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Efficacy And Safety of Sauropus Androgynous in the Treatment of Aphthous Stomatitis- A Placebo Controlled Double Blind Trial

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Abstract
Recurrent aphthous stomatitis (RAS) is a common inflammatory condition of unknown aetiology, although a variety of predisposing and other risk factors have been identified. Manifestation of the disease can range from mild to severe and, in extreme cases, even hinder a person's ability to eat, thereby compromising the patient s nutritional status[1].
The cause of RAS is unknown, although several factors are suspected including genetics, stress, nutritional deficiencies, diet, hormonal changes, and immunological disorders.[2,3] Due to its varied etiology, it is difficult to find a definitive cure and hence the current management protocol is aimed towards ameliorating the symptoms. Sauropus androgynous (SA) is a member of the family Phyllanthaceae. The aim of the present study was to carry out randomized, placebo controlled investigation into the efficacy of Sauropus androgynous leaves in patients with RAS One hundred adult patients who presented with RAU and healthy otherwise were included in the study. A clinical diagnosis of RAS was made based on the presence of painful ulcers on an erythematous base with duration less than 48 hours. Patients were excluded if they presented with any underlying systemic disorder, suffering from an uncorrected dietary defect, or had a history of probable sensitivity to mouthwash or toothpaste. Informed consent was obtained and general history, history with reference to ulcer number, duration, degree of pain. Past history of similar ulcers, time taken to heal was recorded.
SA in both forms offered advantages over steroids in our study and is safe in all patients including infants and pregnant women, in whom there may be reluctance to use steroids.

INTRODUCTION

Recurrent aphthous stomatitis (RAS) is a common inflammatory condition of unknown aetiology, although a variety of predisposing and other risk factors have been identified. Manifestation of the disease can range from mild to severe and, in extreme cases, even hinder a person's ability to eat, thereby compromising the patient s nutritional status[1]

The cause of RAS is unknown, although several factors are suspected including genetics, stress, nutritional deficiencies, diet, hormonal changes, and immunological disorders.[2,3] Due to its varied etiology, it is difficult to find a definitive cure and hence the current management protocol is aimed towards ameliorating the symptoms.

Treatment for RAS is symptomatic; the goals being to decrease pain, healing time, reduce the number and size of the ulcer, and to increase disease-free periods. Current treatment options include topical agents, systemic and topical steroids, cauterization, antibiotics,active enzymes, laser treatments and combination therapy.

Sauropus androgynous (SA) is a member of the family Phyllanthaceae. This plant is spread in India and other south east Asian countries. In India, it is widely known as Multi Vitamin Leaf and is used in cooking and as medicinal plant, as different parts of this plant have different usefulness. Leaves and roots of SA can be used to relieve fever,urinary problems, earache and also as a slimming agent[4].

The aim of the present study was to carry out randomized, placebo controlled investigation into the efficacy of Sauropus androgynous leaves in patients with RAS.

MATERIALS AND METHODS

One hundred adult patients who presented with RAU and healthy otherwise were included in the study. A clinical diagnosis of RAS was made based on the presence of painful ulcers on an erythematous base with duration less than 48 hours. Patients were excluded if they presented with any underlying systemic disorder, suffering from an uncorrected dietary defect, or had a history of probable sensitivity to mouthwash or toothpaste.

Informed consent was obtained and general history, history with reference to ulcer number, duration, degree of pain. Past history of similar ulcers, time taken to heal was recorded.

Assessment of ulcer was done using the following parameters

Assessment of pain was done subjectively and scored as follows:

No Pain 0, mild pain 1, moderate pain 2 and severe pain 3

Determination of ulcer size:

No ulcer 0, 1-5mm- 1, 6-10 mm- 2, >10 mm- 3

Assessment of ability to take food:

Ability to eat normal food: 0

Ability to eat bland diet only: 1

Ability to take liquids only: 2

Laboratory Investigations included:

Hemoglobin, Total WBC Counts , Differential Count, Platelet count, Random Blood Sugar, Liver Function Test and Peripheral smear

Study Medication and Dose for test group

Randomized double-blind placebo controlled trial was conducted on 60 patients. Patients were divided in to four groups.

Group 1: Fresh leaves of SA were shade dried and converted into capsule containing 375 mg of the leaf extract to be given three times a day per orally

Group 2: Fresh leaves of SA were shade dried and converted into an ointment and patients were instructed how to apply the ointment for subsequent applications.

Group 3: Control group was given Vitamin B complex preparation

Group 4: Placebo ointment were given and patients were instructed how to apply the ointment for subsequent applications.

