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The effect of aloe-vera on oral submucous fibrosis patients - a pilot study

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Abstract

Oral submucous fibrosis (OSMF) is having highest malignant potential than any other oral premalignant lesions. OSMF now accepted globally as an Indian disease, the understanding of the exact role of alkaloids and other etiological agents with respect to pathogenesis will help the management and minimize the blind clinical trials and treatment modalities. There are few clinical trials where Aloe vera is been used in the treatment of oral diseases such as oral lichen planus, recurrent aphthous stomatitis, oral pemphigus, herpetic stomatitis, radiation induced mucositis. Aloe vera has been used in many systemic diseases because of its multiple therapeutic properties such as antioxidant, anti-helminthic, anti-inflammatory, anti-viral, lipolytic, laxative, anti- arthritic and also as a uterine stimulant. The present article aims in evaluation of these clinical trials to assess the efficacy of Aloe vera as a therapeutic modalities in OSMF.

Keywords: Aloe vera, Oral diseases, Oral precancer, Oral submucous fibrosis

Introduction

Oral submucous fibrosis (OSF), now globally accepted as an Indian disease, the condition has also been described as idiopathic scleroderma of mouth, idiopathic palatal fibrosis and sclerosing stomatitis. It was first described three decades ago by Pindborg & Sirsat (1966). The hallmark of the disease is submucosal fibrosis that affects most parts of the oral cavity, pharynx and upper third of the esophagus leading to dysphagia and progressive trismus due to rigid lips and cheeks. Recent epidemiological data indicates that the number of cases of OSF has raised rapidly in India from an estimated 250,000 cases in 1980 to 2 million cases in 1993[1].

Oral submucous fibrosis is diagnosed on the basis of clinical criteria including oral ulceration, paleness of the oral mucosa and burning sensation (particularly in the presence of spicy foods), hardening of the tissue and presence of characteristic fibrous bands. The fibrosis involves the lamina propria and the submucosa and may often extend into the underlying musculature resulting in the deposition of dense fibrous bands giving rise to the limited mouth opening which is a hallmark of this disorder[1].Aloe Vera is used in various oral diseases like gingivitis, denture sore mouth[2], Shingles and Herpetic stomatitis[2], oral lichen planus[3,4], minor recurrent aphthous ulcer[5], leukoplakia, oral submucous fibrosis[6]. They are available in different forms like gel, ointment and also as drinks, capsules etc. The extra oral adverse effects reported are very few such as burning on

topical application, contact dermatitis, and mild itching[6].The present article aims in evaluation of these clinical trials to assess the efficacy of Aloe vera as a therapeutic modalities in OSMF.

Materials and methods

The retrospective multiple level clinical trials study done on having OSMF patients comes for regular checkup in Department of Dentistry, S.P. Medical College Bikaner, Rajasthan.

Study design

Dental OPD In department of Dentistry, SPMC Bikaner

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Randomized controlled trials

↓

Complain of restricted mouth opening (<4mm) with white lesion on soft palate, uvula, palatoglossal arches and buccal mucosa

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Total no. of patients (Men and Women) age group ≤ 30

↓

Aloe-vera gel apply on white lesion thrice a day × 1 months

↓

Regular checkup of patients within fifteen days in department of dentistry, S.P.M.C. Bikaner

Results

The present study showed the results as follow:

Table: Shows the opening of mouth after local application of aloe-vera gel.

Mouth opening at base line	After 15 days	After 30 days
< 4mm	5mm-6mm	6mm-7mm

Discussion

Aloe vera being used in various diseases is said to have certain active components like saponins, lignin, salicylic acid, anthraquinones and amino acids[7] in which anthraquinones have the strong anti-bacterial, anti-viral and anti-neoplastic properties[8]. It is unique properties of Aloe vera such as potent antioxidant, immune stimulant in potentially malignant disorders like leukoplakia, erosive lichen planus and oral submucous fibrosis. .Recent clinical trials of Aloe vera on oral diseases give very few side-effects with nausea as the main. Aloe vera showed the most beneficial effect in oral lichen planus but no significant benefit in radiation induced mucositis.

The study included 30 patients (age ≤ 30) having restricted mouth opening (<4mm) with white lesion on soft palate, uvula, palatoglossal arches and buccal mucosa also. The patients giving history of tobacco chewing, areca nut chewing habits since 5 years regularly. Exclusion criteria included pregnant women, taking contraceptive before 6 months, systemic history like as cardiac disease, metabolic disorders, respiratory diseases etc. and any genetic disease or any kind of syndrome.

Present study showed that aloe vera used as a gel in topical application on OSMF patients have a restricted mouth opening (4mm). This aloe vera gel topical applied on soft palate, uvula, palatoglossal arches and buccal mucosa by the patients thrice a day for one month. The clinical observation a significant mouth opening (6mm) in OSMF patients. Sudarshan et al[9] in 2012 a randomized parallel single blind study in 20 OSMF patients and divide two group, one group used aloe vera gel 5 mg thrice a day for three months and another control group used as antioxidant capsule twice a day for three months and results showed that significant reduction in burning sensation (p=0.008), mouth opening (p=0.02) and cheek flexibility (p=0.01) in group one as compared to group 2. The unique properties of Aloe vera such as potent antioxidant, immune stimulant in potentially malignant disorders like leukoplakia, erosive lichen

planus and oral submucous fibrosis. There are very few clinical trials in use of Aloe vera exclusively in oral diseases in spite of significant medicinal value.

Conclusion

Various available data suggests that the main causative agents for OSF are the constituents of areca nut, mainly arecoline, whilst tannin may have a synergistic role. Arecoline will interfere with the molecular processes of deposition and/or degradation of extracellular matrix molecules such as collagen. Aloe vera has been proved to have multiple and few unique properties with very less side-effects and hence can be definitely tried in many oral and extra-oral diseases. The future demands, for more human clinical trials, utilizing the unique properties of Aloe vera in oral submucous fibrosis patients.

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