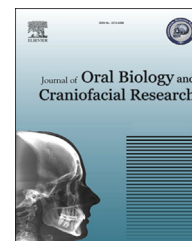




ELSEVIER

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/jobcr

Original Article

Comparative evaluation of natural antioxidants spirulina and aloe vera for the treatment of oral submucous fibrosis



Santosh Patil ^{a,*}, Bader Kureyem Al-Zarea ^a, Sneha Maheshwari ^b,
Rohit Sahu ^c

^a Assistant Professor, College of Dentistry, Al Jouf University, Al Jouf, Sakaka, Saudi Arabia

^b Dental Practitioner, Jodhpur, Rajasthan, India

^c Post Graduate Student, Dept of Oral Medicine and Radiology, Chattisgarh Dental College and Research Institute, Rajnandgaon, Chattisgarh, India

ARTICLE INFO

Article history:

Received 11 July 2014

Accepted 30 December 2014

Available online 22 January 2015

Keywords:

Oral submucous fibrosis

Spirulina

Aloe vera

Antioxidant

ABSTRACT

Aim: Oral submucous fibrosis (OSMF) is a high risk premalignant condition predominantly seen in the Indian subcontinent. The aim of the present study was to compare the efficacy of spirulina and aloe vera in the management of OSMF.

Material and methods: 42 subjects with clinico-pathologically diagnosed OSMF were included in the study and divided equally in 2 groups, Group A (spirulina group) and Group B (aloe vera group). Group A was administered 500 mg spirulina in 2 divided doses for 3 months and Group B was given 5 mg aloe vera gel to be applied topically thrice daily for 3 months. Evaluation for different clinical parameters was done at regular intervals and data was analyzed using the Chi-square test. P-value <0.05 was considered to be statistically significant.

Results: The patients in Group A showed significant clinical improvement in mouth opening and ulcers/erosions/vesicles ($p < 0.05$). However, there was no significant improvement in burning sensation ($p = 0.06$) and pain associated with the lesion ($p = 0.04$) among the 2 groups.

Conclusion: Both the drugs showed improvement in the condition; however spirulina can bring about significant clinical improvements in the symptoms like mouth opening and ulcers/erosion/vesicles. Thus, spirulina appears to be more promising when compared to aloe vera for the treatment of OSMF.

Copyright © 2015, Craniofacial Research Foundation. All rights reserved.

* Corresponding author.

E-mail address: drpsantosh@gmail.com (S. Patil).

<http://dx.doi.org/10.1016/j.jobcr.2014.12.005>

2212-4268/Copyright © 2015, Craniofacial Research Foundation. All rights reserved.

1. Introduction

Oral submucous fibrosis (OSMF) is characterized by progressive inability to open the mouth due to inflammation and progressive fibrosis of the submucosal tissues.¹ Susrutha in ancient medicine described a condition similar to OSMF as “vidari”.² In 1952, Schwartz described a condition of the oral mucosa as “atrophia idiopathica mucosa oris”, with the term OSMF coined by Joshi in 1953.^{3,4} Pindborg and his associates defined the condition as “an insidious chronic disease affecting any part of the oral cavity and sometimes pharynx. Although occasionally preceded by and/or associated with vesicle formation, it is always associated with juxtaepithelial inflammatory reaction followed by fibroelastic changes in the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa causing trismus and difficulty in eating”.⁵ The etiology is believed to be multifactorial and the pathogenesis is not well known. The condition is associated with areca nut and betel quid chewing, being practiced predominately in the Indian subcontinent from a long time.¹

No successful treatment has been advocated till date, however specific treatment includes administration of steroids, placental extracts, IFN gamma, pentoxifylline, lycopene, surgical excision, etc.^{6,7} Many natural plant extracts, synthetic drugs, etc have been introduced and tried for the management of OSMF. One such plant is aloe vera which promotes wound healing, and also has anti-inflammatory, immunomodulatory, and antioxidant properties.⁸ Shetty et al recently have evaluated the role of spirulina in the management of OSMF.⁹ The blue green algae, spirulina is rich in carotenoids and other micronutrients possessing chemo preventive potential. It has been used to test the clinical activity in reversing the oral precancerous lesions like leukoplakia.¹⁰ No study has been done till date to compare the efficacy of these natural antioxidants. Hence, the present study was carried out to compare the efficacy of spirulina and aloe vera in the management of OSMF.