Table 1: Treatment allocations

Drug	Formulation	Route	Dose, frequency and Duration	No of patients	Purpose
Vitamin B Complex	Capsule	Oral	1 capsule TID for 7 days	15	Control
Sauropus	Capsule	Oral	375 mg TID for 7 days	15	Efficacy and safety
Placebo (Sucralfate Gel)	Ointment	Topical	Sufficient quantity TID for 7 days	15	Control
Sauropus	Ointment	Topical	Sufficient quantity TID for 7 days	15	Efficacy and safety

RESULTS

A total of 60 patients were enrolled into the study and completed the first supervised part of the study. Demographic details of patients together with details of their baseline ulcer history are shown in Table 1. The number of ulcers and baseline soreness scores were similar for the two treatment groups (SA capsule and SA ointment) ($P > 0.05$). Following initial application, patients in both treatment groups reported a rapid reduction (P ¼ 0.0004) in their discomfort scores and size of the ulcer. Ability to eat improved with treatment as shown in Table 2.

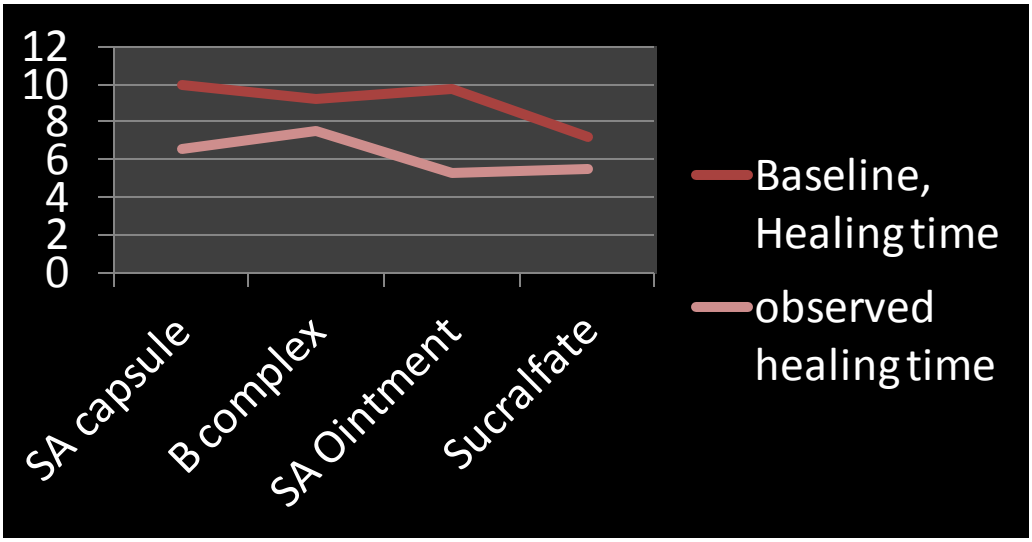
Table 1: Demographic characteristics of patients

	Age (Years)	Frequency (Monthly)	Number of ulcers
Test Drug Capsule	26.5(6.4)	0.5 (0.7)	2 (1.4)
B Complex Capsule	30.6 (16.9)	2.3 (1.5)	3.7 (3.2)
Test Drug ointment	44(8.2)	2.3 (1.5)	2.7 (0.6)
Sucralfate ointment	30.6 (13.2)	2.5 (1.1)	1.5 (0.8)

Table 2: Score reduction among various groups

Group	Size	Pain	Diameter	Induration	Ability to eat	Total
Sauropus Capsule	0.5 (0.7)	2.0 (1.4)	0.6 (0.8)	2.3 (1.5)	1 (0)	4.7 (1.0)
Vitamin B Complex	1.39 (1.1)	2.0 (0.9)	2.3 (1.5)	1.5 (1.6)	1.5 (1.6)	7.8 (4.5)
Sauropus Ointment	0.9 (0.2)	2.3 (0.6)	1.6 (0.5)	1.6 (1.3)	1 (0)	7.7 (1.5)
Placebo (Sucralfate Gel)	0.9 (0.8)	2.0 (1.4)	0.6 (0.8)	1.3 (0.5)	0.8 (0.4)	5.0 (1.3)

Figure 1: Healing time comparison



DISCUSSION

Traditional medicine is an important source of potentially useful compounds for the development of chemotherapeutic agents.[5.] A wide range of medicinal plant parts is used for extract as raw drugs and they possess varied medicinal properties [6]. SA, also known as star gooseberry, or sweet leaf, is a shrub grown in some tropical regions as a leaf vegetable. In India, as it is known Multivitamin Plant ,it is an excellent source of vitamins A, B, C, carotenoid and also it has high nutritive value and contains phytochemicals which can act as antioxidant [7] Studies have proved that the leaves of SA has high levels of provitamin A carotenoids, vitamins B and C, protein and minerals[8]. SA plant extracts have showed to have anti-inflammatory effects and antioxidant activity as well [9]

Our results very clearly indicated that SA capsule and Ointment were better than the control group in terms of the parameters evaluated. Parameters used to evaluate the outcome of treatments in the management of oral ulceration included the incidence of ulceration, the duration of ulceration is the mean duration of individual ulcers, pain perception and the quality of life improved comparatively.

