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Original Research

Traditional methods used by patients for the management of recurrent aphthous stomatitis

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ABSTRACT

Aim: Recurrent aphthous stomatitis (RAS) is the most common ulcerative condition of oral mucosa. Due to the lack of curative treatment in RAS, patients seek conventional and alternative treatments. Data regarding alternative treatments for RAS used by Indian population is lacking. Hence, the purpose of our study was to determine and describe the various traditional modalities used by patients with RAS. **Methods:** Present study was carried out in patients visiting dental hospital from 2015-2016. Detailed case history recording and clinical examination was done by trained professionals. Patients diagnosed with RAS were recruited in our study. Questionnaire was given for RAS patients and data obtained was analysed. **Results:** A total of 326 patients reported with RAS. The study sample consisted of 171 females (52.5%) and 155 males (47.5%). In our study 198 subjects (60.7%) gave history of receiving treatment and 128 subjects (39.3 %) did not receive any kind of treatment. Out of the 198 subjects, 63 (31.8%) of individuals received conventional treatment, alternative treatments were opted by 85 (43%) patients and combined treatment modalities were opted by 50 (25.2%) patients. Over the counter medications were used by 36 (18%) patients. Treatment outcome was satisfactory according to 137 (69%) individuals and treatment was not satisfactory for 61 (31%) patients. **Conclusion:** This study gives insight into the various traditional medicines used in south India for RAS and to the best of our knowledge, this is first study which describes the same. Our study adds new information to the current literature about traditional medications for RAS.

KEY WORDS: Recurrent aphthous stomatitis; treatment; alternative; traditional

INTRODUCTION

Recurrent aphthous stomatitis (RAS) is the commonest ulcerative condition affecting the oral mucosa [1]. RAS characteristically occurs in the non-keratinized areas such as lips, tongue, buccal mucosa and soft palate. RAS rarely occurs on the dorsum of the tongue, gingiva and hard palate [2,3]. They are usually painful, single or multiple shallow ulcers, which is round in shape and surrounded by an erythematous halo [4]. According to Scully C [2] the term "recurrent aphthous stomatitis" should be used for only those recurrent ulcers confined to the mouth in patents without systemic disease. Ulcer is covered by a yellowish-gray fibro membranous layer [1]. It is common in patients with age range of 10–40 years, and affects predominantly women. Individuals with higher socioeconomic status were more affected [5]. The underlying etiology is not clearly identified, though various factors are known to predispose to the occurrence of aphthous ulcers. Genetic background, stress, anxiety, food allergens, local trauma, smoking cessation, menstrual cycle, chemicals were identified as predisposing factors [5-7]. In a Cochrane analysis by Brocklehurst P et al [8] bacterial or viral etiology was mentioned as unlikely. The pathogenesis of RAS involves activation of T lymphocytes through cell-mediated immunity. Tumour necrosis factor-α along with other cytokines cause epithelial cell death and aphthous ulceration [8,9]. There is no definitive treatment available for RAS [2]. Brocklehurst P, et al [8] in their analysis about systemic interventions for RAS found that no single treatment was effective. The interventions were grouped as immunomodulatory/anti-inflammatory and uncertain [8]. Medications used for RAS aimed primarily to relieves symptoms, suppress the local immune response and prevents secondary infection [2, 9]. Based on the severity of the ulcers, many medications are being used in the management of RAS. Therapies include local physical treatment, antimicrobials, topical anti-inflammatory, topical analgesics, topical corticosteroids, systemic immunosuppressants [2,4,10-12]. Due to the lack of curative treatment in RAS, patients seek various types of treatments such as conventional and alternative. Alternative treatment methods

adopted by the patients vary with the region and population. Data regarding alternative treatments for RAS used by Indian population is lacking. Hence, the purpose of our study is to determine and describe the various treatment modalities adopted by patients with RAS.

