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Original Article

Evaluation of Efficacy of Various Non-Surgical Treatment Modalities in treating patients with Oral Submucous Fibrosis: A Comparative Study

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ABSTRACT:

Background: Oral submucous fibrosis (OSMF) is of the chronic disease of the oral cavity. Numerous lines of treatments have been tried in the past few decades for treating the OSMF patients. Hence, we planned the present study to compare two non-surgical modes of treatment protocols in OSMF patients. **Materials & methods:** The present study included comparative assessment of efficacy of various non-surgical treatment therapies in patients with OSMF. A total of 40 OSMF patients were included in the present study. All the patients were broadly divided into two study groups as follows: Group 1: Patients treated with mixture of Turmeric and Jaggery Application twice a day all over the oral mucosa,Group 2: Patients treated with physiotherapy exercise twice daily. Recalling of the patients was done after one month and inter-incisal distance was again measured. All the results were analyzed by SPSS software. **Results:** We observed better improvement in the mouth opening among patients of group 1 in comparison to the patients of group 2. However; the results were found to be statistically non- significant. **Conclusion:** Application of turmeric with jaggery is slightly more effective for treating OSMF patients.

Key words: Non-surgical, Oral submucous fibrosis, Physiotherapy.

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INTRODUCTION

Oral submucous fibrosis (OSMF) is of the chronic disease of the oral cavity which was firstdescribed three decades ago by Pindborg and Sirsat. The fibroelastic changes are almost entirely due to abnormalaccumulation of collagen in the sub epithelial layers, resulting in dense fibrous bands in the mouth.[1-3]The pathogenesis of the disease is believed to bemultifactorial. A number of factors trigger the diseaseprocess by causing a juxtaepithelial inflammatory reaction in the oral mucosa. Factors include areca nutchewing, ingestion of chillies, genetic and immunologic processes, nutritional deficiencies, and other factors.The chewing of betel quid (BQ) (containing areca nut,tobacco, slaked lime or other species) has been recognizedas one of the most important risk factors for OSMFas supported by the epidemiological evidence aswell as from its histopathological effects on fibroblasts and keratinocytes.[4-6] Numerous lines of treatments have been tried in the past few decades for treating the OSMF patients. Hence, we planned the present study to compare two non-surgical modes of treatment protocols in OSMF patients.

MATERIALS & METHODS

The present study was planned in the department of oral medicine and radiology of the dental institute and included comparative assessment of efficacy of various non-surgical treatment therapies in patients with OSMF. Ethical clearance was taken from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. A total of 40 OSMF patients were included in the present study, only those patients were included which were characterized clinically with reduction in the mouth opening and histologically as appearance of dense subepithelial hyalinisation and epithelial atrophy. Inclusion criteria for the present study included:

- Patients with history of areca nut chewing for more than 4 years,
- Patients clinically diagnosed with OSMF showing reduced mouth opening,
- Patients who reported after 3 weeks for follow up,
- Patients with negative history of any other systemic illness,
- Patients with negative history of any TMJ pathology,

- Patients with negative history of any known drug allergy.

METHODOLOGY

All the patients were broadly divided into two study groups as follows:

Group 1: Patients treated with mixture of Turmeric and Jaggery Application twice a day all over the oral mucosa,

Group 2: Patients treated with physiotherapy exercise twice daily.

Clinical examination was done in all the patients using probes and mouth mirror. Vernier caliper was used to measure theinter-incisal mouth opening at initial visit.Recalling of the patients was done after one month and inter-incisal distance was again measured. All the results were analyzed by SPSS software. Chi- square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

RESULTS

In the present study, we included a total of 40 patients and divided them broadly into two study groups with 20 patients in each group. Group 1 received medicinal treatment alone while patients in group 2 were treated with physiotherapy alone. All the patients were followed up after one month and change in mouth opening was receded and compared. We observed better improvement in the mouth opening among patients of group 1 in comparison to the patients of group 2. However; the results were found to be statistically non- significant.

