* 2014;2(8):139-143.
4. Singh M, Niranjan HS, Mehrotra R, Sharma D, Gupta SC. Efficacy of hydrocortisone acetate/hyaluronidase vs triamcinolone acetonide/hyaluronidase in the treatment of oral submucous fibrosis. *Indian J Med Res* 2010;131:665-9.
5. Ghom AG, Gupta M, Deoghare A, Diwan R, Khandelwal A, Gandhi A. Comparison between Efficacy of Hydrocortisone / Hyaluronidase and Triamcinolone / Hyaluronidase in Combination with Lycopene / Pentoxifylline / Placebo Oral Supplementation in Treatment of Trismus in OSMF Patients. *Chhattisgarh Journal of Health Sciences* 2013;1(1):8-11.
6. Sikdar SD, Bagachi SS, Sood M. Efficacy of intralesional triamcinolone acetonide and hyaluronidase compared with that of placental extract in the treatment of OSMF: A comparative clinical study. *International Journal of Women Dentists* 2014;1(1):55-9.
7. Samuel HT, Renukananda GS. Comparative Study between Intralesional Steroid Injection and Oral Lycopene in the Treatment of Oral Submucous Fibrosis. *Int J Sci Stud* 2015;2(10):20-22.