MATERIALS AND METHODS

The present study was conducted among the patients reported to the department of Oral Medicine and Radiology of a private dental hospital in Mangalore from 2015-2016. Ethical clearance from the Institutional Ethical Committee was obtained. A written informed consent was obtained from the patients. Detailed case history recording and clinical examination was carried out by trained professionals as per institutional protocol. Among the patients reported to dental hospital for various complaints only those patients diagnosed with RAS and willing to participate in the study were recruited in the study. The diagnosis of RAS was based on history and clinical examination. Present study also considered Natah et al [13] major and minor criteria for the diagnosis of RAS. Patients with oral mucosal ulcers other than RAS and those not willing to participate in the study were excluded. Questionnaire was provided for patients with RAS, which contained details about demographic characteristics, chief complaint, history of presenting illness, medical and dental history, family history, personal history, history of previous episodes of mouth ulcers, nature of ulcers, treatment received, nature of treatment, outcome of treatment.

Statistical Analysis

Data obtained from the questionnaire was analysed using SPSS software 16.0 for windows.

RESULTS

A total number of 326 patients reported to the department of oral medicine and radiology with RAS. The study sample consisted of 171 females (52.5%) and 155 males (47.5%) as shown in Figure 1. The age of patients with RAS was ranging from 13 to 58 years in our study. In our study 198 subjects (60.7%) gave history of receiving treatment and 128 subjects (39.3%) did not receive any kind of treatment. Out of the 198 subjects who used treatment modalities, 63 (31.8%) of individuals received conventional treatment for RAS. Alternative mode of treatment was opted by 85 (43%) of patients. Both conventional and alternative treatment was received by 50 (25.2%) patients. Distribution of treatment modalities adopted by patients was shown in Figure 2. Conventional treatment modalities included drugs prescribed by physicians, dentists as well as over the counter medications. Treatment prescribed by medical or dental professionals included multivitamin supplements, topical anesthetic/analgesics, antiseptic mouthwash, topical steroids, amlexanox paste, levamisole tablets and rebamipide tablets. Over the counter medications were used by 36 (18%) of patients who underwent treatment. Over the counter medications included multivitamin supplements and topical anesthetic/analgesics. The alternative treatment modalities included diet modifications, home care remedies and ayurvedic medicines. Home care remedies practiced by study subjects included chiefly salt water gargling, diet modification such as buttermilk intake, yogurt intake, tender coconut water intake, increased ragi consumption, avoiding eating spicy food, pineapple and mangoes. Others used application of ghee over the ulcer, chewing of tender leaves of guava, chewing fresh and tender black berries leaves for a while and gargling, using amla (Indian goose berry) for the ulcer, application of honey, chewing 5-6 basil leaves (tulsi leaves), gargling with fresh coconut milk, applying coconut oil over the ulcers, chewing raw coconut. Various treatment modalities and the number of patients using is given in Table 1.

Table 1: Various treatment modalities used by RAS patients.

Nature of treatment	Number of patients
Conventional medicines	
• Topical anesthetic/analgesics,	12
• Multivitamin supplements	26
• Antiseptic mouthwash,	8
• Topical steroids,	7
• Amlexanox paste,	5
• Levamisole tablets	1
• Rebamipide	3
	Total: 63 (31.8%)
Alternative treatment	
(home care remedies and traditional medicines)	
• Diet modifications	33
• Salt water gargle	19
• Application of ghee over the ulcer	3
• Application of honey	1
• Chewing tender leaves of guava,	4
• Chewing fresh and tender black berries (Jamun) leaves	6
• Amla (indian goose berry)	3
• Chewing 5-6 basil leaves (tulsi leaves),	7
• Gargling with fresh coconut milk, applying coconut oil over the ulcers, chewing raw coconut.	9
	Total: 85 (43%)
Combined treatment (conventional and traditional)	**Total: 50 (25.2%)**

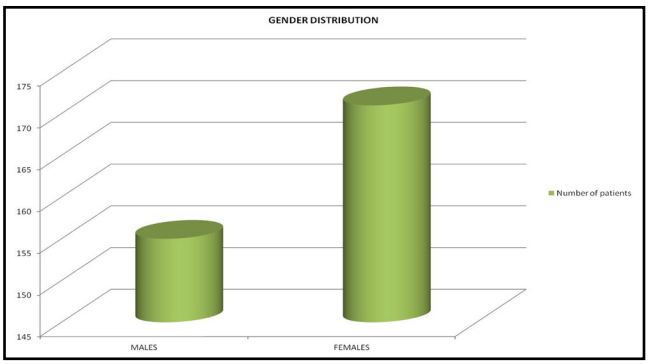

Figure 1: Gender distribution of study subjects.