Group	Mean pre-treatment mouth opening	Mean post-treatment mouth opening	Mean change in mouth opening	p-value
1	2.5 cm	3.2 cm	0.7 cm	0.25
2	2.6 cm	3 cm	0.4 cm	

DISCUSSION

In the present study, we observed that approximately equal effectiveness was seen in patients of both the study groups (**Table 1**). Krishnamoorthy B et al planned a study to assess the effects of colchicine in the management of oral submucous fibrosis. Fifty OSMF patients were divided randomly into two groups and treated for 12 weeks. Group 1-Patients were administered tablet colchicine orally, 0.5 mg twice daily and 0.5 ml intralesional injection Hyaluronidase 1,500 IU into each buccal mucosa once a week. Group 2-Patients were administered 0.5 ml intralesional injection Hyaluronidase 1,500 IU and 0.5 ml intralesional injection Hydrocortisone acetate 25 mg/ml in each buccal mucosa once a week alternatively. Thirty-three percent in group 1 got relief from burning sensation in the second week. Inter group comparisons of increase in mouth opening and reduction in histological parameters indicated that group 1 patients responded better than group 2. These encouraging results should prompt further clinical trials with colchicine alone on a larger sample size to broaden the therapeutic usefulness of the drug in the management of OSMF.[8]James L et al evaluated the efficacy of dexamethasone and hyaluronidase in the treatment of Grade III OSMF. A total of 28 patients diagnosed with OSMF were treated in Sri Rajiv Gandhi College of Dental Sciences for a time period of 9 months, by obtaining the patient's consent and with the approval of the institution's research ethical committee. They were treated by administering an intralesional injection of dexamethasone1.5 ml, hyaluronidase 1500 IU with 0.5 ml lignocaine HCL injected intralesionally biweekly for 4 weeks. Improvement in the patient's mouth opening with a net gain of 6 ± 2 mm (92%), the range being 4-8 mm. Definite reduction in burning sensation, painful ulceration and blanching of oral mucosa and patient followed up for an average of 9 months. Injection of hyaluronidase with dexamethasone is an effective method of managing Grade III OSMF and can possibly eliminate the morbidity associated with surgical management.[9]

Anuradha A et al assessed the efficacy of aloe vera in the treatment of oral submucous fibrosis. Seventy-four patients of oral submucous fibrosis were randomly divided into 2 groups. Group A patients were treated with systemic (juice) and topical aloe vera (gel) for 3 months. Group B patients were treated with intralesional injection of hydrocortisone and hyaluronidase for 6 weeks with antioxidant supplements for 3 months. Patients were assessed for reduction in burning sensation and increase in mouth opening, cheek flexibility, and tongue protrusion at an interval of 1, 2, and 3 months. Both the groups showed statistically significant improvements in all the study parameters at the end of study period ($P < 0.001$). The clinical response to aloe vera was comparable to that of intralesional injections of hydrocortisone and hyaluronidase with antioxidant supplementation. The study concluded that aloe vera can be an alternative, safe, and effective treatment regime in the management of oral submucous fibrosis.[10] Singh N et al compared the efficacy of Aloe vera with antioxidant when given along with physiotherapy in the management of OSMF. Forty patients presenting with clinical signs and symptoms of OSMF were included for the study after informed consent. Group A included 20 patients who received Aloe vera gel (forever living gel) along with physiotherapy. Group B included 20 patients who received antioxidant capsules twice daily for 3 months along with physiotherapy exercises four times in a day. The following parameters, that is, burning sensation, mouth opening, tongue protrusion and cheek flexibility were recorded at each visit. Majority of the participant enrolled were in the age range of 30 to 35 years. Improvement in all the parameters was seen with the individuals receiving Aloe vera gel in comparison to antioxidants. So, Aloe vera being a soothing, simple and safe mode of treatment along with proper habit restriction can be considered to be an effectual protocol in the management of OSMF. The analgesic effects of Aloe vera with the physiotherapy exercises provide better results in reducing burning sensation and improving mouth opening, tongue protrusion and cheek flexibility in comparison to antioxidants.[11]

CONCLUSION

From the above results, the authors conclude that application of turmeric with jaggeryis slightly more effective for treating OSMF patients. However; the detailed individual mechanisms operating at various stages of OSMF need furtherstudy in order to propose appropriate therapeutic interventions.

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