Our patients showed a good compliance indicating the acceptability of the product in either form.

The most significant outcome of this study was the sustained reduction in pain scores after application of Topical SA and Topical placebo (Sucralfate Gel). Both preparations caused significant, immediate reduction in discomfort following application. This would suggest some protective or barrier action arising from placement of this specific ointment. The effects seemed to last for at least 30 min. This protective or barrier property because of topical application may support further the use of topical medications in the management of symptoms arising from RAU.

Topical medications appear to be the first choice treatment for RAU. Such preparations have its own limitations though in terms of mode of drug delivery, subsequent compliance and retention on the oral mucosa. These features probably impact significantly on the efficacy of the agent, but do present challenges to the pharmaceutical industry for appropriate development.

We also observed a reduction in the number of ulcers over time in SA capsule group in comparison to the placebo group which speaks in terms of the efficacy of SA as an immunity enhancer.

Topical steroids are commonly used in the management of RAU. Randomized controlled Trial on topical steroids demonstrated a significant reduction in pain compared with placebo, but showed no effect on reducing the frequency of RAU occurrence[10]. Other similar studies demonstrated weak evidence of a reduction in pain and ulcer duration, without significant adverse effects [11–16]. Nevertheless, SA in both forms offers advantages over steroids in that it is safe in all patients including infants and

pregnant women, in whom there may be reluctance to use steroids.

This study with a herbal medication is probably the first and a right step in the direction of searching for novel and more effective therapeutic agent in the prevention of development and recurrence of Recurrent Aphthous Stomatitis and more studies with larger groups have to be undertaken.

REFERENCES

1) Scully C. The diagnosis and management of recurrent aphthous stomatitis: a consensus approach. J Am Dent Ass 2003; 134:200-207.
2) Scully C and Felix DH. Oral medicine: update for the dental practioner. Aphthous and other common ulcers. Br Dent J 2005; 199(5):259-264.
3) Scully C and Porter SR. Recurrent aphthous stomatitis: current concepts of etiology, pathogenesis and management. J Oral Pathol Med 1989; 18(1):21-7.
4) Benjapak N, Swatsitang P, Tanpanich S. Determination of antioxidant capacity and nutritive values of Sauropus androgynus .KKU Sci J.2008; 36(4): 279–89.
5) Palombo EA, Semple SJ. Antibacterial activity of traditional Australian medicinal plants. Journal of Ethno Pharmacol 2001; 77: 151-157.
6) Uniyal SK, Singh KN, Jamwal P, Lal B. Traditional use of medicinal plants among the tribal communities of Chhota Bhangal, Western Himalayan. Journal of Ethnobiol. Ethnomed 2006; 2: 1-14.
7) Gayatri Nahak, Rajani Kanta Sahu. Free Radical Scavenging activity of Multi-vitamin Plant Sauropus androgynus L.Merr. Researcher. 2010; 2(11): 6,14. ISSN: 1553; 9865.http://www.sciencepub.net.
8) Rob Fletcher. School of Land and Food. The University of Queensland Gatton College, Australian New crops Newsletter, Australia.http://www.newcrops.uq.edu.au/newslett/ncnl9191
9) Lee KH, Padzil AM, Syahida A, Abdullah N, Zuhainis SW, Mazaih M, Sulaiman MR, Israf DA, Shaari K, Lajis NH. Evaluation of Anti-inflammatory, Antioxidant and Antinociceptic od six Malaysian Plants. 2011. Journal of Medicinal Plants Research Vol. 5(23), pp. 5555–5563
10) Thompson AC, Nolan A, Lamey PJ. Minor aphthous oral ulceration: a double-blind cross-over study of beclomethasone dipropionate aerosol spray. Scott Med J 1989; 34: 531–2.
11) Mcfall WT. JR Clinical report. Effect of flurandrenolone on oral aphthae. J Periodontol 1968; 39: 364–5.
12) Browne RM, Fox EC, Anderson RJ. Topical triamcinolone acetonide in recurrent aphthous stomatitis. A clinical trial. Lancet 1968; 1: 565–7.

13) Macphee IT, Sircus W, Farmer ED, et al. Use of steroids in treatment of aphthous ulceration. Br Med J 1968; 2: 147–9.
14) MerChant HW, Gangarosa LP, Glassman AB, et al. Betamethasone-17-benzoate in the treatment of recurrent aphthous ulcers. Oral Surg Oral Med Oral Pathol 1978; 45: 870–5.
15) Pimlott SJ, Walker DM. A controlled clinical trial of the efficacy of topically applied fluocinonide in the treatment of recurrent aphthous ulceration. Br Dent J 1983; 154: 174–7.
16) Miles DA, Bricker SL, Razmus TF, et al. Triamcinolone acetonide versus chlorhexidine for treatment of recurrent stomatitis. Oral Surg Oral Med Oral Pathol 1993; 75: 397– 402.