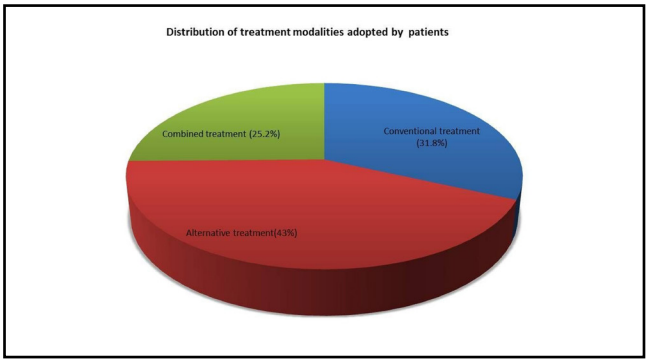

Figure 2: Distribution of treatment modalities adopted by patients.

Treatment outcome of 60.7% patients who received treatment was obtained. Treatment outcomes in terms of palliative care were found satisfactory in majority of subjects in all 3 different subgroups (conventional, alternative and combined treatment). Pain relief, decreased frequency of ulceration and ulcer healing were seen in patients using conventional medications. Satisfactory results were recorded in 137 (69%) individuals and in 61 (31%) patients treatment was not satisfactory. Out of 63 subjects who had opted for conventional treatment 42 subjects (66%) mentionedtreatment as satisfactory and 21subjects (34%) reported as not satisfactory. Out of 85 subjects who had opted for alternative treatment modalities 51 subjects (60%) mentioned treatment as satisfactory and 34 subjects (40%) reported as not satisfactory. Out of 50 subjects who had opted for combined treatment modality 44 subjects (88%) mentioned treatment as satisfactory and 6subjects (12%) reported as not satisfactory.

DISCUSSION

The present study was conducted in patients visiting the dental hospital in Mangalore. The diagnosis of RAS was based on history and clinical examination because there is no established laboratory procedure for the definitive diagnosis and even the histopathological examination of the lesion does not provide confirmative diagnosis. Natah et al [13] has provided few major and minor criteria for the diagnosis of RAS minor. Major criteria for recognizing and diagnosing the condition were 1) External appearance 2) Recurrence 3) Mechanical hyperalgesia 4) Self-limitation of the condition. Minor criteria for recognizing and diagnosing the condition were 1) Family history of RAS 2) Age at onset 3) Location of ulcers 4) Duration of the lesion 5) Pattern of recurrence 6) Histological examination 7) Presence of a precipitating factor 8) Presence of haematinic deficiencies 9) Negative association with smoking 10) Therapeutic trial with gluco-corticosteroids. According to Natah et al [13] diagnosis can be made if the condition fulfils the four major and one minor criteria. RAS is a multifactorial process. Due to this multifactorial etiology, there is no definitive treatment for RAS. The primary goals of therapy are palliation, prevention of recurrence of ulcers and promotion of ulcer healing [14] Several medications are being used for the treatment of RAS. In present study we evaluated the various types of treatments received by the patient and the outcome of those. Majority of patients (60.7%) used some form of treatment. The treatment modalities used were varied. Patients approached physicians and dentists for conventional treatment. Study subjects also gave history of self care by using home care remedies and over the counter medications. Alternative therapies were practiced by our patients as traditional medicines and home care remedies. Among the patients who obtained consultation, most of them consulted their general medical practitioners rather than dental practitioners. The conventional treatment obtained by patients included topical anesthetic/analgesics, antiseptic mouthwash, topical steroid, amlexanox paste, multivitamin supplements.