2. Material and methods

The present prospective study included 42 subjects with clinico-pathologically diagnosed OSMF reporting to the Department of Oral Medicine and Radiology. Patients of either sex with OSMF were included in the study. Ethical clearance was obtained from the Institutional Ethical Committee. A written informed consent was obtained from the patients prior to the inclusion in the study. Those with any evidence of severe psychiatric, cardiac, gastrointestinal or metabolic disorders and pregnancy and lactation were excluded from the study. Detailed family and medical history with a history of associated habits was recorded. A thorough clinical examination was conducted and relevant findings were recorded. The subjects were randomly divided equally in 2 groups, Group A (spirulina group) and Group B (aloe vera group). Group A was administered 500 mg spirulina in 2 divided doses for 3 months and Group B was given 5 mg aloe vera gel (Sheetal Lab, Surat) to be applied topically thrice daily for 3 months and were further followed up for a period of 2 months. Patients

were advised not to eat or drink for 15 min after the application of the aloe vera gel. The OSMF was graded on the basis of cheek flexibility as Grade 1 to 5.¹¹ Mouth opening was measured by measuring the distance between the centre of incisal edges of maxillary central incisors and mandibular central incisor at maximum opened mouth. In edentulous patients, the inter ridge (alveolar) distance along the midline was measured.¹² 3 measurements were recorded consecutively and the average value was calculated and recorded. Evaluation for presence, absence or reduction of other clinical parameters such as ulcers/erosions/vesicles, burning sensation and pain associated with the lesion was done at regular intervals of 1 month, 2 month and 3 months. The clinical parameters such as burning sensation, pain associated with the lesion, difficulty in swallowing and speech were evaluated by using a visual analog scale. The score of 0–1 was considered as absent, score in the range of 1–6 was considered as reduced and a score of 7–10 was evaluated as present. The data was entered using computer software SPSS 12.0 (SPSS Inc., Chicago, USA) and analyzed using the Chi-square test. P -value < 0.05 was considered to be statistically significant.

3. Results

There were 24 males and 18 females with a mean age of 31.2 ± 12.4 years. The main causative factors for OSMF included betel nut chewing (60%), tobacco chewing (32%) and spicy foods (39%) (few of the patients had more than 1 habit, hence the total is more than 100%). Clinical improvements in mouth opening and ulcers/erosions/vesicles was significant in the Group A ($p < 0.05$) (Tables 1 and 2). However, there was no significant improvement in pain associated with the lesion ($p = 0.04$) and burning sensation ($p = 0.06$) among the 2 groups (Tables 3 and 4). There were no noticeable side effects of spirulina and aloe vera. There were no dropouts from the study due to any reason during the follow-up. The patients were followed up for a period of 2 months during which 3 patients from Group A and 5 patients from Group B reported ulcers and burning sensation for a period of 7–10 days.

4. Discussion

OSMF is a precancerous condition of the oral cavity and oropharynx seen predominantly in the Indian subcontinent and Southeast Asian countries. The condition is preceded by burning sensation of the oral mucosa, ulceration and pain and characterized by blanching and depigmentation of oral mucosa, reduced movement and depapillation of tongue, and

Table 1 – Effect of spirulina and aloe vera in improving mouth opening (mean values in mm).

	Spirulina	Aloe vera	p-value
Baseline	19.9 ± 2.1	19.1 ± 2.7	<0.05
After 1 month	20.9 ± 2.8	20.4 ± 2.2	
After 2 months	23.4 ± 2.2	22.1 ± 1.5	
After 3 months	25.8 ± 2.5	23.9 ± 1.9	

Download English Version:

<https://daneshyari.com/en/article/3157512>

Download Persian Version:

<https://daneshyari.com/article/3157512>

[Daneshyari.com](https://daneshyari.com)