In our study more of home care remedies were practiced in patients of rural areas to relieve symptoms. In the rural areas of India, the use of home care remedies is encouraged to treat simple conditions like RAS by their families and friends. The main reason for use of alternative treatment modality was the easy availability and the low cost of treatment. Our patients believe that use of natural products is safer than conventional medications. Home care remedies practiced by study subjects included chiefly salt water gargling, diet modification such as buttermilk intake, yogurt intake, tender coconut water intake, increased ragi consumption, avoiding eating spicy food, pineapple and mangoes.

Other methods practiced among our study subjects were application of ghee over the ulcer, chewing tender leaves of guava, chewing fresh and tender black berries leaves for a while and gargling, using amla (Indian goose berry) for the ulcer, application of honey, chewing 5-6 basil leaves (tulsi leaves), gargling with fresh coconut milk, applying coconut oil over the ulcers, chewing raw coconut.

Since our study revealed use of various traditional medicines and home care remedies, a thorough literature search was carried out regarding the usefulness of each one of those traditional medicines and home care remedies used by our patients.

Traditional medicine used to maintain health is sum total of knowledge, skills and practices of people indigenous to different cultures based on their beliefs and experiences [15]. Diet modification used by the patients to reduce the frequency and duration of the ulcers was based on the traditional beliefs of Ayurveda. Ayurveda is an ancient Indian system of health care. It adopts a holistic view of man in health and illness. Ayurvedic treatment aims to treat the patient a whole. Its practice involves use of drugs, diets as well as certain other methods. [16] Dental health is held to be very individualistic in Ayurveda, varying with each person's constitution, climate changes due to solar, lunar and planetary influences. Ayurveda categorises a person's constitution based on the predominance of three doshas, vata, pitta and kapha. The dominant dosha in an individual as well as external environmental influences determine health as well as dental health in Ayurveda [15,17].

A study carried out by Sawair FA [10] in Jordanian patients revealed various alternative treatments in that region. Their study subjects were university students where as present study composed of general population visiting dental hospital in Mangalore, India for various dental treatments. According to Sawair FA [10] their study samples were young educated people, hence higher probability of remembering names of medicines and products used to treat RAS. Alternative treatments used by their patients were Tahini, salt water, lemon, pomegranate, chamomile, sodium bicarbonate powder, cumin, sage, coffee, ice, strawberry, berry, olive oil, yeast, tomato paste, castor oil, squeezing ulcers, smoking, cigarette ash. This clearly indicates the difference in the use of alternative treatments depends on the region and population. Except the use of salt water, most of other treatments were not practiced in South Indian population.

Application of ghee helped the patient due to its soothing and protective effect. Ghee (clarified butter), has been utilized in Ayurveda as a therapeutic agent for thousands of years. According to Ayurveda, ghee protects the body from various diseases and promotes longevity. Its lubricating action helps in reducing pain of mouth ulcer [18].

Honey application over the ulcer has been used as a traditional remedy by Indians. Honey can promote healing [19,20]. Honey covers the ulceration which could promote healing and reduce symptoms.

Our study subjects revealed that chewing tender leaf of guava was helpful. Psidium guajava Linn (guava) is usually consumed as fruit but in subtropical areas of the world it is also used as folk medicine due to its pharmacologic activities [21]. Leaf of guava has been traditionally used for treating mouth ulcers in this region. Exact mechanism of action of guava leaf in case of mouth ulcers is unknown. Gutiérrez et al [22] have reviewed potential pharmacologic actions of the fruit, roots and leaf extracts and found antioxidant, anti-microbial, anti-genotoxic, anti-plasmodial, cytotoxic, hepatoprotective, anti-allergy, anti-spasmodic, cardioactive, anti-inflammatory and anti-nociceptive, anti-cough and anti-diabetic activities in vitro and in animal models [22].

Jamun or Indian Black berry is considered as a traditional medicine. Chewing fresh and soft black berries leaves for a while was practiced by our patients, which was believed to helps in mouth ulcers. Literature revealed that the Indian Black berry leaves have antibacterial properties, which might be effective for ulcer healing [23].

Our patients were using Amla (Indian goose berry) for the ulcers. Indian goose berry was found to assist in tissue healing when taken internally [15]. In the literature, evidence is lacking to check the effectiveness of Amla in case of RAS.

Based on the history of use of Tulsi leaves for ulcers by patients, literature search was performed regarding the benefits of tulsi. Literature revealed that Tulsi (Ocimum sanctum) is an oral disinfectant. Tulsi destroys more than 99% of germs and bacteria in the mouth. It also has astringent properties. It cures ulcer in the mouth [24]. Ocimum sanctum at a dose of 100 mg/kg was found to be effective antiulcer agent in a study. It was mentioned that antiulcer effect of Ocimum sanctum due to its cytoprotective effect rather than antisecreatory activity [25].

Application of coconut oil, helped the patient with the soothing and protective effect. Symptomatic relief is obtained by patient with RAS. Coconut oil is a very important source of medium chain fatty acids (MCFAs). They also stimulate Lactobacilli and therefore have a beneficial effect [26].

In our study 39.3 % patients did not receive any kind of treatment. Reason for not receiving the treatment was due to lack of awareness and negligent attitude towards it. The casual attitude towards the treatment was due to its common occurrence in the population, recurrent nature of the lesion, tolerable pain. Even though RAS is known as a common lesion, our previous study revealed the prevalence of patients with RAS as only 1.9% [27].

Most people believe that herbal (natural) or traditional medications are safe. But adverse reactions can result if taken inappropriately, if product is of poor quality and if taken along with other medicines. Thus, patient awareness about safe usage is important. The safety and effectiveness of these remedies was based on the testimonial and tradition of this region.

Satisfactory outcome was due to pain relief and reduction in the duration and frequency of ulceration. In our study use of home remedies for treatment of RAS was observed. This can probably be explained by the following factors. Firstly, the recurrent nature of the condition requires repeated visits to physicians or dentists which is inconvenient as well as expensive. Also, no cu-

rative treatment is at present available for RAS. Home remedies are therefore an attractive alternative.

Our patients opted for diet modification and multiple home care remedies at the same time hence exact frequency of using single home care remedy and effects of the same on RAS couldn't be determined in the study. Another limitation of our study is comparison of effectiveness of various home care remedies with each other was lacking. However objective of the study was contented as various homecare remedies used by RAS patients of south India was described.

CONCLUSION

This study gives insight into the various treatment modalities opted by South Indians for RAS. To the best of our knowledge, this is first study which evaluates the various alternatives and home remedies used in south India for RAS. Most of our patients preferred traditional home remedies rather than physician or dental consultation. Our study adds new information to the current literature about traditional medications for RAS. Future studies can be conducted to determine the usefulness of these traditional Indian medications for RAS.

SOURCE OF SUPPORT

Nil.

REFERENCES

1. Mustafa JA. Prevalence of recurrent aphthous ulceration experience in patients attending Piramird dental speciality in Sulaimani City. J Clin Exp Dent 2013; 5(2):e89-94.
2. Scully C. Aphthous ulceration. N Engl J Med 2006; 355:165-72.
3. Cui RZ, Bruce AJ, Rogers RS 3rd. Recurrent aphthous stomatitis. 34, 475–481. Clin Dermatol. 2016; 34(4):475-81.
4. Ship JA. Recurrent aphthous stomatitis. An update. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1996; 81:141–147.
5. Belenguer-Guallar I, Jiménez-SorianoY, Claramunt-Lozano A. Treatment of recurrent aphthous stomatitis. A literature review. J Clin Exp Dent 2014; 6(2):e168-74.
6. Eisenberg E. Diagnosis and treatment of recurrent aphthous stomatitis. Oral Maxillofacial Surg Clin N Am 2003; 15:111–22.
7. Kutcher MJ, Ludlow JB, Samuelson AD, Campbell T, Pusek SN. Evaluation of a bioadhesive device for the management of aphthous ulcers. J Am Dent Assoc. 2001; 132(3):368-76.
8. Brocklehurst P, et al. Systemic interventions for recurrent aphthous stomatitis (mouth ulcers). Cochrane Database Syst Rev 2012; 9:CD005411.
9. Rivera-Hidalgo F, Shulman JD, Beach MM. The association of tobacco and other factors with recurrent aphthous stomatitis in an US adult population. Oral Dis 2004; 10:335–45.
10. Sawair FA. Recurrent apthous stomatitis: Do we know what patients are using to treat the ulcers? J Altern Complement Med 2010; 16(6):651-5.
11. Akintoye SO, Greenberg MS. Recurrent aphthous stomatitis. Dent Clin North Am 2005; 49:31–47.
12. Volkov I, Rudoy I, Freud T, Sardal G, Naimer S, Peleg R et al. Effectiveness of vitamin B12 in treating recurrent aphthous stomatitis: a randomized, double-blind, placebo-controlled trial. J Am Board Fam Med 2009; 22(1):9-16.
13. Natah SS, Konttinen YT, Enattah NS, Ashammakhi N, Sharkey KA, Hayrinen-Immonen R. Recurrent aphthous ulcers today: a review of the growing knowledge. Int J Oral Maxillofac Surg 2004; 33:221–34.
14. Ghalayani P, Zolfaghary B, Farhad AR, Tavangar A, Soleymani B. The efficacy of Punica granatum extract in the management of recurrent aphthous stomatitis. J Res Pharm Pract 2013; 2:88-92.
15. Singh A, Purohit B. Tooth brushing, oil pulling and tissue regeneration: A review of holistic approaches to oral health. J Ayurveda Integr Med. 2011; 2(2):64–68.
16. Saini R, Sharma S, Saini S. Ayurveda and herbs in dental health. AYU 2011; 32:285-6.
17. Telles S, Naveen K V, Balkrishna A. Use of Ayurveda in promoting dental health and preventing dental caries. Indian J Dent Res 2009; 20:246.
18. Sharma H, Zhang X, Dwivedi C. The effect of ghee (clarified butter) on serum lipid levels and microsomal lipid peroxidation. Ayu 2010; 31(2):134–140.
19. Lusby PE1, Coombes A, Wilkinson JM. Honey: a potent agent for wound healing? J Wound Ostomy Continence Nurs 2002; 29(6):295-300.
20. Varoni EM, Lodi G, Sardella A, Carrassi A, Iriti M. Plant polyphenols and oral health: old phytochemicals for new fields. Curr Med Chem 2012; 19(11):1706-20.
21. Deguchi and Miyazaki: Anti-hyperglycemic and antihyperlipidemic effects of guava leaf extract. Nutrition & Metabolism 2010; 7:9.
22. Gutiérrez RM, Mitchell S, Solis RV: Psidium guajava: a review of its traditional uses, phytochemistry and pharmacology. J Ethnopharmacol 2008, 117:1-27.
23. Bhowmik D, Gopinath H, Kumar BP, .Duraivel S, Aravind G, Kumar KPS. Traditional and Medicinal Uses of Indian Black Berry. Journal of Pharmacognosy and Phytochemistry 2013;1(5):36-41.
24. Ramesh G, Nagarajappa R, Madhusudan AS, Sandesh N, Batra M, Sharma A et al . Estimation of salivary and tongue coating pH on chewing household herbal leaves: A randomized controlled trial. Anc Sci Life 2012; 32(2):69–75.
25. Samit B, Geetika A. Theurapeutic benefits of holy basil (tulsi) in general and oral medicine: A review. IJRAP 2012; 3(6):761-764
26. Khoramnia A, Ebrahimpour A, Ghanbari R, Ajdari Z, Lai O. Improvement of Medium Chain Fatty Acid Content and Antimicrobial Activity of Coconut Oil via Solid-State Fermentation Using a Malaysian Geotrichum candidum. Biomed Res Int. 2013; 2013:954542.
27. Hegde S, Harini K, Ajila V, Babu S, Shetty SR. Prevalence of recurrent aphthous stomatitis: An institutional study. Cumhuriyet Dent J 2015; 18(3):228-234.

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